







0062627

ROYAL BOTANIC GARDENS  
KEW



1.2/181





Digitized by the Internet Archive  
in 2018 with funding from  
BHL-SIL-FEDLINK

<https://archive.org/details/journalofhorticu3918hogg>







January 15, 1885.

THE

# JOURNAL OF HORTICULTURE,

## COTTAGE GARDENER,

AND

## HOME FARMER.

A CHRONICLE OF COUNTRY PURSUITS AND COUNTRY LIFE, INCLUDING BEE-KEEPING.

CONDUCTED BY

ROBERT HOGG, LL.D., F.L.S.

Established



in 1848.

VOLUME IX. THIRD SERIES.

JULY TO DECEMBER, 1884.

LONDON :

PUBLISHED FOR THE PROPRIETOR, 171, FLEET STREET.

1885.



JOURNAL OF HORTICULTURE

AND THE GARDENERS' CHRONICLE

AND THE GARDENERS' CHRONICLE

AND THE GARDENERS' CHRONICLE

LONDON:

PRINTED AT THE JOURNAL OF HORTICULTURE OFFICE,

171, FLEET STREET.





## TO OUR READERS.

---

ON the addition of one more to the now long line of volumes of this Journal, our first words can only fittingly be words of thanks to all who have aided in its completion—to the old writers whose ripe experience has enabled them to teach soundly; to “young scribes” who give promise of becoming worthy representatives of the spade and the pen; to skilled amateurs whose special knowledge and literary accomplishments have enriched its pages; but to you, “our readers,” our thanks are especially due, for it is you who make the writers, your wants that stimulate, your appreciation that encourages, your patronage that sustains.

The period which the accompanying index covers has been one generally favourable for plants and crops; a brilliant summer followed by a dry autumn and mild early winter. We would hope earnestly that this may prove the beginning of brighter and better times for cultivators in gardens and fields—the dawn of wide and general prosperity.

For the future of Horticulture we entertain not the slightest misgivings, but we are confident the love of gardening is widening and deepening. Never before was gardening literature in such great demand, and seekers for information so great as now. These are hopeful encouraging signs, and we have good reason to look forward with cheerfulness to the future.

We are gladdened in our work by ever-arriving testimony of its usefulness. As representative of the three great classes of our constituents we cite from three letters of recent date.

A “HEAD GARDENER,” who has “won his spurs,” writes:—

“I cannot close without tendering my thanks to you for the teaching given in ‘Our Journal.’ Having taken it for several years I look forward with pleasure to its arrival on Thursdays in each week. I think it the best paper we have on practical gardening and for eliciting opinions on matters of general interest.”

A young gardener writes, and his letter does him credit:—

“There are many young men, ever on the look-out for words of advice from the pen of long experience, who will read those words of wisdom of ‘A WORKING GARDENER’ on page 565 with pleasure and profit. It is most encouraging to us to get such advice as we do from time to time through the Journal. I speak as one who has gained much from its pages during the last five years.”

And, lastly, “A LONDON AMATEUR” writes:—

“May the Journal have a prosperous year, and ‘WILTSHIRE RECTOR’ be spared to write many another New Year’s article.”

We can only improve on that good wish by emphasising and widening it. *Our* wish is that all our friends may be spared to write instructively and read approvingly; then will the Journal continue its prosperity.





## INDEX.

- ABERCAIRNY, 572  
 Abutilons, dwarf, 236  
 Acaena microphylla, 350  
 Achimenes, forcing, 581  
 Aerides illustre, 40; A. Lawrenceana, 249; A. Fieldingii, 259  
 African mountain plants, 417  
 Agave geminiflora, 555  
 Ajuga Brockbanki, 70  
 Aleurodes vaporariorum, 33  
 Alexandra Palace, proposed exhibition at, 329  
 Allamandas, resting, 272  
 Allium pedemontanum, 19  
 Alpine plants, choice, 64, 211  
 Alstromeria chilensis, 6  
 Amaryllises, culture of, 154; Mrs. W. Lee, 249  
 Amasonia punicea, 249  
 Amateur's garden, an, 133  
 Androsace lanuginosa, 137; A. carnea, 380  
 Anemones, notes on species, 30; notes on, 68, 173; Honorine Jobert, 393; in pots, 473  
 Anthericum Liliastrium, 139  
 Anthurium Schertzerianum, 433  
 wintering, 272  
 Antigonon leptopus, 118  
 Antirrhinum Asarina, 6; Rowsham Pet. 41; 550  
 Apples—cider, for ornamental planting, 25; trees, pruning and non-pruning, 138; unpruned, 165, 184, 215, 235; culture in New Zealand, 117; Margaret and Madeleine, storing, 181; Lord Suffield, 185; notes on budding young & old trees, 212; useful varieties, 237; reports of Congress, 239, 417, 533; on last year's wood, 258; Lord Grosvenor, 274; in East Worcestershire, 285; and Pears on last season's growth, 293; Warner's King, American Mother, and Gravenstein, 305; origin of Lord Suffield, 318; the old English Codlin, 363; notes on, 373; Tower of Glamis, 374; and Pears, 388; heavy, 409; in Worcestershire—canker, 393; Malakova, 451; American exports of, 526; Lane's Prince Albert, 552; the most popular, 544  
 Apricots, cause of failures, 233; under glass, 274; dried, 284  
 Araucaria imbricata at Dropmore, 170; in Scotland, 300  
 Arnebia echioides, 191  
 Asparagus, making beds for, 258; in autumn and winter, 432; forcing, 583  
 Astragalus alopecuroides, 74  
 Auricula (National) Society's proposed rules, 508; and Carnation Societies, 555  
 Ansten, presentation to Mr., 142  
 Azaleas setting their buds, 130; in summer, 135; tying, 250
- BALSAM TREE, 406  
 Barron, outrage on Mr., 9; presentation to Mr., 114  
 Bath Show, 236  
 Battersea Park, 373  
 Beans, forcing French, 343; Abbott's Magnum Bonum Scarlet Runner, 456  
 Bedding, winter, 383
- Bees—foreign, prolific queens, a good frame hive, 18; seasonable notes, 43, 154; at the Health Exhibition, 43; notes on supering, 69; flowers for, not swarming, 61; supering, 83; notes on the season, moving bees, 84; removing to Heather, Stewarton hives, 103; uniting bees, Caledonian Apian Show, 107; compound frame hive, several queens in one hive, joining swarms, 131; the best hive, 132; supering, bees swarming, uncompleted sections, 133; cure for stings, taking bees to the moors, driven bees, ligurianising, extracting honey, 153; hybrids, 179; the best hive, transferring bees to a new hive, 180; the best hive, 213; in a church, 214; practical hints, queenless hives, necessities of modern bee-keeping, 227; removing supers, 228; glimpses inside hives, queenless hives, 251; estimate of hives, weight of heather honey gathered, 273; echoes from the Heather; bee houses, 295; manipulation of queenless hives, 339; aspect for wintering, 340; simple method of bee-keeping, taking supers and draining honey, 317; spurious honey, simple methods of bee-keeping, 331; honey presser and drainer, Berkshire Bee-keepers' Association, origin of honeydew, 332; a retrospect, 383; queenless hives, 334; notes for the season, 406; frame hive, construction of, 436; bee houses, experiences, 427; wintering and hiving swarms, 449; bee-keeping in Queensland, 472; preparing appliances, 471; drones, 492; foul brood, Mr. Jones's paper on, 493; spurious honey, 494; a practical chapter, 515; British Honey Company, 516; Stewarton hives, 537; Practical bee-keeping for beginners, 559; the term of bee life, 531; and flower colours, 581
- Beet, insect enemies of, 314; wing, 480  
 Beetles—on Strawberries, 334  
 Bedford Show, 70  
 Begonias—at Forest Hill, 93; Queen of the Bedders, 202; new vars.—Goliath, Jules Leguin, Erecta superba, and Madame Emile Galle, 246; Madame Crousse, Octavie, 249; culture of herbaceous, 261; B. socotrana, 263; Tuberosus, in beds, 302; at Reading, 396; Carrieri, 330; Tuberosus from seed, 335  
 Belgium, a visit to, 7, 52, 73  
 Bennett's safety ligature, 71  
 Beutham, death of Mr., 230  
 Benthania fragifera, 435  
 Bertolonias, propagating, 223  
 Besseria elegans, 202  
 Bexley Heath, 238  
 Bishop Auckland Show, 151  
 Bog plants, 442  
 Bohu, Mr. H. G., death of, 193  
 Boiler, Fawkes' slow-combustion, 424
- Bonarcia acutifolia, 573  
 Books—"Flora of British Fungi," 19; "Modern Window Gardening," 95; "Fruit Manual," 333, 413; "British Apples," 533; "Plant Lore, Legends, and Lyrics," 573  
 Botanic Society (Royal) Annual Meeting, 143  
 Bouvardias, cool treatment of, 230, 352; planted out, 373, 331  
 Bowstring Hemp, 122  
 Box edging, 333; planting edgings of, 433  
 Bramble, Parsley-leaved, 153; crimson-fruited, 232  
 Reavor geminiflora, 152  
 Brighton Show, 217  
 Brodiaea coccinea, 74  
 Brussels Sprouts—season for, 335; in September, 454, 505, 535  
 Bulbous plants, hardy, for conservatories, 234  
 Balbs for early forcing, 299; resting, 431; exhibition at Haarlem, 459  
 Butterflies as botanists, 69  
 Button-hole bouquets, making, 185, 241
- CACCEOUS PLANTS, 310, 333, 423  
 Caladium, 581  
 Calanthes, culture of, 83, 570; vestita, Veitchii, and veratrifolia, 397; Sandhurstiana, 535  
 Calceolarias, Alpine, 284; propagation of, 317; 471  
 Caledonian (Royal) Horticultural Show, 58; Society's meeting, 527  
 Cambridge, the bog garden, 442; hardy plants at, 469  
 Camellias, cleansing, 210; thinning buds of, 415  
 Canker in fruit trees, cause and cure of, 497  
 Campanulas Van Houttei and glomerata var., 6; pulla, 89; Balfouriana, 114; Raineri, 137; Vidali, 142; Waldesteiniana, fragilis, 279  
 Caragana angustifolia, 442  
 Carnations—at Chelsea, 28; Celia and Martha, 41; and Pieotes, new varieties, 92; exhibiting, 93; Gloire de Nancy, 117, 397; yellow ground, 163; layering, Simonite's knife for, 215; for winter, 332; insects affecting, 473; Grand Monarch, 535; in winter, 583  
 Carnation (National) Society's Special Meeting, 33; administration, 43; Southern Show, 81; and Mr. Dodwell, 429; proposed rules, 508  
 Carpet-bed design, 164, 378  
 Carter, death of Mrs., 9  
 Carrots attacked by wireworms, 153  
 Cassia fistula, 281  
 Cassia, death of Baron de, 374  
 Caterpillars, destroying, 237; and tits, 393  
 Cattleyas—Gaskelliana alba and calaminata, 41; at Southport, 51; C. Sanderiana, 57; notes on, 355; C. trophthalma, 441; C. bulbosa grandiflora, 535  
 Celosias for winter, 131
- Celery muggot, destroying with tobacco water, 213; with petroleum, 229; diseased, 497  
 Centropogon Luyana, 179  
 Ceterach aurea culture, 242  
 Ceylon vegetation, 559  
 Charles' (Lowfield) Nurseries, 421  
 Chelsea garden, 373  
 Cheltenham Nurseries, Mr. Cypher's, 545  
 Cherry house, management of, 213  
 Chillwell Nurseries, 513  
 Christmas berries, 573  
 Chrysanthemums—rooted and, 25, 51, 63, 89, 93; single, 72; culture of, 113; dwarf, 141; Bendigo, 221, 231; in 1884, 233; Opus, 329; National Society's meeting, Margot and Mille Leeroix, certificate, 339; early, 347; exhibition of, catalogue of, 359; Mons. Astorg and Tarin, certificate, 374; for the conservatory, 332; new Japanese, 339, 394; notes on, 392; National Society's Meeting, 394; early-dowering, 419; in London, at Swanley, 412; National Society's meeting, new varieties certificate, 417, 442, 446; cutting down, 435; Jeanne d'Arc, 441; at Beechdale, 459; Mr. Burbridge's work on, 465; establishing sports, 431; returning blooms, Anemone-Japanese, 462; Fabias de Madeiranaz, 463; cutting down, 480; Hero of Mid-Lothian, 483; notes on new, 501; at Beechdale, 502; Bendigo, 502, 505; Val d'Or, 505; a proliferous, 505; returning blooms, 513; growing in small pots, 519; Mlle. M. Tezier and Jeanne d'Arc, Bendigo, and Mabel Ward, 527; notes on new varieties, staging Pompons, Lord Alcester, 539; Japanese for exhibition, 532; proliferous, 533; Japanese, 539  
 Bendigo, 547; late vars., 547; Pompons, 547; National Society, 547; future of, 543; Proliferous, 548; Jeanne d'Arc and Madame Madeline Tezier, 548; for grouping, 551  
 Chrysanthemum shows—list of, 376; Stoke Newington, 413; Putney, Croydon, 414; Lambeth, Kingston, 415; National, Southampton, 413; Havant, 415; Crystal Palace, Bath, 413; Walton, Richmond, 417; Reading, Huddersfield, 418; Winchester, Lincoln, Llandfield, 419; Mr. Gibson's success at, Chelmsford, Brixton, Northampton, Gravesend, Sheffield, 432; Yeovil, Manchester, 486; Cambridge, Wimbledon, Ascot, 487; Birmingham, 283; Bristol, Hull, 489; Chesterfield, Basingstoke, 490; Loughborough, York, 509; South Shields, Newport, 510; Dunfermline, 536  
 Cinerarias, culture, 61; planted out, 238  
 Cistern for water, 24  
 Clematises for arbours, 112; C. Flammula, 192, 219
- Clerodendrons fallax and B. fourianum, culture, 293  
 Cliveden, 172  
 Coal ashes for earth closets, 297  
 Codonopsis, 14  
 Colours from plants, 10  
 Conifers, specimen, 143  
 Corns, cure for, 293; and Celandine, 241  
 Corrosive sublimate for destroying slugs, 333  
 Covent Garden Market, extension of, 149  
 Cowslips, raising American from seed, 20  
 Craig-y-Nos Castle, 193  
 Crassula lactea, 537  
 Crowder, death of Mr., 94  
 Crystal Palace Show, 242, 335  
 Queenmers—renovating, 109; for winter, 130; Royal Windsor, 136; foreign, 178; diseased, 181; Purley Park Hero, 201; failing, 295; root disease, 341; treatment of, 332; winter culture of, 589  
 Cupressus Lawsoniana Fletch, 442  
 Current topics, thoughts on, 139  
 183, 457, 524, 571  
 Cuttings, striking, 69; striking in water, 39  
 Cyananthus lobatus, 120, 199  
 Cyanophyllum magnificum, propagating, 223  
 Cyclamens, culture, 83; potting, 85; at Reading, 539; raising, 582, 541  
 Cypripediums—C. Curtisii, 41; treatment of imported, 72; C. Veitchii, culture of, 113; C. cillolare, 215; C. Spicerianum, 233, 509; superbien, 247; C. Lawrenceanum, twin-flowered, 374; 426; C. insigne violaceum superbum, 535
- DAFFODIL SIR WATKIN, 165—James Dickson, 395  
 Dahlias—Mrs. Douglas, 214; Constance, 238, 263; "pot roots" of, 240; a good flower, 242; National Show of, 215; new varieties—Mrs. Langtry, General Gordon, and Rouse, 246; Falcen, Formosa, 249; show and fancy varieties at the National exhibition, 288; notes on, 304; single, 307; Glare of the Garden, 310; white Cactus, Mr. Tait, 329; influence of single, 332; 352; Cactus varieties, 376; Clematis-flowered, 394; culture, 400; growing for exhibition, 410  
 Datura Stramonium, 293  
 Decoration, styles in floral, 434  
 Delphiniums, good varieties, 107; Gloire de Nancy, 41; culture and varieties of, 83  
 Dendrobium—D. chrysanthum 145; shading and pruning, 209; D. Freydianum, 232 establishing imported, 289 culture of, 356, 570  
 Deutzias, forcing, 455  
 Dianthus Fischeri and alpinus 64  
 Dictamnus giganteus, 6  
 Diddington, 121, 163



Digging, spring v. autumn, 328  
Dinner-table decoration, 37, 370, 404  
Diss, Roses at, 50  
Dolichos scutipedalis, 10  
Dracena Goldiana, propagating, 106, 120  
Dropmore, 169  
Drosera, voracity of, 70  
Drummond Castle, 528  
Dryas octopetala, 212  
Dry weather, sowing and planting, 183  
Dukeries, through the, 79  
Dundee Show, 265

ECHINOCEREUS, 310  
Eastbourne Flower Show, 173  
Echinopsis, 311  
Echium italicum, 219  
Egyptian gardens, 195  
Epigea repens, 211  
Epidendrum vitellinum majus, 331  
Epiphyllums, culture of, 348, 382  
Eranthemum Cooperi, 456  
Erigeron aurantiacum, 190  
Erodiums, notes on hardy, 118  
Essex Field Club meeting, 329  
Eucalyptus at the Cape of Good Hope, 151; and exotic plants in the open air, 553  
Eucharis amazonica, culture, 382; for Christmas, 428  
Euphorbia jacquiniædora culture, 178  
Ewing, death of Mr., 50  
Exeter Nurseries, the, 579  
Exeter, Apple and Pear Show at, 416  
Exeter Show, 220  
Exhibitors, hints to, 64  
Exhibiting, advantages of, 112  
Exhibitions, amateur and cottager, 385

FARMER'S GARDEN, A, 354  
Farm—Long-horned cattle, 21, 45; hay-making, 61, 110; hints on sheep management, 134, 182; management of sheep in summer, 157; ensilage, harvest in America, 110 reports, 158; land tillage after harvest, 206, 229, 253; Jameson's manure, cost and value of Wheat crop, 230; drainage table; hop-picking, 276; Michalmas, ways and means, 297, 319; stubble Turnips, 298; report of seed harvest, 320; literature for emigrants, 342; seed corn, Maize for a green crop, 364; Winter Oats, 385; Wheat for cattle, 386; root crops, 403; geese, fattening, 403; seasonable hints, animals, 429; live stock, 451; Comfrey, Prickly, 452; important little matters, 473; preparing permanent pasture, 474; hedges, 495; fencing, 496; Fences, gates, roads, 517; Prickly Comfrey, analysis of, 518; ringdoves and small birds in a cage, 518; buildings, 539; implements, 540; American farms, 540; pig management, 561, 583; Lincolnshire sheep, 562; Birmingham Agricultural Society, 534; Christmas poultry, 584

Fendler, Mr. Augustus, death of, 143  
Ferns—history and culture of Filmy, 47; for baskets, 240; longevity of spores, 241; for cutting, 379  
Fernfield Orchids, 507  
Ferrières, 359  
Fertilisers for fruits, 219  
Ficarias, 15  
Figs—in pots, 43; culture of, 82, 203, 316; forcing, 153, 536; management of, 180; pruning in pots, 272; planted out, 382  
Filberts, storing, 275  
Firing, 475  
Floral Ceremonies, 576  
Florists' flowers, notes on, 378  
"Florist and Pomologist," last number of, 523  
Flowers in autumn, 238; for vases, 277; forcing, 301; autumn, 303; notes on, 308; in borders, 438  
Flower garden, work in, 83, 295  
Flower gardening, taste in, 163, 331, 355, 376  
Flower pots—Crute's concave, 261; concave, 417, 379  
Folkstone Hotel winter garden, 141  
Forest—areas of, 439; Danish, 554; destruction of, 554; culture, 199  
Forestry, International Exhibition, 28, 68, 97; awards for essays, 532  
Fornier, death of M., 215  
Frettingham, death of Mr. H., 509  
Frome Flower Show, 152  
Frost in July, 94

Fruit—and plants, sweet principle of, 148; exhibiting, 205; number of varieties, 214; trade in New Orleans, 241; "small" and judging, 253;

FRUIT—continued.  
weight of, 234, 354; hardy, 392; gathering, 315; garden, 360; forcing, 360, 470, 513, 558; and Vegetable Society at South Kensington, 399; selection of hardy, 404; propagation of small, 520; in 1884, 543  
Fruit trees—summer-pruning, 82; effects of hot weather on, 191, 234, 261, 289, 305, 324, 347; autumn pruning, 225; wood and blossoms, 264; root-pruning, 271; in pots, 282; autumn thinning, 300; cause of barrenness, 324; lifting and root-pruning, 412; dressing, 428; planting, 443; notes on, 461; planting bushes, 491; syringing trees, 494; painting, 516; dressing in winter, 546; moss on, 561; scale on, 561; drainage for, 567  
Fruit rooms and management of, 229, 291  
Fuchsia fulgens as a standard, 377  
Fumigating, 543  
Fungus—growth of, 166; and diseases of plants, 222, 313, 436; foray at St. Albans, 395; remedies, 437; in soil, 516

GALVANISED WIRE, 205  
Gardeners—tormentors, 203; Mr. Soper's address to, 431; advice to young head, 565  
Gardeners' Royal Benevolent Institution—69, 192, 458, 469; Anniversary, 23; augmentation fund, 94; Chrysanthemum Show for the, 512  
"Gardening World, The," 394  
Gardenias—repotting and culture, 106; and Eucharises, culture, 205, 581; propagating, 272  
Gastrolobium calycinum, 395  
Gentiana bavarica, 137; Kurroo, 278  
Geraniums—67; G. Traversii, 93  
Genm coccineum plenum, 27  
Gesneras, culture, 179  
Gilia Brandegei, 235  
Gladioli—G. Colvilli alba, 203; good varieties of, 215; fine varieties of, 240; Wm. Kelway, Sir Francis Bolton, 249; J. C. Brotherson, 283; notes on, 388; G. gandavensis hybrids, 523; at Fontainebleau, 532  
Gloxinias, 581  
Gooseberry pruning, 9; fungus on, 33  
Grapes—thinning and tying bunches, 8; cracking, shanking, 44; Ward's patent trough for, 66; colouring, 75; Dr. Hogg, 85; packing, 109; Muscat Trovoren 114, 146, 156; keeping zinc boxes, 121; the Strawberry, 128; Trovoren Frontignan, 166; mildewed, 181; Mudresfield Court, 192; an early white, 205; keeping, 229; certificated, 274; notes on late, 372; notes on varieties, 387, 403; at Castle Coch, 394; Muscat of Alexandria, 403; rusting, 428; white varieties, 455; Mrs. Pince's Black Muscat, 459; estimate of varieties, 461; Waltham Cross, Dr. Hogg, and Golden Queen, 462; culture of Muscats, 476; Gros Maroc, 480; Mrs. Pince, 483; chemical properties of, 494; notes on Gros Maroc, 499; Mrs. Pince, 522; keeping Gros Colman, 525; Muscat Hamburg, 527, 544; Muscats in cold house, 531

Greenland vegetables, 90  
Greenhouses and the Building Act, 329  
Grevillea robusta, culture of, 131  
Ground nuts, 582  
Guavas, 525  
Gum disease in plants, 41  
Gunnera manicata, 215

HALLAMSHIRE HORTICULTURAL SOCIETY, 193  
Hansworth Show, 225  
Hamwood, notes on, 325  
Hammersmith Gardeners' Society, 550  
Hardy fruit garden, 139  
Health Exhibition, Evening Fête, 95  
Heath, golden wedding of Mr. and Mrs., 241  
Heating, cheap method of, 359  
Hedges, Myrobalan, 533  
Heleniums, 222  
Helianthus cucumerifolius, 325  
Herbaceous border in June, 25  
Herbaceous plants in June and July, 190; 578  
Herbs, history of, 533  
Hogg, presentation to Dr., 329  
Holly, folk lore of, 576  
Honeydew, cause of, 66  
Honeyman, fund for Mrs., 49  
Hooper Taylor, presentation to Mr., 240  
Hops, receipt for wash for, 109  
Horticultural outing, at, 141

Horticultural Club, 373, 460  
Horticultural (Royal) Society's Committee Meetings, 49, 150, 209, 249, 353, 440, 531; Fruit Shows, 81, 200, 291, 358; Vegetable Show, 89  
Hot weather and salt, watering, shading, 23  
Hull Chrysanthemum Society, 234  
Hyacinths, Roman, 131  
Hyacinthus candicans, 283  
Hyde Park, 377  
Hydrangeas, 133; culture in pots, 154; fine, 240; H. quercifolia, 235  
Hydraulic rams, 213

IMPATIENS SULTANI, 332  
India, tropical products of South, 121; circular of gardening for, 142  
Indian garden, an, 143  
Indigofera floribunda alba, 41; I. Gerardiana, 531  
Ingestrie, notes from, 447  
Insects—enemies of the Pear, 123; enemies of Beet and Mangold, 314; destroying, 497  
Ipomæa Thompsoni, 442  
Iris Kämpferi Mary Anderson, Princess Maud, and Earl Granville, 41; I. Iberica, 199  
Ivy on trees injurious, 103  
Ixoras, propagation and culture of, 106; I. Morsei, 286

JAMESIA AMERICANA, 35  
Jefferies' nurseries, 271  
Judd, death of Mr., 526  
Judging, curious, 236  
Jussiaea grandiflora, 371

KEROSENE AS AN INSECT killer, 394  
Kew Gardens, 262  
Kitchen Garden—59; close cropping in, 135; work in, 153, 202, 233, 425, 479, 513, 558; notes, 355  
Kniphofia grandis, 192  
Koolayua, flower gardening at, 177

LABELS, INK FOR LABELS, 583  
Lachenalias, culture of, 233  
Ladies, establishment of Mr., 239  
Laelias, notes on, 481; L. Dayana, 509  
Land, trenching, 572  
Lapagerias—at Sheffield, 328; at Workshop Manor, 357; L. rosea and alba, fine specimens, 569  
Lathyrus Drummondii, 6  
Lawn, top-dressing, 335  
Lawn-tennis ground, moss on, 532  
Leaves, preserving colours of, 451; skeletonising, 551  
Leeds Show, 12  
Leek Rose Society, 462, 483  
Lemons in the open air, 214  
Leonotis Leonurus, 358, 374  
Lettuce—and Endive, history of, 243; Little Queen, 252; stewed, 305  
Lewisia rediviva, 64  
Libonias, 492  
Lilacs, forcing, 495  
Lilies—at South Kensington, 116; planting, 502  
Liliums—L. Browni, 61; L. Harrisii, 163, 241; at exhibitions, 193; successful culture of L. auratum, 249; large bulbs of L. auratum, 329  
Lily of the Valley, home-grown for forcing, 321, 419  
Lime and chalk, 233; properties of, testing soil for, 244  
Liquid manure in summer and winter, 411; applying, 435  
Lithospermum prostratum, 211  
Liverpool Show, 12, 503  
Loam, 500

Lobellias—L. Tupa, 512; notes on tall, 535  
London parks—Victoria, 218; Finsbury and Regent's 339  
Lychnis vespertina fl.-pl., 6  
Lythrum Graefleri in pots, 142

MAIDENHEAD SHOW, 167  
Maidstone, Old Nurseries at, 371  
Manganese in plants, 142  
Mangles, death of Mr., 214  
Mangold, insect enemies of, 314  
Manures—75; liquid, 303, 389, 401, 502; use of liquid, 4; applying liquid, 43; liquid in winter, 319; Professor Caldwell's paper on, 32; nitrogenous, 176; for Mushroom, 532  
Marigolds—Hen-and-chicken, 119, 142, 166; single French, 357  
Marston House, Frome, 512  
Marvel of Peru, 167

Master and servant, 210  
Maxillaria picta, 331  
Mealy bug, extirpating, 428  
Meconopsis nepalensis, 539  
Medinilla Teyssmanniana, 41  
Melons—judging, 4, 43; canker-ing and cure for, 6; stopping, 20; pruning, 44; preventing canker, 59; Burghley Pet, 51; plants decaying, 70, 118, 141; culture of, 130; new, 167; forcing, 178; pit, heating, 204; bitter, 252; heavy crop of, 356  
Meteorology, 520  
Meteorological observations—at Hodsock Priory, 143; in August and November, 329  
Metropolitan parks and gardens, 570  
Mignonette, culture as standards, 131  
Milla biflora, 307  
Mildew—sulphur and lime preparation for, 297; cause of, 417, 435, 456, 503  
Miltonia Moreliana atro-rubens, 438  
Mistletoe, folk-lore of, 576  
Moles, banishing, 203  
Moss—litter as manure, 252; on lawn, 363  
Mountain mahogany, 570  
Mulching with tan, 7, 10  
Mushrooms—fungi replacing, 95; bed outdoors, 132; failing, 205, 274; culture of outdoors, prolonging bearing, 252; temperature for beds, 341; culture in sheds, 454  
Mustard and Cress for market, 477  
Myosotis alpestris, 137  
Myrsiphyllum asparagoides, 377

NARCISSUS HORSEFIELDI, 253; N. bicolor Horsefieldi, 322  
National Auricula and Carnation Societies, meeting of, 350  
Nectarines shrivelling, 45; leaves skeletonised, 35; border for, varieties, 105; late, 139; out of doors, 178; culture, 202; forcing, 316, 492, 580  
Neil prize, the, 283  
Nelumbium speciosum, 113  
Nepenthes, culture of, 117; at Sheffield, 394  
Nephrolepis Bausei, 249  
Nerine filifolia, 373  
Newstead Abbey, 191  
Nicotiana affinis, 49  
Nierembergia rivularis, 211  
Nitrogenous matter in the soil, 557, 580  
Nottingham Horticultural Society's meeting and prizes, 16, 465  
Notts, notes, 308  
Notts Horticultural and Botanical Society's Meeting, 39, 559  
Nuphar advena, 232  
Nymphæas—N. gigantea, 113; rose-coloured, 374

OAKS AT THE CAPE, 129  
Odontoglossums—O. Alexandræ at Fernfield, 507; O. Alexandræ flavocolor, 535; O. grande, 583  
Oleanders, uses of, 193  
Oliver, gold medal to Professor, 431  
Omphalodes Lucillæ, 25  
Oncidium—O. flexuosum, O. lanceanum, 145; O. ornithorhynchum, 162; O. verrucosum, 232; O. Papilio, 275; O. incurvum album, 412  
Onions—fungus, 103; 133; autumn-sown, 144, 162, 235; insect enemies of, 174; judging, 214; early sowing in autumn, 216; a Lancashire show of, 332; large, 345  
Onosma taurica, 6, 24  
Opuntias, 423  
Orchard houses, 344, 399; an amateur's experience, 334  
Orchids—notes on, 8, 232, 509; care in culture, 441  
Krameri, 98; house for and Ferns, 181; the Dunlop House collection, 303; seed-sow in, 363; in the open air, 308; at Sheffield, 493; insects on, 494; resting, 516; essay on, 533; shading, 571  
Osiers, 384  
Ourisia coccinea, 89  
Overcrowding, 111  
Oxalises, 44

PALM, THE CABBAGE, 87  
Pancratium, culture, 581  
Paraguay Tea, 122  
Parks and gardens of London and Paris, 417, 511  
Parochetus communis, 497  
Parsley, 499  
Parson's garden, 2;  
Passifloras and culture, 229; P. edulis, 334  
Paterson, proposed testimonial to Dr. A., 374

Peaches—management under glass, 43, 426; large, 59; border for, varieties for succession, 105; late, 130; out of doors, 178; culture of, 292; forcing, 316, 530, 492; trellis for house, 407  
Peach trees, summer treatment of, 114; lifting, 164, 210; autumn-lifted, 377  
Pears—insect enemies of, 7; Beurrd'Amanlis, 153; history of the Seckle, 229; value of cordons, 322, 458; for September, 351  
Peas—House's Perfect Marrow, 69; mildew on, 85, 113; Wordsley Wonder, 94; Ne Plus Ultra, 279; Sturdy, 351; in 1884, 388; notes on, 519  
Pelargonium—propagating, 20; Ivy-leaved in pots, 91; wintering, 339; Zonal, 382; Le Cygne, 412, 481; culture of, 471; Queen of the Belgians, 431; fancy, 516  
Pentstemons, 159; notes on species, 34  
Pereskias, species of, 423  
Phaius grandifolius, 83, 423  
Phœnix dactylifera, 390  
Phyllocactus, 311  
Phytolacca comosum, 184  
Picea Pinsapo stem bleeding, 472  
Pilocereus, 319  
Pine Apples—culture, 61, 82, 207; large imported, 94; Charlotte Rothschild, 283; softsoap for, 288; culture in Brazil, 374; winter treatment of, 448  
Pine, the Stone, 193  
Pinks, white for forcing, 283, 302  
Pit, cheap plant and cucumber, 304

PLANTS CERTIFICATED—  
Aerides Houletii, 81; illustre, 49; Lawrenceæ, 249. Anaryllis Mrs. W. Lec, 249. Amasonia panicata, 249. Begonias—erecta superba, 245; Felix Crousse, 360; Goliath, 246; King of Kings, 360; Madame Crousse, 249; Madame Emile Galle, 246; Octavie, 249; Queen of the Bedders, 242; Ruhm Von Erfurt, 81; Souvenir de W. Saunders, 292. Besleria elegans, 292. Calanthe Sandhurstiana, 535. Caraguata angustifolia, 442. Carnations—Celia, 41; Grand Monarch, 535; Martha, 41. Cattleyas—batosa grandiflora, 535; calumnata, 41; Gaskelliana, 41, 81; trophthalma, 441. Chrysanthemums—Anais, 442; Beauté des Jardins, 417; Criterion, Callingtonford, 442; Fernand Feral, 417; Golden Madame Desgranges, 530, 417; La Bien Aimée; La Pureté, Lord Wolseley, Madame Cabrol, Madame de sevin, Mr. Robinson, Mrs. Gladstone, Nellie Rainford, 417. Roseum Pictum, 412; Sœur Dorothee Souille, Souvenir du Japon, 417; Star of Whyke, 442; Val d'Andorre, 446; White Perfection, 417. Clematis coccinea, 81. Coleus Countess of Derby, 159. Cupressus Lawsoniana Flecti, 442. Cyrtanthus lutescens, 350. Dahlias—Falcon, Zormosa, 249; Frau Emil Heinicke, 350; General Gordon, 241, 249; La Petite Barbier, 359; Mrs. Douglas, 242; Mrs. Langtry, 246; Romeo, 246. Desphanium Gloire de Nancy, 41. Deudrobrum—Griffithianum, 81; Phalaenopsis, 350. Dipladenia Elliotti, 202. Gladioluses—hybridus Lafayette, 81; Lady Carrington, 150; Wm. Kelway, Sir Francis Bolton, 249; St. Gatien, 202. Indigofera floribunda alba, 41. Ipomæa Thomsoni, 442. Iris Kämpferi Earl Granville, Mary Anderson, Princess Maud, 41. Ixora Westi, 150. Lapageria rosea superba, 359. Lathyrus latifolius delicatus, 81. Medinilla Teyssmanniana, 41. Montbretia elegans, 150. Nephrolepis Bausei, 249. Odontoglossum Alexandræ flavocolor, 535. Oncidium incurvum album, 412. Pelargonium—Le Cygne, 81; Madame Thibaut, 442. Prunus Pissardi, 81. Roses—Lucida Rose Button, Madame Eugene Verdier, 81. Sarracenia Wrigleyana, 330. Senecio pulcher, 412. Spiræa purpurea, 41. Tigridia Pavonia alba, 150. Viburnum Tinus aureo-marginatum, 442

Plants—choice Alpine, 24; herbaceous in June, 24; flowering, for the stove, 133; watering, 145; propagating, 173; effects of drought on, 241; notes on winter-flowering, 257, 258; for stove and greenhouse, 275; arranging, 453  
Plant houses—storing blinls, repotting in, 316; 514



Plums—cracking, 61; sporting, stocks for, 197; in pots, 265; Kelsey's Japan, 418  
 Poinciana regia, 284  
 Poinsettias—culture of, 1, 178; planted out, 338  
 Polygalas, 509  
 Pomological science, hints on, 194  
 Poppies, sowing perennial, 385  
 Potatoes—cooking in skins, 10; lifting and storing, 87; transmission of fungus, 9; seed, 116; crops of the world, 143; test for a good, 166; certified, 176; Carter's Lilliputian, 262, 288; for the garden, 280; result of Chiswick trials, 321; Mr. W. G. Smith's paper on "politics" of fungus of, 323; International Show of, 337; English varieties of, 359; culture and disease, 370; in Jersey, 395; storing, 431; Lilliputian, 433; the Jensenian system of culture, experiments at Chiswick, 442; spotted, 481; enemies of, 483; the Darwin, 522; the "red spot" disease, 526  
 Press, writing for the, 160  
 Primroses, Himalayan, 122  
 Primulas, old plants, 156  
 Prince, accident to Mr., 417  
 Priory, The, Wellington, 34  
 Prunuses—P. Pissardi, 145; forcing, 495  
 Psamma arenaria, 415  
 Psidium pyrifera, 523

#### RAINFALL, LARGEST MONTHLY

89  
 Ramondia pyrenaica, 89  
 Ramplous, the, 181  
 Raspberries—autumn treatment of, 301; planting, 390; autumn-fruiting, 572  
 Reading Show, 188  
 Reading, specialities at, 172  
 Rhexia virginica, 499  
 Rhipsalis, species of, 333  
 Rhododendron Conqueror, 535  
 Rhus trees and cattle, 473; R. radicans, 373  
 Richardia albo-maculata, 373  
 Robinia hispida, 143  
 Rockeries, 503  
 Roden, death of Dr., 374  
 Rogiera gratissima, 451  
 Rondeletia speciosa culture, 275  
 Rosa rugosa, 379  
 Roses—manuring in summer, 2; National Society's Southern Show, 4; A. K. Williams, 7, 35, 66, 90, 116; anew climbing, 9; at Cheshunt, 11;

#### ROSES—continued.

staging, 14; layering, 20; picturesque, 24; for buttonholes, 31; the new and old varieties, 48; Foster's holder for, 49; results of pruning, 70; early and late pruning, large leaves, 114; the aftermath, 141; Madame Prosper Langier and Red Dragon, 142; culture in pots, 147; culture of, 154; striking cuttings, 181; notes on, 184, 256; review of in 1884, 231; liquid manure for, flower-bearing shoots for budding, 256; for autumn, 232; Hon. Edith Giffard, 262; comments on the season, 280, 285, 333, 344; Cramoie Superior, miniature and Austrian Briars, 283; useful Tea-scented, 301; pedigree, 395; Belle Lyonaise, 305; Teas as annuals, 322; the past season, yearlings or maidens, 325; Queen of Queens, 352; planting, 357; most frequently exhibited—Mr. Mawley's tables, 365; yearling, 372; catalogue of, 374; pronunciation of names 411; opinions of experts on gumming, 414; new varieties 430; enemies and friends of, 432; in National Society's Catalogue, 435; Bedford Belle and Gipsy, 438; gumming, 439, 432; lifting and planting, 433; culture, 471; analyses of, 475; enemies and friends of, 476; mildew on, 478, 554; pruning in autumn, 484; Tea varieties in pots, 517; cause of mildew on, 527; champion varieties, 531; National Society's annual meeting, 552; insect foes of the, 556; from cuttings, 543; legitimate manipulation 544; Hybrid Perpetuals in pots, 564  
 Rose shows—Crystal Palace, 33; Cardiff and Hitchin, 37; Sutton and Bath, 38; Brockham, 39; Salisbury, 54; Hereford, Oxford, 55; Farningham, 56; Wirral, 57; Manchester, 76; Leek, Louth, and Wicksworth 77; Darlington, 78  
 Rose Acacia, 146  
 Rouen, pomological meetings at, 235  
 Royal Caledonian Society's Show, 285

#### SACCOLABIUM BLUMI MAJUS,

162  
 Sagittaria montevidensis, 113  
 Salix rosmarinifolia, 193  
 Salvia gesneriflora, 484

Sandy Show, 216  
 Sarracenia flava in open ground, 95  
 Savoy, Gilbert's Universal, 483  
 Scale, destroying, 95; destroying on fruit trees, 538; on plants, 539  
 Scotland, notes in the west of, 413; in, 567  
 Seakale, forcing, 561; forcing, 583  
 Seaside trees and shrubs, 83  
 Sea-sand Grass, 415  
 Sea-weed decorations, 483  
 Seed-growing in Essex, 93  
 Senecio japonicus, 74; S. pulcher, 234, 412  
 Shading plants, 156; removing, 346  
 Shallots, Russia, 271  
 Shamrock, blue-flowered, 407  
 Shows—National Rose, 4; Leeds, 12; Reigate and Richmond, 14; Canterbury and West Kent, 16; Chiswick, Winchester, 29; Tunbridge Wells, 31; Hull, 32; Wimbledon, 33; Helensburgh (Roses), 104; Newcastle, 102; Sheffield, 100; St. Ives (Roses), 101  
 Shrewsbury Show, 197; proceeds of, 193  
 Shrubs, grouping, 161, 344, 498; grouping ornamental, 213; pruning, 174  
 Silene virginica, 137  
 Smith, death of Mrs. J., of Kew 193  
 Solanum jasminoides, 262; S. Maglia, 522  
 Soot water, 473  
 Southampton—Show, 127; fruit and vegetables at, 459  
 Special Societies and Mr. Dodwell, 12  
 Spikenard, 20  
 Spinach, Skirret, and Salsafy—history of, 71; New Zealand, 431  
 Spiraea japonica, 517  
 St. Bruno's Lily, 139  
 St. Petersburg, International Exhibition at, 187  
 Stamford Show, 248  
 Stanhopea eburnea, 93  
 Stevias, 436  
 Stocks, East Lothian, 91, 142, 162, 192  
 Straw mats, making, 411  
 Strawberries—early, 11; at Bath Show, 28; estimate of varieties, 42; and moles, 48; Helena Gloede, 58, 70; Hammonia, 69; notes on, 63, 90; potting, 88; right and wrong methods of planting, British Queen, 92, for forcing, 161, 178; in pots, 316; culture at Ardgowan, 415; for succession, 428  
 Stylidium, 95

Sulphur in vineries, 156  
 Sunshine measured, 189  
 Swanley, a day at, 334  
 Swanmore Park, 439  
 Sydney Botanic Gardens, glass structures in, 91

#### TABLE DECORATIONS FOR

Christmas Day, 553  
 Taunton Deane Show, 175, 200  
 Tavistock Cottage Garden Society, 192  
 Thoughts on current topics, 67, 93, 129, 299, 261, 281, 322, 391  
 Thalia occidentalis, propagating, 274  
 Tigridias—notes on, 220, 291; planting, 234, 263  
 Timber supplies, future, 143  
 Tinella cordifolia, 191  
 Tobacco—home culture of and preparing for fumigating, 2; Australian, 71; plants and wireworm, 482  
 Toll, death of Mr., 9  
 Tomatoes—in pots, notes on varieties, 116; in America, 166; certificated, 176; at Epsfield, 215; at the Health Exhibition, 212; and their uses, 278; the best-flavoured, 279; exhibiting, ripening in heat, 322; judging, 322, 352, 400, 438, 485, 569; a pest, 397; plants from autumn cuttings, 371  
 Trees—at the Cape, 103, 151; and shrubs, spoiling, 135; and shrubs for an island, 539  
 Trenching, 521  
 Trichinium Manglesii culture, 423  
 Tritoma Uvaria in pots, 167  
 Tropaeolum polyphyllum, 74  
 Tuberoses culture, 425  
 Tulips, hardy, 568  
 Tupa Feuillel, 512  
 Tydeas—Madame Heine, 179; culture of, 258

#### UTRICULARIA VULGARIS, 3, 97, 120

#### VALLOTA PURPUREA

culture, 236  
 Vegetation of Florida, 224  
 Vegetarian banquet, 356  
 Vegetables—history of Lettuce and Endive, 246; history of Radish and Horseradish, 429; in 1884, 253; assisting the growth of, 282; seasonable, 303; at Christmas, 554  
 Veronicas, 398

Viburnum Opulus, forcing, 405  
 Vines, bleeding, 3, 20; scorching, scalding, syringing, 24; washing, 26; culture, 59; soil for border, 61, 109; mildew on, 85; management of, 195, 226; overcropped, 132; after fruiting, 133; aerial roots on, 199, 261; mealy bug on, watering, 245; in France, 215; spoiling, 257; extending, 291; top-dressing, border, 335; forcing, 405; in autumn, 413; dressing, 451; pegging down, 459; compost for 480; concreting border, 494; shading v. red spider, 501; renovating, 516, 542; starting, 539; planting, 561; pruning, 539, 582

Vinery, Rivers' New Ground, 465  
 Violas for bedding, 299, 313  
 Violets, Neapolitan, 300  
 Vitex Negundo v. incisa, 233  
 Voetcker, death of Dr., 526

#### WAKEFIELD CARNATION AND

Picotée Show, 177; Paxton Society, 394  
 Walnuts, varieties of, 473  
 Wasps, a plague of, 192; excluding and trapping, 234; and red spider, 285  
 Waste land, improving, 192  
 Water—maggots in, 85; for plants, 501  
 Watering plants, 90; in dry weather, 164  
 Water Lilies at Kew, 112  
 Wath Show, 225  
 Watsonias, 194  
 Weather, hot, 23; records of in Notts, 28, 439, 526; examples of mildness of, 469  
 Webb & Co.'s seed farms, 217  
 Weeds, destroying, 297  
 Wellingtonias in Scotland 390  
 Weston-super-Mare Show, 196  
 Wickham Court, 242  
 Winter Greens blind, 120  
 Wirksworth Horticultural Society, 183  
 Woodlice in Mushroom bed, 296  
 Worcester Show, 193

#### YEW HEDGES, FINE, CUTTING,

242; poisoning by berries, 394

#### ZAUSCHNERIA CALIFORNICA,

279  
 Zygopetalum Mackayi, 331

## WOODCUTS.

	PAGE		PAGE		PAGE
Abercainny .. .. .	572	Echium italicum .. .. .	219	Orchids in the Open Air .. .. .	397
Aerides Fieldingi .. .. .	259	Eranthemum Cooperi .. .. .	457	Parochætus communis .. .. .	407
Agave geminiflora .. .. .	555	Fencing for Fields .. .. .	496	Pear Chermes.. .. .	8
Allium pedemontanum .. .. .	91	Flower Pot, Crute's Concave .. .. .	261	Phoenix dactylifera .. .. .	391
Anthericum Liliastrium .. .. .	199	Fruit Room, a Good .. .. .	291	Phyllocactus Ackermanni .. .. .	312
Apple Lord Grosvenor .. .. .	274	Gastrolobium calycinum .. .. .	395	Phyteuma comosum.. .. .	185
Araucaria at Dropmore .. .. .	171	Geum coccineum plenum .. .. .	27	Plum, Coc's Golden Drop .. .. .	265
„ cones of .. .. .	170	Gilia Brandegei .. .. .	235	„ Kelscy's Japanese .. .. .	419
Arnebia echinoides .. .. .	191	Gooseberry Fungus .. .. .	40	Primula sikkimensis .. .. .	1:3
Bee House, Plan of .. .. .	296	Grapes, Ward's Troughs for .. .. .	66	Psamma arenaria .. .. .	415
Begonia Carrierei .. .. .	331	Helenium pumilum.. .. .	223	Psidium pyrifera .. .. .	525
„ Distinction .. .. .	98	Helianthus cucumerifolius.. .. .	325	Rhexia virginica .. .. .	499
Begonias, Group of Tuberous .. .. .	99	Hives, Entrances to .. .. .	427	Rhipsalises .. .. .	333
Boiler, Fawkes' Slow-combustion.. .. .	424	Insects—Anthomyia ceparum .. .. .	174	Robinia hispida .. .. .	147
Bomarea acutifolia .. .. .	578	„ Biston hirtaria .. .. .	123	Rogiera gratissima .. .. .	451
Bonaparteia juncea .. .. .	555	„ Psylla Pyri .. .. .	8	Rose Queen of Queens .. .. .	353
Bravoa geminiflora .. .. .	152	„ Tortrix angustiorana .. .. .	126	Rose Holder, Foster's Patent .. .. .	49
Brussels Botanic Gardens .. .. .	74	Indigofera Gerardiana .. .. .	531	Rose Leaf, a Large .. .. .	115
Campanula fragilis .. .. .	279	Ixora Morsei .. .. .	287	Rose Support .. .. .	14
Carpet Bed, Designs .. .. .	163, 378	Jamesia americana .. .. .	35	Salvia gesneriæflora.. .. .	485
Cattleya Sanderiana.. .. .	53, 57	Jussiaea grandiflora .. .. .	371	Sca Sand Grass .. .. .	415
Chrysanthemums, Early .. .. .	347	Leonotis Leonurus .. .. .	375	Straw Mats for Shelter .. .. .	411
„ Fabia de Maderauaz .. .. .	463	Lithospermum prostratum .. .. .	211	Tree Ligature, Bennett's .. .. .	71
„ Jeanne d'Arc .. .. .	441	Marigold, Hen-and-Chickens .. .. .	119	Tupa Feuillei .. .. .	512
„ Mr. Orchard's Group .. .. .	521	Marigolds, Single French .. .. .	357	Turf, Cutting.. .. .	582
Crassula lactea .. .. .	567	Mildew, Rose .. .. .	478	Utricularia vulgaris.. .. .	3
Cucumber and Plant Pit .. .. .	304	Myristica aromatica.. .. .	543	Veronica longifolia subsessilis .. .. .	309
Cypripedium superbiens .. .. .	247	Odontoglossum Alexandræ, Dr. Paterson's .. .. .	507	Vinery, Rivers' New Ground .. .. .	465
Dahlia, a Typical .. .. .	243	Onion Fly and Grab .. .. .	174	Vines, Pegging down .. .. .	470
Dolichos sesquipedalis .. .. .	11	Opuntia Salmiana .. .. .	423	Watsonia coccinea.. .. .	191
Drummond Castle, Flower Garden at .. .. .	529				





3	TH	Winchester, Bury St. Edmunds, Bath, and Chiswick Shows.
4	F	Sutton (Roses).
5	S	Crystal Palace (Roses).
6	SUN	4TH SUNDAY AFTER TRINITY.
7	M	Brockham (Roses).
8	TU	Royal Horticultural Society's Fruit and Floral Committees at 11 A.M.
9	W	Edinburgh Show (two days); Salisbury (Roses); Lee (two days).

### CULTURE OF POINSETTIA PULCHERRIMA.

**T**HIS plant is too well known to need any eulogistic comments, and I will merely content myself with the introductory remark to the effect that I consider Poinsettias rank amongst the most showy and serviceable winter decorative plants we have. They are by no means difficult to cultivate, yet they are not generally seen in the best possible condition. This may be to a certain extent the fault of the cultivator, but more often it is owing to their being unavoidably crowded amongst heat-loving plants from the time they are housed for the winter. Ours usually share a house with flowering Begonias, this house being previously devoted to Cucumbers, and my fairly successful culture I propose to give in detail.

The youngest of the old plants are always carefully rested on a stage in a Rose house, and there they remain for a long time fresh and plump without any water. They also keep their principal roots alive, and altogether, if a trifle unsightly, invariably give much better results than do plants that have been either stored in a dry warm potting shed or under the staging of a greenhouse. In the latter position especially they are apt to start prematurely, the growths being correspondingly weak. Some time during March these stored plants are cut down to about six eyes, but are not watered or induced to break; on the contrary, our aim is to retard them as much as possible. About the middle of May, and sometimes later still, they give signs of breaking, and then they receive a thorough soaking of tepid water. At the present time (June 17th) they have each pushed several shoots about half an inch in length, and, the roots becoming active, all the plants have much of the soil carefully removed from their roots and placed into pots of the same size or a size larger, according to their vigour. They are then stood in a warm light pit, and very lightly shaded for a few days. The upper two or three shoots soon become large enough to be made into cuttings, say about 3 inches in length, and these are then taken off with a heel or part of the old wood attached. If the lower eyes on the old plants have not already started, removing the cuttings will induce them to do so, and I always endeavour to have three shoots on each old plant, keeping these steadily growing till the young plants can be placed with them.

Although I prefer to have short cuttings with a heel attached, the latter is not absolutely necessary to insure rooting. If allowed to grow much above 3 inches in length I should shorten them to a joint, trimming off the lower leaves, and if not hollow such cuttings will root readily. To prevent bleeding, and therefore the loss of what goes to form the callus, it is advisable to dip the base of the cuttings directly they are made into dry silver sand. Cuttings may be rooted round the sides of well-drained 5-inch pots, or a 3-inch pot may be inverted on the drainage in the centre of a 5-inch pot, so as to bring the bottom on a level with the rim of the pot enclosing it, and the cuttings be then inserted in the soil placed in the open space. The cuttings root more

quickly and are more safely potted when the latter method is adopted; but it is a still better plan to insert the cuttings singly in 2½-inch pots, and in these they will strike in about three weeks and no check be experienced in potting off. The compost recommended for the cuttings is two parts of fine loam, one of leaf soil, and one of silver sand. The cuttings should rest on a little sand, be firmly fixed, and placed either in a propagating frame, handlights, or under bellglasses, and will be all the better for a little bottom heat. They should not be crowded, and require to be shaded from bright sunshine, kept close and uniformly moist. If inclined to damp off, the glasses should be wiped dry every morning, or a little air be given for a time.

Directly they are rooted they must be transferred to a shelf as close to the glass as possible, shaded at first, and gradually exposed to more light and air. Those struck several together should be potted in about a week, giving a size of pot according to the strength of plants and roots, or varying from 2½-inch to 4-inch pots, using a rich and rather loamy compost, giving another shift later on. Those rooted singly in small pots require to be shifted into larger pots before they become rootbound. The strongest are given 5-inch and 6-inch pots, and the remainder 4½-inch pots; and as no other shift is given the compost is made rather rich, or similar to what has been given to the old plants. This consists of three parts of good turfy loam to one of well-decayed cow manure or old hotbed manure, adding a 6-inch potful of crushed bones to about 2 bushels of soil, and sufficient sand to keep the whole porous. The pots are carefully but not heavily drained; the soil is used as roughly as the shift will allow, and is not rammed very hard.

As it is necessary to keep both old and young plants rather close and warm until well established in the fresh soil, every care must be taken to have them as near the glass as possible, and only lightly shaded in order to prevent them becoming drawn. If the pits or frames are deep, or the shelves are at a considerable distance from the glass, it is advisable to elevate the plants on inverted pots, as so much depends upon maintaining sturdiness. When all are well rooted the old and young plants are placed in a sunny and rather shallow brick pit, and there they are stood on a hard bottom, are lightly shaded from bright sunshine, and receive abundance of air both night and day. An ordinary garden frame would answer equally as well. They are never allowed to suffer from insufficient supplies of water, and in order to preserve the lower leaves and maintain a healthy appearance liquid manure is given the plants twice and three times a week. No strong doses are administered, but the soot water and farmyard liquid manure are freely diluted. I have tried the plan of planting out on a sunny border, but they do not succeed well on our cold soil; and we find plants which have been grown in the open air in pots, although sturdy enough lose their lower leaves when transferred to heat in the autumn. For my part I prefer a tall plant, say 3 feet high, with perfect foliage to one half that height and badly clothed.

By the end of September all the plants are removed to the house above mentioned, where they are grouped thinly rather near to the glass, a dry atmosphere being maintained and plenty of air given on all favourable occasions. Towards the end of October when the heads are forming, and when there is less danger of the plants growing too fast, the heat and moisture are increased to what is maintained in the ordinary plant stoves. This, coupled with close attendance in watering and liberal ventilation, serves to fully develop the floral leaves.

It is surprising what fine heads can be grown on plants in comparatively small pots. Last season we had plenty of whorls on plants in 4½-inch pots which measured fully 9 inches across, and those in larger pots were proportionately larger. The old plants, the majority of which were in 7 and 8-inch pots and each perfected three fine whorls, we find the



most effective for massing; while the single-stemmed youngsters are the best for dotting among or mixing with groups of other plants. To transfer them when at their best to a cooler house under the impression that this prolongs their season is quite a wrong notion, as we find they last much longer and also retain their foliage much better if kept in the same house as grown in, provided the atmosphere is dry and a little ventilation is given when possible. If it is necessary to transfer them to cooler quarters more care should be taken with the watering than is often the case. In a cool house or in a dwelling house they require much less water than heretofore, or otherwise they quickly lose their leaves. Plants kept in a dry warm house will sometimes perfect seeds, and these, if sown in heat directly they are ripe, will germinate in about ten days; but the seedlings are apt to become taller than the plants raised from cuttings.

The Poinsettia is a noble plant for covering the back walls of plant stoves, and in these positions it affords a long succession of blooms, small heads being produced throughout the length of the stems after the principal head has been cut, the season lasting till late in April. Where a border is provided for climbers on the back walls a few Poinsettias may be planted. Any good loamy soil will suit them, and they will cause little further trouble in this respect for years, always supposing they receive some kind of fertiliser occasionally. Under this treatment they quickly furnish a wall, forming grand foliage, and also, if not unduly shaded, immense whorls of bracts. Some of the largest heads ever cut, measuring 24 inches in diameter, were grown in this manner. They have been trained to the roofs of houses, but are rather heavy for this position, and there are other serviceable climbers that may be thus grown without injuring Poinsettias and other plants either underneath or on the back walls.

It is not generally known that there are two varieties of Poinsettia pulcherrima besides the white and double forms. Both have scarlet bracts, but one is much brighter in colour than the other. The dullest-coloured is rather shorter-jointed and is the earliest by fully eighteen days. Possessing these two sorts gives us a decided advantage, as we are not under the necessity of dividing the stock into batches in order to retard the one and hasten the other, as may be advisable for others to do in October, when a succession is required. The white variety I care but little for, and neither this nor the double variety are often seen in a presentable condition. A group of the scarlet single sorts margined with well-flowered plants of Begonia semperflorens grandiflora is remarkably grand; while moderate-sized whorls of the former are strikingly effective for dinner-table decoration.—W. IGGULDEN.

#### THE HOME CULTURE OF TOBACCO FOR FUMIGATING.

I HAVE often felt somewhat surprised that growing Tobacco is so rarely adopted by gardeners, even where space and appliances could readily be found, and especially so when I consider the high prices which are charged for, and the very variable and often very inferior qualities of tobacco paper sold, the use of which is frequently the cause of much injury to valuable plants. I have for many years past made it a practice to grow annually from 100 to 200 plants, which with a very small quantity of tobacco paper to assist in combustion, serves me for the fumigation required in our greenhouses.

Our mode of fumigation is to use (according to the size of the house to be filled) one or more utensils made of sheet iron rivetted together, somewhat like a large saucepan, about 9 inches in diameter and 12 inches deep, the lower part perforated with holes half an inch in diameter, and with three short legs rivetted on to support it about 6 inches above the floor. A long iron handle is also rivetted on for convenience in carrying it about when in use. Into this we place 3 or 4 inches in depth of live coke, and upon this, in the first place, a few small pieces of tobacco paper, then next a handful or two of home-grown Tobacco, and again a few pieces of paper, repeating this until sufficient has been thus put together to well fill the house with smoke, and so dense that I am unable to discern plants through it that are

standing more than 3 feet away from me. I usually find one such fumigation as this effectual in destroying all aphides, and is not injurious to even tender plants, such as Cinerarias, providing their foliage be dry at the time.

The proportion of Tobacco I use is about two-thirds home-grown to one-third paper. Thus mixed I find them to possess several important advantages over the use of paper alone. First, it is necessarily much less costly, and apparently equally effective in the destruction of insect pests; secondly, it is much less injurious to the plants; and thirdly, it is much less offensive and unpleasant work for the operator, as it does not require that he should stay in the house until it is consumed, as it burns steadily without in any case breaking into a blaze, and also the smoke produced is much less nauseous.

The cultural details are very simple. About the end of April seed should be sown in a pan of a light sandy compost, and thinly covered, the pan to be placed in a warm house or frame near the glass. As soon as the plants are large enough to handle they should be pricked out in boxes, or under a spare light of a cold frame, kept safe from frost, and grown till the end of May, when they should be gradually hardened and planted out towards the middle of June. I plant on ground which has been dug and liberally manured the previous winter, forking it over, but not deep enough to bring up the manure, immediately before planting. The plants are put in with a trowel in rows 2 feet apart, and 18 inches apart in the rows.

After planting they require to be carefully watched, as slugs appear to be very fond of the young succulent leaves. After they commence growing freely, however, they are soon safe from these troublesome pests. All the further attention then required until they are ready for cutting is one or two hoeings to keep down weeds. I allow the plants to grow until the first blooms begin to expand, when I cut them off close above the ground and spread them thinly in the full sun on the edge of the garden walks, where they remain for one or two days, turning them once.

When sufficiently dry they are collected and piled in a heap under a covered shed with open sides. The heap is closely covered with mats, and is left thus covered for four or five days, during which a little fermentation takes place. The plants are next tied in bundles of six or eight each, and suspended head downwards under the roof of the shed, where they hang until dry and brown, which takes several weeks to accomplish. They are then taken down, the leaves stripped off the stalks, and the stalks chopped into lengths of 3 to 4 inches, when leaves and stalks are all packed tightly together in empty barrels such as Apples arrive in from America. The barrels are then stored in any convenient place where they are safe from damp, and the Tobacco can be taken out in small quantities as required.—W. K. W.

#### MANURING ROSES IN SUMMER.

ALL Rose bushes are benefited by an application of manure at this season. Where the buds have not yet opened copious supplies of liquid will cause them to develop to their fullest extent, and at the same time strong wood will be formed which will produce many fine blooms in autumn, and the plants will also be benefited for next season. When Roses are wanted to open and bloom freely now liquid alone will assist in this, but for the future benefit of the plants a good top-dressing of rich manure is better than anything.

Some people always like to see the surface of their Rose beds raked fine and smooth, but where blooms of the finest quality and in the greatest quantity are desired the requirements of the plants must be taken into consideration. In heavy rich soils top-dressings are not much wanted, but in poor light materials nothing great will ever be accomplished without plenty of rich surface dressings. A good layer of rich manure round the stem of each plant is always beneficial, especially in hot dry weather, and where the improvement of Rose bushes is desired we would urge the adoption of the plan at once. After putting on the manure it should be well watered to take the nourishment down to the roots, and this may be repeated when necessary; but besides being benefited by the manure in this way the mulching keeps the soil cool and moist, and these are conditions most agreeable to Roses in summer. Of liquid manures we prefer that made of cow or pig droppings given freely.—M.

#### UTRICULARIA VULGARIS.

THIS comparatively unknown water plant is attracting considerable attention on account of the recent discovery of young fish in the vesicles, bladders, or hollow bags with which the plant is so abundantly supplied. In addition to the interest that attaches to this plant as a destroyer of our feeble fresh-water fry, together with its accredited power of absorbing minute insects, it is by no means the least beautiful of our indigenous aquatics. To those who are in the least apprehensive that the



*Utricularia* may propagate itself as prodigiously as the \**Anacharis Alsinistrum*, better known as the American Water Weed, we may remark that such an eventuality may be regarded as exceedingly problematical. Nay, destructive as it has been represented to be by journalists who have risen to the occasion and attributed to its numerous membranaceous prettily reticulated bladders the character of a vegetable conspirator, as well as that of a criminal, it is no new importation, but, on the contrary, it can claim the respectability that belongs to antiquity. Doubtless it is in its own small way a fish-destroying agency, for that much at the present moment in respect to roach can be easily demonstrated; but bearing in mind the smallness of the most capacious bladders it is capable of developing, it cannot be destructive to any but the tiniest fish, and these we should not expect to find where the *Utricularia* is known to luxuriate. It may, however, contribute in some degree to keep down the number of the finny tribe, but it certainly does not appear able to establish itself in our streams to an extent that will deprive the angler of the riverside recreation he has hitherto enjoyed, nor need the latest discovery of its capabilities make its presence appalling to the fish themselves. For, as a matter of fact, this vegetable phenomenon signally displays its destructive attractiveness at a season when the young fish have become sufficiently strong, if entrapped, to escape the discomforts attending vesicular imprisonment. This is, indeed, fortunate for the fish, considering the many vicissitudes they have to endure in early

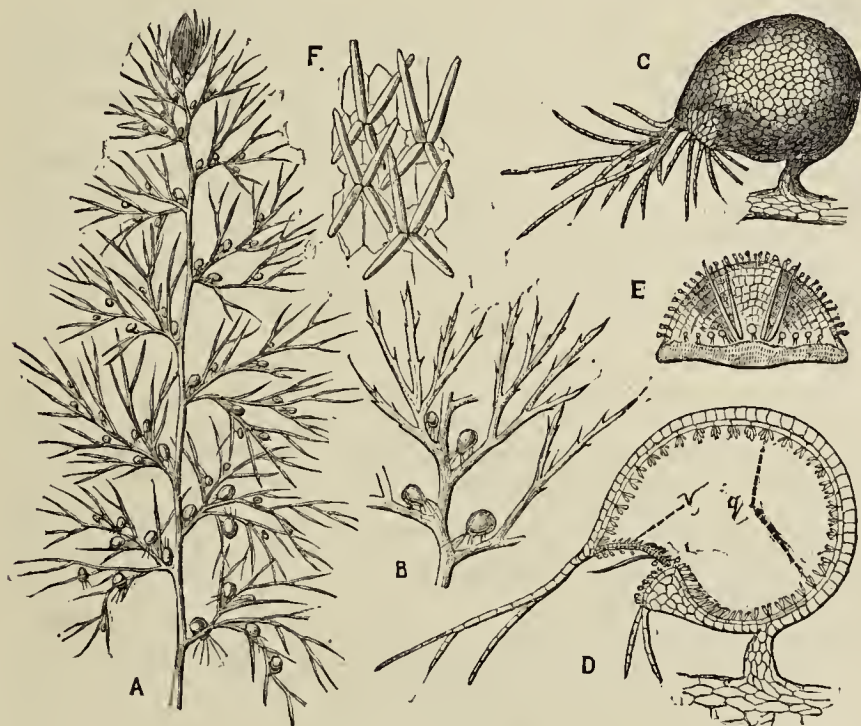


Fig. 1.

- A, *Utricularia vulgaris*, natural size.  
 B, (a bit) enlarged.  
 C, A bladder of *Utricularia* enlarged.  
 D, A section of bladder (near middle). v, valve; q, quadrifid processes.  
 E, Valve, much enlarged.  
 F, A bit of the inside of the bladder, showing the quadrifid processes.

life; the perilous bait of the angler, however, must occasion the exercise of their powers of discrimination considerably in their riper years.

It has been asserted in the columns of a daily contemporary that "the plant is denied blossoms by Nature;" but this, of course, is purely hypothetical, for were it not for the exhibition of its racemes of bright yellow red-streaked flowers in many instances it would escape detection. The finest specimens that we have seen were found a few days since, growing about 3 feet from the surface of the water, firmly rooted in a deep deposit of decomposed vegetable matter, the terminal shoots being within easy distance of the atmosphere, and the plant disposed to be erect in growth. When the shoots or portions of them become detached they naturally float horizontally in the water, and, clothed as they are with beautiful semi-transparent capillary branchlets bearing numerous little bladders in all their stages of growth and decay, they are wondrously interesting. After rising to the surface they become entangled with filmy and other floating weeds that may be present, and together drift to the margins, where they can be easily captured with the aid of a

walking-stick. It is not from the bank, however, that the botanist obtains the best view of its beauty, but from a more convenient distance—for instance, from a boat or punt. Under such circumstances, provided the water be perfectly clear, the *Utricularia* can be seen in its greatest perfection, and there is no prettier plant than this to be found in our ponds. Readers who are unacquainted with it will be able to readily identify it if they refer to Baxter's "British Flowering Plants," vol. v., fol. 349, where it will be found faithfully figured.

With respect to the bladders, we note that Hayne [Withering's Bot., 6 ed., vol. ii., p. 25], who has made observations of them, is of opinion that "the aperture is closed by a lid that only opens outwards;" but Mr. Wilson [Hooker's Brit. Flor., p. 9] observes that "they have an orifice closed by an elastic valve opening inwards." The correctness of the one or the other of these conflicting opinions may soon be determined. Each of the extended bladders contain a small "bubble of air" as well as a fluid, which becomes discoloured, and with the air-bubble gets partly discharged, thereby causing the bladder to assume a compressed form, somewhat resembling in outline the shape of an aphid. The slender fibres attached to the circular orifice, of which botanical works state there are three or four, are more numerous than have been represented, and are possibly sensitive, as their positions vary from a horizontal and spreading one to that of an erect and compressed position.

The plant will not thrive in aquaria unless the base of the stems be covered with washed sand or shingle, as if the sand or shingle be not washed, and thereby deprived of its floating particles, the bladders become receptacles of such particles, and then lose their attractiveness that makes them so interesting. Even then, if exposed to the rays of the sun, the water becomes heated to a degree that encourages a rapid growth, and the portions that under these circumstances are so quickly developed, as soon as they attain the length of 1½ or 2 inches more or less become detached from the parent plant and continue to grow in their separate state, while the parent plant gradually becomes decomposed. This has happened invariably where selected specimens were placed separately in several glass vessels with a view to observing their growth. But, on the other hand, a specimen that was placed in a cylindrical glass vessel containing shingle obtained from the riverside, in which the base of the stalks were inserted to a depth of about 2 inches, has not only retained its capillary branchlets, but made a considerable growth, which, unlike the other specimens, has not become detached, and at the present moment is an object of remarkable beauty, notwithstanding the vesicles being sparsely produced. It should be mentioned that in this particular case, during the whole of the time that it has been in the vessel, it has not been exposed to the rays of the sun, and it is doubtless in great measure owing to this fact that it has thriven so well.—S. P. E. S.

[As was recently stated in this Journal (page 426), Mr. G. E. Simms of 37, Broad Street, Oxford, has made several observations upon the carnivorous propensities of *Utricularia vulgaris*, especially in reference to its capture of spawn and young fishes, and we understand that he intends to publish the results of his investigations shortly. Mr. Darwin examined the vesicles of this plant some years ago, but was unable to determine that they possessed any power of digestion. It seems, however, from the condition of fishes found in them that some such process does take place, though, perhaps, in a less marked degree than with the *Dionæa* and *Drosera*.]

#### "THINKER'S" REMARKS.

As "Thinker" accuses me of being one of the causes of his inflicting his "thoughts" upon you this week, I may claim the privilege of repudiating the charge. Neither does my correction of his former inaccuracies constitute me "a man of war" or a breach of the "peace." "Thinker" was the assailant: not me; and I am surprised at his taking refuge in such an excuse. As to the other points he raises he must settle them with "A Kitchen Gardener." I am obliged to "Thinker" for his new fact of the dates of 1870-71. I can quite comprehend any intelligent reader of the gardening papers adopting the plan about that time, but most credit attaches to the anterior date, so far as "Thinker" is concerned. I cannot, of course, controvert your correspondent's claim to be the repository of Mr. Pearson's secrets not revealed in his practice or book, but I shall adhere to the latter till I have a better-vouched-for authority.—NON-BELIEVER.

VINES BLEEDING.—"Justitia" and "Non-Believer" say harsh things. Illustrations are called new statements, and so forth. I stated strong healthy Vines bleed because they are full of sap, and the roots working and imbibing too much moisture. I adhere to excess of water being the chief cause of bleeding, and the knife the blood-letting, showing where the evil is. I believe pruning is one of the best points in Grade

\* The *Anacharis Alsinistrum*, Bab., or *Elodea canadensis*, Rech., established and propagated itself so rapidly in our rivers and canals, that dense masses were discovered by Mr. Baxter measuring more than 100 yards from one end to the other in places where three or four years previously it was unknown in either a wild or cultivated state.



cultivation, and properly attended to your readers will see I do not condemn it. Some of your more temperate correspondents have given some good practical information on this subject, and this is more what readers want than suggestions of untruthfulness and indulgences in hair-splitting.—J. E. WAITING, *Grange-over-Sands*.

### LIQUID MANURE.

Now is the time to use this with advantage. There is no plant in the garden which it will not benefit if properly applied at the right time. All plants in active growth and with abundance of roots may have supplies with good results, but plants in pots should receive none while there are only a few roots in the soil. It should never be used to force young plants into growth, or to make sickly plants healthy, as in nine cases out of ten it will have the opposite to the desired effect. It can, however, be applied most favourably in the case of all plants bearing heavy crops of fruit or flowers, as then it assists to mature and develop what would for the want of nourishment be unsatisfactory. Our Peach trees in pots, for instance, had no liquid manure given them before or during the time they were in bloom, nor during the time the fruit was small and stoneless, as forcing then might have caused a collapse; but when the fruit began swelling freely liquid manure was given, and the fruits became much larger than they would have been without such assistance. Our Tomatoes are treated to the poorest of fare until fruit has formed freely, then liquid is given unstintingly. Pelargoniums in pots have only clear water while they are small and the pots not filled with roots, but when larger proportions are gained and feeders are plentiful liquid manure every alternate day or twice weekly produces a profusion of flowers long beyond their natural time of blooming. When large plants are wanted in very small pots, as they often are for room-decoration, it is a difficult matter to produce them, and liquid manure will make them larger and better than anything else which can be tried.

Pine Apple plants never receive liquid manure when they are only suckers or small successional plants, but immediately the fruit appears assistance is given with advantage. Cucumbers would be induced to make much superfluous growth if supplied with liquid from their earliest stages; but if this is withheld until a quantity of short-jointed wood has been formed, and many young fruits are visible, it will then be productive of a very heavy crop, many fine fruits, and a long succession of them.

Onions if freely supplied with liquid when they are only a few inches high, and before there are any signs of bulbs forming, will grow rapidly, but only soft leaves and thick necks will follow for a long time; but it is different altogether if no liquid is given until the bulbs are well formed. Then liquid manure will cause the bulbs to increase rapidly, and a good and early crop will be the result. This rule applies to every plant, and cultivators will benefit by paying regard to it.

As to the best kinds of liquids, this must depend to a great extent on the plants to be treated, and its strength should also be governed by this. Liquid produced from steeping cow, horse, or pig manure in water is always nourishing and not dangerous to use, as it is not so hot and burning as some of the artificial manures which are dissolved in water. Drainings from cattle houses or manure heaps are excellent, and of all artificials these are safer or more efficient than guano. I rarely use anything else, and there is one particular which must be rigidly observed, and that is never to give the liquid too strong. If this is done all benefit is lost, and injury or perhaps death follows. Giving any kind of liquid weak and often is much better than applying it strong at long intervals.—A KITCHEN GARDENER.

### JUDGING MELONS.

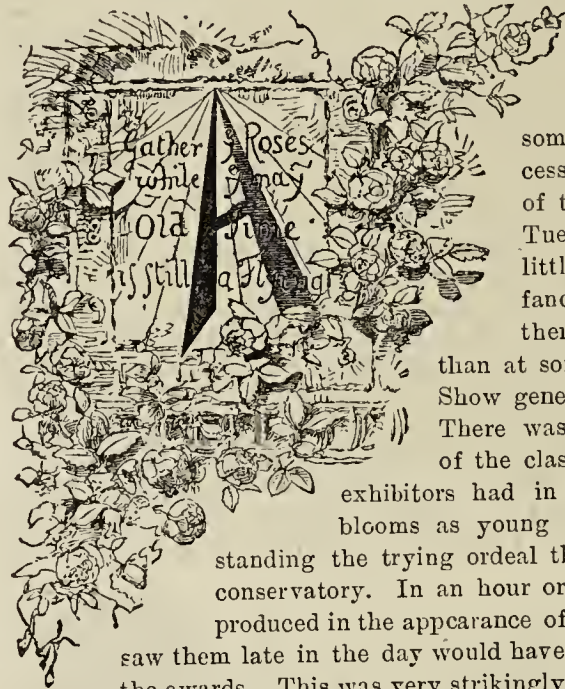
It will be seen on reference to the report on page 516 of the Fruit and Vegetable Show of the Royal Horticultural Society that there was a "new departure" in the method of judging Melons. For the first time, probably, in a similar competition none of the fruit were cut, the Judges being of opinion that they could select the best fruits by the test of smell and appearance. As might have been expected, the exhibitors who failed to win prizes were far from being pleased with this style of judging, and for once they had good reason to grumble. That Melons must be cut and tasted before a right decision is arrived at most of us will admit; it is a necessary evil, becoming more difficult to avoid in proportion to the increase in the number of new or so-called new sorts introduced. If the Judges were conversant with every sort, as in the case of Grapes and Pine Apples, the case would be different, but even then it is doubtful if they could always determine which are the best without cutting.

If it were previously intimated that the Melons would not be cut, then exhibitors would stage accordingly. Some varieties, notably Blenheim Orange, the best of all scarlet-fleshed sorts, is very strongly scented and is most attractive in appearance soon after being cut, but it really requires to be kept three or four days before it is ripe up to the rind. The heavier the fruit and thicker the flesh the greater need of keeping; but at Kensington I observed that kept fruit found no favour with the Judges, and I, as a consequence, concluded they knew but little about the varieties before them. As a member of the Fruit Committee remarked, the best-looking fruit, or which would be selected for a representative collection of fruit, are frequently inferior in quality, and this was strongly exemplified among the Melons submitted for certificates the same day. There are times when it is really unfair to cut Melons, as an experienced judge is usually competent to decide between three or four fruits; and I have often thought it

wrong that Melons should be cut when staged in pairs, especially at the early Royal Botanic shows where paltry prizes are offered, one fruit being then worth more than the first prize to be gained.—EXHIBITOR.

### THE NATIONAL ROSE SOCIETY.

JULY 1ST.



ALTHOUGH the dry weather of the past month has given rise to some fears respecting the success of the Great Rose Show of the season, it was found on Tuesday last that there was little foundation for such fancies, as though, perhaps, there were a few stands less

than at some previous exhibitions, the Show generally was a satisfactory one. There was a preponderance in some of the classes of small blooms, but the exhibitors had in most cases gathered their blooms as young as possible to insure their standing the trying ordeal they were to undergo in the conservatory. In an hour or two a great difference was produced in the appearance of the exhibits, and many who saw them late in the day would have a difficulty in understanding the awards. This was very strikingly shown in the amateurs' class for forty-eight, in which the third-prize collection appeared much the best about the middle of the afternoon. Tea Roses were extremely well shown; indeed in several collections, notably those in Division C, they were magnificent. There seems to be an annual improvement both in the quality and numbers of these lovely Roses, and certainly they are always amongst the most admired. Light Roses were also generally good, though the Devon blooms were remarkable for their rich bright colours.

The silver medals for the premier Teas and Hybrid Perpetuals in the Show were gained by the following exhibitors:—In the nurserymen's class by Mr. Prince, who had the best Tea, Jean Ducher, a beautiful substantial bloom, in his third-prize collection of eighteen Teas, and by Messrs. Curtis, Sanford & Co., who had the finest Hybrid Perpetual, Général Jacqueminot, a grandly coloured bloom, in their first lot of forty-eights. The premier Hybrid Perpetual in the amateurs' classes was Marie Finger in Mr. Girdlestone's third stand of forty-eight—a magnificent bloom, well built, and clean; and the premier Tea was a massive Souvenir d'Elise Varden in the Rev. Page Roberts' stand of eighteen blooms.

There were six rows of boxes arranged the whole length of the conservatory, and it can be imagined from this and the number of competitors given in the notes following that the display was a large one.

#### NURSERYMEN'S CLASSES.

The majority of these were well filled, and the blooms were in several cases very satisfactory, though there was much diversity in the merits of the various collections. In most of the larger classes the blooms were somewhat irregular, and there were, with a few exceptions, an absence of massive blooms.

The principal class was that for seventy-two blooms, in which the Challenge Trophy and £5 constitute the leading award. These honours Messrs. Paul & Son, Cheshunt, succeeded in obtaining with bright fresh blooms, some, perhaps, rather small, but their neatness evidently gained them favour with the Judges. The varieties represented were as follow:—Duchesse de Caylus, Victor Verdier, Sénateur Vaisse, Madame Thérèse Levet, Charles Darwin, George Moreau, Ulrich Brunner, Devoniensis, Pierre Notting Madame Hippolyte Jamain, Dr. Andry, Madame Lacharme, Prince Arthur, Edouard Morren, Reynolds Hole, La France, Charles Lefebvre, Souvenir d'Elise Vardon, Etienne Levet, Duke of Edinburgh, François Michelin, Marguerite de St. Amand, Madame Isaac Perrière, Madame F. Giron, Comtesse d'Oxford, Niphotos, Alfred Colomb, Capitaine Christy, Abel Carrière, Jean Ducher, Duke of Teck, Maréchal Niel, Louise Van Houtte, Boieldieu, Duc de Rohan, Countess of Rosebery, Mrs. Charles Wood, John Hopper, Edouard André, Souvenir de Malmaison, Mrs. Baker, Madame Camille, Star of Waltham, Merveille de Lyon, Horace Vernet, Elie Morel, Marie Baumann, Pride of Reigate, Nardy Frères, Alba Rosea, Sultan of Zanzibar, Mons. Noman, A. K. Williams, Henri Ledechaux, Alfred Dumesnil, H. Schultheis, Mons. E. Y. Teas, Queen of Queens, Jean Surey, Lady M. Fitzwilliam, Grandeur of Cheshunt, Madame E. Verdier, Mrs. G. Paul, Abel Grand, Xavier Olibo, Perle des Jardins, M. Bernardin, Innocente Pirola, Autoine Ducher, Pride of Waltham, Comte de Raimbaud, and Madame Prosper Laugier. Mr. B. R. Cant, Colchester, won the second prize with good examples of A. K. Williams, Duke of Teck, Madame Ducher, Catherine Mermet, Fisher Holmes, and Madame Gabriel Luizet, amongst other smaller blooms. Messrs. Keynes, Williams, and Co., Salisbury, were third with a rather irregular collection, but including some good blooms, and Messrs. Cranston & Co., King's Acre, Hereford, were fourth, these being the only exhibitors.

Six collections of forty-eight triplets were staged, Mr. B. R. Cant being first with large blooms, rather full, but of good colour, Mons. Noman, Souvenir d'un Ami, Boieldieu, François Michelin and Baronne de Rothschild being especially noteworthy. Mr. C. Turner, Messrs. Cranston & Co., and Messrs. Keynes, Williams & Co. followed in that order with bright and fresh, though slightly weaker blooms.



Teas were beautifully shown, mostly of fine substance, clean and fresh. Amongst the five exhibitors of eighteen Teas Mr. B. R. Cant was adjudged the first prize for admirable blooms of Catherine Mermet, Niphotos, Moiré, Madame Willermoz, loose; Marie Van Houtte, Perle des Jardins, Devoniensis, Maréchal Niel, Madame Cusin, very bright and pretty; Souvenir d'Elise, large; Rubens, Madame Catherine Kuster, Madame C. Bravy, Madame Margottin, Souvenir d'un Ami, a beautiful bloom; Innocente Pirola, large but loose; Madame Angele Jacquier, Anna Ollivier. Messrs. Paul & Son were second with smaller but neat and fresh examples, particularly good blooms being Madame Cusin, Souvenir d'un Ami, Alba Rosea, and Devoniensis. Mr. G. Prince, Oxford, was third, a corner bloom of Catherine Mermet being very fine in this stand; and Mr. C. Turner, Slough, was fourth.

In Division B some of the best Roses in the Show were exhibited, especially in the class for forty-eight blooms, of which nine lots were staged. Messrs. Curtis, Sanford & Co., Torquay, won premier honours with grandly coloured substantial blooms, which excited the admiration of all who saw them. Remarkably good were the following:—François Levét, Alfred Colomb, Madame Lacharme, Général Jacqueminot, large and brilliant colour; Madame Sophie Fropot, Madame Charles Wood, Capitaine Christy, Duchess of Bedford, Marie Verdier, very pretty; Ferdinand de Lesseps, Jean Ducher, A. K. Williams, a grand bloom; Duke of Edinburgh, Marie Baumann, Horace Vernet, Beauty of Waltham, Duchesse de Morny, Star of Waltham, Marie Rady, and François Michelin. The second-prize stand from Mr. F. Cant contained good blooms. Madame Lacharme, Catherine Mermet, Dr. Sewell, Madame Ducher, Mons. Noman, Antoine Ducher, and Star of Waltham. Mr. J. House, Eastgate, Peterborough, was third, and Messrs. J. Jeffries & Sons, Cirencester, fourth, several small and rough blooms being notable on both these stands.

For twenty-four single trusses the competition was very keen, twelve exhibitors entering the lists. Messrs. Curtis & Sanford were again the most successful with fresh and beautiful blooms of Alfred Dumesnil, Marie Baumann, A. K. Williams, Duchesse de Morny, Marie Rady, Reynolds Hole, and Lady Sheffield. Messrs. G. Cooling & Son, Bath, were second with substantial blooms of Etienne Levét, La France, Duke of Connaught, and Marie Baumann; the third and fourth prizes being secured by Mr. F. Cant and Messrs. Jeffries & Co. In the classes for twelve Teas the blooms were also very fine and even, and the seven stands occasioned the Judges a little difficulty. Mr. F. R. Cant was first with handsome blooms, of which the following were the best:—Souvenir d'un Ami, Marie Van Houtte, Moiré, Souvenir d'Elise, Madame Welch, Catherine Mermet, Jean Ducher, Rubens, Maréchal Niel, and Devoniensis. The second prize was accorded to Mr. J. Mattock, New Headington, Oxford, for smaller blooms, but Jean Ducher, Madame Hippolyte Jamain, and Amazone were fine. Messrs. J. Burrell & Co., Cambridge, and Messrs. J. Jeffries & Sons were third and fourth respectively.

#### AMATEURS' CLASSES.

In the opinion of some experienced rosarians amateurs were not so strongly represented as usual, taking the classes generally, but in the smaller ones they well maintained their credit, and the Tea varieties were grandly shown. There was a noticeable falling-off in the quality of the collections in the class for forty-eight, and it appears that this is too large a number for amateurs to make up in a satisfactory manner, and it is thought probable that the Society will reduce the number to thirty-six again. The challenge cup for forty-eight blooms was won by T. B. Haywood, Esq., Woodhatch Lodge, Reigate (gardener, Mr. T. Ridout), amongst eight competitors, with a fresh and pretty collection, but some of the blooms were rather small. The varieties were as follows:—Capt. Christy, Mrs. Jowitt, Baronne de Rothschild, Etienne Levét, Emily Laxton, Pierre Notting, Eugène Verdier, Horace Vernet, large and handsome; pink sport from Madame C. Joigneaux, Marie Baumann, Madame Thérèse Levét, Mons. E. Y. Teas, Mrs. Baker, Madame G. Luizet, Madame Lacharme, Abel Grand, Duc de Rohan, Abel Carrière, Marquise de Castellane, John Hopper, Anna Ollivier, Pride of Waltham, Alfred Colomb, Fisher Holmes, Lady Mary Fitzwilliam, Duchesse de Morny, Louis Van Houtte, A. K. Williams, Edouard Morren, Hippolyte Jamain, La France, Ferdinand de Lesseps, Star of Waltham, François Michelin, Jean Pernet, Dr. Hogg, Marie Rady, Le Havre, Lady Sheffield, Royal Standard, Countess of Rosebery, Mrs. Laxton, Countess of Oxford, Duchesse de Vallombrosa, Général Jacqueminot, Mons. Noman, Charles Lefebvre, and Camille Bernardin. Rev. Hugh Berners, Harkstead Rectory, Ipswich, secured the second place; T. W. Girdlestone, Esq., Sunningdale, being third with larger and fuller blooms, which looked exceedingly well until late in the afternoon. A. J. Waterlow, Esq., Great Doods, Reigate (gardener, Mr. Brown), was fourth. Mr. Ridout had the best twenty-four blooms, a beautiful collection; T. W. Girdlestone, Esq., being second, and Mr. T. B. Hall, Larchwood, Rock Ferry, third, amongst five exhibitors.

As in the other classes the amateurs' collections of Tea Roses were of admirable quality, six good stands of twelve being entered. H. J. Waterlow, Esq., Great Doods, Reigate (gardener, Mr. J. Brown), was first with neat compact blooms of Jean Ducher, Marie Van Houtte, Catherine Mermet, Souvenir d'Elise, Innocente Pirola, Madame Willermoz, Rubens, Souvenir d'un Ami, Jean Pernet, Caroline Kuster, Etoile de Lyon, and Alba Rosea. The Rev. Hugh Berners, Harkstead Rectory, Ipswich, was second with rather larger and fuller blooms. Mr. A. Slaughter, Jarvis Villa, Steyning; and T. W. Girdlestone, Esq., following in that order.

In division D the leading class was for twenty-four single trusses, and in this the competition was very close, twelve stands of nearly equal merit being entered. The Rev. J. H. Pemberton was the most successful with capital blooms of Marie Finger, Constantin Tretiakoff, Miss Hassard, Louis Van Houtte, Annie Laxton, Duke of Edinburgh, La France, A. K. Williams, Duchess of Bedford, Marquise de Castellane, Caroline Kuster, Marie Cointet, Beauty of Waltham, Marie Verdier, Horace Vernet, Duchesse de Vallombrosa, Exposition de Brie, Souvenir de la Malmaison, Countess of Rosebery, Helen Paul, Etienne Levét, Madame Victor Verdier, and Star of Waltham. Captain Christy, Sidmouth, Devon, was a very close second with large substantial blooms, especially fine being A. K. Williams, François Michelin, Mrs. Laxton, Etienne Levét, Maurice Bernardin, and a weak Duke of Edinburgh. Miss Watson Taylor and Mr. G. Baker, Reigate, were third and fourth. A box of blooms from Mr. F. C. Pawle, Northcote, was also highly commended. Ten competitors also entered in the class for six varieties,

three trusses of each, Miss Watson Taylor, Manor House, Headington, Oxon (gardener, Mr. F. Gurden), leading with handsome blooms of A. K. Williams, Marie Van Houtte, Marguerite de St. Amand, Prince Arthur, Duchess of Bedford, and La France. Mr. S. P. Budd, Bath, Rev. J. H. Pemberton, and W. H. Wakeley, Esq., followed in the order named.

The best twelve Teas were from Miss Watson Taylor, the back row blooms of Catherine Mermet, Souvenir d'un Ami, Alba Rosea, and Maréchal Niel being extremely fine. Amazone, Comtesse de Naidailac, Jean Ducher, Niphotos, Madame Willermoz, Cornelia Bock, Souvenir d'Elise, and Marie Van Houtte were similarly good. The Rev. E. L. Fellowes was second, showing Souvenir d'Elise, Catherine Mermet, and Anna Ollivier in fine condition; W. H. Wakeley, Esq., Tracklands, Rainham, Kent, and R. L. Knight, Esq., Sittingbourne, taking the other prizes. There were eight entries.

The piece of plate offered as a first prize for twelve Roses in Division E was gained by Mr. R. E. West, Reigate, with pretty neat and clean blooms of Capitaine Christy, Annie Wood, Baronne de Rothschild, Marie Baumann, François Michelin, Le Havre, Duchesse de Vallombrosa, Madame Victor Verdier, Marie Finger, Alfred Colomb, Madame G. Luizet, and Abel Carrière. E. M. Bellmore, Esq., Denne Park, Horsham (gardener, Mr. H. Harris), was second, having capital examples of Duke of Teck, François Michelin, substantial and good form; Mons. Noman, and La France. Mr. T. F. Burnaby Atkins, Halstead Place, Sevenoaks, was third, his A. K. Williams and Madame Prosper Laugier being fine; and the Rev. J. H. L. Fellowes, Brighton Rectory, Aisle, Norwich, took the fourth place. Thirteen collections were staged.

The best of the ten boxes of nine blooms were staged by Mrs. Fuller, Vicarage, Bexley, who had Mons. Noman, fine; Etienne Levét, beautiful and good examples of Charles Lefebvre, Alfred Colomb, A. K. Williams, and Xavier Olibo. Rev. R. C. Hales, Woodmancote Rectory, Henfield, Sussex (gardener, Mr. H. Simmons), was third, one bloom of A. K. Williams in the centre of the stand being remarkably fine. G. G. Stone, Esq., Eastcote, Red Hill (gardener, Mr. C. Goode), was third; and fourth prizes were awarded to Mr. E. Mawley, Lucknow House, Addiscombe, and the Rev. H. B. Biron, Hythe, Kent, the last-named having handsome blooms that were really worthy of a higher position. Five boxes of six trusses were entered, W. Melles, Esq., Sewardstone Lodge, Chingford, Essex (gardener, Mr. T. Turk) being first for good blooms of La France, François Levét, Duchesse de Vallombrosa, Madame A. Perrière, Jean Ducher, and Souvenir de Madame Alfred Vy. Mr. C. E. Cuthell took the second place, and the Rev. J. G. Hodgson, Saltwood Rectory, Hythe, was fourth. The seventeen exhibitors of six Teas caused the Judges much difficulty in making the awards, but after a careful consideration the Rev. Page Roberts was placed first with fine blooms of Souvenir d'Elise Vardon, Caroline Kuster, Jean Ducher, Niphotos, Madame Hippolyte Jamain, and Catherine Mermet. The Rev. R. C. Hales, Woodmancote, Henfield, was second, the Rev. T. G. Hodgson third, and Mr. Turk fourth, the last having Jean Ducher remarkably fine.

#### EXTRA CLASSES.

The prizes, including a piece of plate, for a basket of Tea or Noisette Roses only brought two competitors, and that neither of these were of unusual merit may be judged from the fact that only a third prize was awarded. In the class for eighteen Teas or Noisettes it was, however, very different, six collections being entered, and the one selected for the chief honours, from the Rev. F. Page Roberts, The Rectory, Scole, Norfolk, well deserved its position, for it contained some of the grandest blooms in the Show. The varieties were—Souvenir d'Elise Vardon, very substantial and handsome, was awarded the silver medal for the best Tea or Noisette in the amateurs' classes, Anna Ollivier, Madame Hippolyte Jamain, Souvenir d'un Ami, Madame Camille, Niphotos, Madame Margottin, Perle de Lyon, Souvenir de Paul Neyron, Madame Bravy, Marie Guillot, Madame Lambert, Jean Ducher, Catherine Mermet, Innocente Pirola, Madame Welche, Caroline Kuster, and Marie Van Houtte. Rev. J. H. Pemberton was a good second, the Rev. E. L. Fellowes following with a creditable collection. A class was provided for six trusses of distinct varieties, open only to those who have never won a prize at the National Society's Show. George Christy, Esq., Buckhurst Lodge, Westerham, was the first amongst sixteen competitors, with fine examples of Henri Ledechaux, Capitaine Christy, La France, A. K. Williams, Marie Rady, and Duchess of Edinburgh. Mr. A. B. Lindsell, Hitchin, Herts, was second, his blooms of Marie Rady and Marquise de Castellane being very good; R. E. West, Esq., Reigate, was third; and the Rev. J. G. Hodgson fourth.

Five boxes of six new Roses were contributed, but none were of extra good quality. T. W. Girdlestone, Esq., was first with Violette Bonier, Comtesse Henriette Coomber, Comtesse de Mailly-Nesle, Princess of Wales, Miss Edith Giffard, and Ulrich Brunner. The second place was accorded to the Rev. J. H. Pemberton for May Paul, Pride of Waltham, Madame Montet, Madame C. Perrière, Helen Paul, and Archduchess Elizabeth. Rev. Alan Cheales, Brockham Vicarage, Surrey, followed with Helen Paul, Earl of Pembroke, Reine Maria Pia, Princess of Wales, Lord F. Cavendish, and May Paul.

One of the strongest classes in the Exhibition as regards the number of exhibitors was that for six trusses of any Rose, no less than twenty boxes being staged, and all of considerable merit. The Rev. H. Berners won premier honours with magnificent blooms of Jean Ducher; Lord Brooke, Easton Lodge, Dunmow (gardener, Mr. H. Lister), following very closely with Charles Lefebvre, large, bright, fresh, and beautiful blooms. Mr. C. Cuthell, Chapel Croft, Dorking, was third; other good varieties being François Michelin, Marie Baumann, and Madame Lacharme.

#### OPEN CLASSES.

The exhibits in these classes added materially to the beauty of the Show, the single variety classes being well filled. Messrs. Paul & Son had the best twelve new Roses (not in commerce previous to 1881), the varieties being as follows:—H. Schultheis, Merveille de Lyon, Comtesse de Paris, Lady M. Fitzwilliam, Grandeur of Cheshunt, Etoile de Lyon, Ulrich Brunner, Helen Paul, Madame Melanie Vigneron, Queen of Queens, Baron Nathaniel Rothschild, and Pride of Waltham. Messrs. Curtis, Sanford & Co. were second, their best blooms being Andre Gill, Ulrich Brunner, and Admiral Seymour. Mr. B. R. Cant was third, also showing Ulrich Brunner in good condition. There were four entries.



Messrs. Paul & Son were again first with six blooms of any yellow Rose, showing Marie Van Houtte, beautiful, fresh, even specimens. Mr. B. R. Cant was second with Maréchal Niel of rich colour; and Mr. F. Mattock, Oxford, was third with Marie Van Houtte, very even and clean.

For six blooms of any white Rose equal first prizes were secured by Mr. B. R. Cant for Devoniensis, very handsome; and Messrs. Curtis, Sanford, and Co., for Merveille de Lyon, large handsome blooms, but slightly too full; Messrs. Paul & Son being third with Niphetos. Six lots were staged. Nine stands of crimson Roses were contributed, Messrs. Curtis, Sanford, and Co. leading with Marie Baumann, extremely handsome, fine in form and colour. Mr. J. House, Eastgate Nursery, Peterborough, was second with A. K. Williams, very bright and fresh.

Nineteen competitors staged in the class for twelve trusses of any Rose, Mr. A. Evans, Marston, Oxford, being first with La France, very fine, and Messrs. Paul & Son second with Capitaine Christy. Highly commended, Mr. F. Cant's box of Catherine Mermet; and Mr. C. Turner's box of Caroline Kuster being highly commended.

Miscellaneous exhibits were not very numerous. Messrs. J. Veitch & Sons, Chelsea, had six boxes of handsome Rose blooms, representing a great number of the best varieties. Messrs. C. Lee & Son, Hammersmith, had a similar collection. Messrs. J. Cocker & Son, Aberdeen, showed some fine Pansies, Violas, and Pyrethrums; Mr. R. B. Porter, Maidenhead, sent a collection of Canterbury Bells; Mr. Walker of Thame exhibited some handsome blooms of the old Mule Pink, which were greatly admired; and Mr. House of Peterborough had a stand of the bronzy orange-coloured Rose W. Allen Richardson.

### MELONS CANKERED.

I HAVE tried several remedies for this dreaded disease, and now consider that Portland cement is the best, next to this being grated quicklime. The affected part is carefully scraped, and then a small quantity of cement or lime frequently rubbed in. It apparently absorbs the gummy matter and heals the wound sufficiently to enable the crop to be matured. Slaked lime is of no use, neither is sulphur or sand. Alum I have not tried. Can anyone explain why whole branches of healthy Melons sometimes suddenly collapse and become quite rotten in a few hours?—W. IGGULDEN.

MELONS cankered or diseased in the stem can be cured in very bad cases with alum and sulphur in equal parts. I am growing some plants in 8-inch pots in pits. Some were badly diseased before the fruit was set, but these are now a pound in weight and looking well, and I have no doubt they will ripen well in due time. The causes of canker are planting too deep, injury to the leaves, too much water, and not sufficient air. Avoid these, and use a little of the above when stopping the shoots, and there will be no disease.—J. E. WAITING.

### HARDY FLOWERS.

AT this time of year the lover of hardy flowers is in full enjoyment of all the beauty a large collection can afford. The borders are full of interest, and we have only to look around to find abundance to charm us.

**ONOSMA TAURICA.**—A most handsome rock or border plant. With Mr. Ewbank of Ryde it used to grow into a large tuft in his rich rather stiff loam, and I have elsewhere seen it in grand condition in the open border. My plants are, however, planted at the foot of the rockery, and they are doing well, at the present time covered with the tubular bright yellow flowers, other spikes coming on to succeed the rest. There is only one satisfactory method of increasing it, unless we could get seed—viz., by young cuttings, and it is much better to select the small soft cuttings from the centre of the plant; strong cuttings almost invariably damp off, whereas the majority of the others root. Of eight inserted in April I have now seven plants in small pots. No alpine collection should be without it. Native of Tauria. Introduced about 1801, and well figured in the "Bot. Mag." t. 889.

**CAMPANULA VAN HOUTTEI.**—One of the finest of the large-flowered section, producing very large rich purple bells from the leaf axils; these hanging down present an appearance only obtained by the others mentioned herewith. I cannot say why, but Van Houtte's Bellflower is not half so frequently met with as it should be. It is showy, easily grown, and easily increased. Take off the young shoots in spring when about 2 inches long, and insert them in sandy soil placed in a cold frame, and they will strike readily. We have what may be considered the counterpart of this in one named C. Burghalti, which produces flowers of the same form, and perhaps rather larger, of a very pale lilac colour, sometimes nearly white, and it has been called Van Houttei alba; but this term alba is deceptive, because the flowers in their nearest approach are many shades from white; nevertheless, it is one of those plants which I should be very sorry to miss from the border, as it not only forms a good companion to C. Van Houttei, but is independent of that variety—a very meretricious plant—very vigorous in growth, easily increased by cuttings or division, and in every way adapted for extended culture.

**ANTIRRHINUM ASARINA.**—A curious Snapdragon truly—but there is no mistaking it. Of dwarf procumbent habit, the shoots

trailing a good distance in a season, with light green reniform freely notched leaves, both surfaces thereof covered with short soft hairs, on which account one may assume it is sometimes called A. molle, as I have several times met with it under that name. The flowers are solitary or in pairs in the leaf axils, from 1½ to 2 inches long; the tube and lip are pale sulphur, and there is a tuft of yellow hairs at the mouth which extends all down the inside of the tube. It is quite hardy if planted in the proper position, which should be a warm corner of the rockwork in a stony sandy soil, when it will show itself yearly. I know a patch a yard square, which has been in the same position for over twenty years. It is easily increased by young cuttings. It is a native of Italy, and a good figure of it appears in the "Bot. Mag." t. 902.

**CAMPANULA GLOMERATA AND VARIETIES.**—Very showy plants are these. The typical plant is not so effective as one named C. speciosa dahurica; it is deeper in colour, and the flower heads are larger, while the individual blooms are increased in size. There is also a form named pallida which is by no means so showy. Alba is very desirable with its pure white heads. Free in growth and blooming, it should not be outside any collection of hardy border flowers; and in addition to these we have a double-flowered variety which I like much, because it is more lasting than the single ones, but perhaps not quite so elegant. They all prefer rich soil, with good drainage and plenty of rotten manure when planting, and good results will follow.

**LYCHNIS VESPERTINA FL.-PL.**—This is frequently met with under the name of L. dioica, fl.-pl., a totally different plant, and much inferior to the one under consideration. This, under good cultivation, produces a profusion of double white flowers from June to October from 1½ to 2 inches across, most serviceable in a cut state. Its value for general garden decoration is patent to anyone with an eye to the "goodies," and it is certainly one of those hardy perennials which are far from weedy. Many have expressed their opinion as to the difficulty of increasing it, but really there is none if the right means are adopted. Proceed as follows:—In February take up an old stool, pot it, and place in a cool greenhouse and stimulate growth. When the young shoots are about 2 inches long take them off as low down as possible, and put them in sandy soil in pots stood in the same house, and, all other things being equal, they will surely, though perhaps slowly, produce roots. Presently another batch of smaller shoots will be sent up, and these will even make better cuttings—the point is to secure young soft cuttings, and then the difficulty vanishes. By this means I succeeded in raising a good batch both last year and this, and the same plants are now a mass of bloom, and will be for months to come.

**ALSTRÖMERIA CHILENSIS.**—One of the best in the genus for outside culture, free-growing, very floriferous and pretty, useful for cutting; each stem is terminated with large lax corymbs of flowers, each one on a very useful-sized stalk. The three outer divisions of the perianth are broader than the three inner, light cream, buff shaded and tipped with purple; the two upper inner ones are yellow, striped with crimson and purple-tipped, so that a very pretty combination of colours exists in the flowers, and I can heartily recommend it to lovers of hardy flowers, and as it is so cheap it should be planted in masses. The best position is a warm sunny border well drained. In such a place I have now a mass with five and twenty heads, each with not less than twenty flowers thereon.

**DICTAMNUS GIGANTEUS.**—One of the finest hardy plants now in flower, and it is the first time I have seen it in bloom, although it has been planted where it stands now three years, but like D. Fraxinella it grows slowly. It is more vigorous than that species, with large pinnate leaves. The stems are about 2 feet high, terminated with a large panicle of red-pink deeply veined flowers, measuring 1½ inch across, and lasting a long time. It is now very striking, and I am doing my utmost to try and secure seed from it. I know nothing of its history or habitat, but it was purchased from Messrs. Haage et Schmidt of Erfurt. All lovers of hardy flowers should secure it, for it is quite hardy, and however much we may esteem the old Fraxinella, this will be preferred.

**LATHYRUS DRUMMONDII.**—The best surely of all the Everlasting Peas—I say a long way ahead of any one of them—very free-flowering; not so rampant as the latifolius series, with good racemes of bright red flowers about the size of those of latifolius; but imagine how much more effective it is, and how useful in a cut state. There is no doubt it is far too scarce in the country, and when seen must be loved; but as yet it is comparatively rare. I have seen it in but few gardens. I hope it may seed freely this year. Some young cuttings taken off when 3 or 4 inches long have rooted nicely, and by this means a true



stock will find its way into general cultivation; and I venture to predict all growers of hardy plants will make it one of the "lions." Where does it come from?—T.

### MULCHING AND TOP-DRESSING.

I CAN assure your correspondent, Mr. E. Burton, that the omission of mention on page 459 of spent bark from tanneries was quite unintentional on my part. It is undoubtedly well adapted for the purpose of mulching, and I can also confidently assert that it is also a fairly good manure, having seen a great amount of meadow land much improved by it, and whole quarters of healthy fruit trees which never receive any other kind of manure. When thoroughly decayed, say after twelve months' employment in forcing houses, it is almost as good as leaf soil for heavy land, and I should be glad of a hundred loads of it for our heavy unworkable garden. Unfortunately, it is not within the reach of many places, or it would be more generally used. When applied fresh from the tannery and before April as a mulching to Gooseberries and Red Currants it is undoubtedly a good preventive of the destructive caterpillar or grubs hatched out of the eggs deposited on the leaves by the Gooseberry sawfly. Whether the juices from the tan affect the chrysalids or check the egress of the fly I am unable to say; but, any way, it answers the purpose, besides being beneficial as a mulching. It will thus be seen that the omission of spent tan in my list of mulching materials was quite an oversight on my part, and I wish to thank Mr. Burton for calling my attention to it.—W. IGGULDEN.

### A VISIT TO BELGIUM.

GARDENING is one of those difficult occupations requiring the expenditure of much study, time, and money, as well as occasional travels to the famed gardens of our own country and those of the continent, to enable all who are either professionally or otherwise connected therewith to become qualified practitioners. In England we have such a number of gardening books and periodicals, in which all the best and latest information on all phases of gardening is freely given, that we might be tempted to exclaim, Why do we need to expend time and money in travelling to all these famed British and continental gardens when we can sit at home and read all about them? We reply, There is a greater need than many gardeners are aware of for visiting famous gardens. We must actually see the different phases of gardening in operation to learn all about them, and this can only be accomplished by visiting our fellow practitioners. Having heard and read much about Belgian gardening, I had long had a wish to pay a visit to a few of the noted places in Belgium. This wish was gratified a few weeks ago through the kindness of my employer, who very generously provided the means to enable me to see and gain a little information on Belgian gardening.

The time selected for my visit was not perhaps the most opportune, as in May gardeners cannot afford to be absent very long. The object of my visit was partly a business one, and preliminary to a more extended stay at a future date, to enable me to become acquainted with a country necessarily strange to an Englishman, hence my stay there was somewhat brief. Many gardeners would like to pay a visit there, but are deterred on account of the difficulties of the language; but I assure them that they need be under no misapprehension on this point, as English is spoken at the principal stations, hotels, and nurseries. I must confess to a very limited acquaintance with the French and Flemish tongue, but this did not deter me from making a pilgrimage alone to Ghent, the horticultural metropolis of Belgium. Like all novices in the art (if I may so term it) of continental travelling, I elected to travel over there by day, thinking I should enjoy the voyage. I booked through from Cannon Street station to Ghent, taking a return ticket. You are booked through second-class to Ghent and back for the modest sum of £1 19s. 6d., the tickets or coupons covering all railway and steamboat charges. I left Cannon Street at 7.45 A.M. by mail train, and arrived at Ghent at 3.45 P.M. that afternoon. The Belgian mail packet boats are not, perhaps, of the most comfortable pattern, and owing to the high speed at which they travel and consequent lightness of tonnage, the plunging of the vessel does not by any means conduce to the comfort of the passengers who, like myself, suffer from sea-sickness. I took the precaution before landing at Ostend to get a supply of Belgian coin of the courteous steward.

I enjoyed the ride by rail from Ostend to Ghent. The country is flat and well watered. I was astonished at the extraordinary thriftiness of the people in this Flemish province of Belgium. The trim, well-stocked, and cultivated fields testify strongly to their industry and skill in agricultural matters. The Flemish farmers have a peculiar way of planting their arable land. There are no fields bounded by hedges on a small scale as in England, hedges being seldom seen, the plots being divided by small watercourses, ostensibly for irrigative purposes. On one plot will be seen a small patch of Wheat, another of Barley, one of Potatoes—these generally at the corners of the plot, whilst in the centre are irregular plantations of Hops. The latter occupies a position in nearly every plot, sometimes in the corners, and indeed anywhere, no regard being paid to uniformity in arrangement. The Potatoes are grown on elevated ridges, and are earthed up in the same way as practised in England. The Flemish farmers turn their arable land to much better account than we do in England. For instance, I am told, as well as from what I saw, that as soon as one crop is off another takes its place without much loss of time, hence the peculiar system of planting their crops. The pasture land seems of good quality, and is well stocked with cattle. The farms

and peasants' houses are extremely neat and clean to the eye, externally having the appearance of being whitewashed, to most of which are gardens of a greater or less extent, well stocked with Peas, Scarlet Runner Beans, &c. One of the prettiest stations I ever saw was that of Alost, rather more than midway between Ostend and Ghent. It is built in the form of a castle, having a very ornamental exterior. The Belgian railways and their carriages are very inferior to ours. The fearful creaking, shaking, and din considerably detracts from the enjoyment of the ride, especially if you wish to converse with a fellow passenger.

Arriving at Ghent I was struck with the dissimilarity between English and Belgian life. There are no vast shops occupying the sides of streets, but instead a great number of hotels and estaminets, or common lodging houses, especially around the station. Each hotel keeper strives to outvie the others by occupying as much of the pavement and street as they possibly can with tables and chairs, which are pretty well occupied, especially in the evening. There is plenty of travelling accommodation in the shape of cabs and tramcars; the latter are inferior to our London cars. There are some very fine buildings, such as the Palais du Justice, ancient churches, and fine old convents. Through the kindness of M. Louis Van Houtte I had the pleasure of inspecting the interior of one of these interesting buildings. On my arrival at the station I took a cab direct to M. Van Houtte's to deliver up a letter of introduction. Van Houtte's extensive nurseries are within ten minutes' drive of the station. M. Van Houtte was away from home just then, but I received a hearty welcome from the genial and courteous manager, M. Van Eechaute, who, by the way, is a fluent English speaker. Having made arrangements for the next day, I had to seek an hotel. I had some difficulty in finding suitable quarters, but at last secured excellent accommodation at the Hotel le Duc and "Englishe Taverne," where every attention was shown me during my stay by the obliging host, who speaks English well. After a refreshing sleep and a hearty breakfast, morning landed me as arranged at Van Houtte's nurseries, to inspect which was a task of no small magnitude. To give a detailed description of those vast nurseries would require more space than our indulgent Editor would grant, hence I must treat the various topics as briefly as I can. We will commence with the glass departments first, which are of enormous extent, containing myriads of plants in all stages of growth.—T. W. SANDERS.

(To be continued.)

### THE INSECT ENEMIES OF OUR GARDEN CROPS.

#### THE PEAR.

(Continued from page 425.)

BEFORE we notice the numerous destroyers of the leaves and fruit of the Pear a few words must be given to an insect that appears on the branches principally (but sometimes spreads itself from the bark to the leaves), which belongs to a brotherhood of the worst pests the fruit-grower has to assail and conquer, if he is to attain success. For this enemy not only reduces the crop of fruit, it also, by its smothering influences upon the bark, rapidly diminishes the vigour of the tree attacked. The Pear oyster scale (*Aspidiotus ostrææformis*) is nearly allied to the mussel scale of the Apple, a species which indeed sometimes visits the Pear as well as the tree, which is more usually its resort. This Pear scale, which, if unmolested, soon appears in clusters, has individually much of the appearance of an oyster in miniature, hence the name. It is, of course, as with others of the family, the withered body of the female insect which serves to protect the young when feeding upon the juices of the tree; these are drawn up by a rostrum or sucker. The adult male has wings and long antennæ, the colour is greyish; the female while alive resembles a flattened rounded maggot, it is rather yellowish, and has only the rudiments of wings and legs. The old and certainly objectionable mode of assailing this scale was by scrubbing the branches with sand, or, preferably, with strong suds, and some still syringe the trees in winter with a soapy solution. But as Mr. Downie and others have shown, the very best remedy is to paint the trees well in December or January with pure whale oil, which does not damage the bark or the buds, though it effectually disposes of the insects.

Allied to the preceding, but more akin in habit to the aphid tribe, is an insect which comes out during early spring, seeking the young leaves or expanding flowers of the Pear. It rejoices in a variety of names. The Germans call it the Pear sucker, in America it is the jumping Pear louse, and Mr. Wood styles it the Pear Chermes; the scientific name is *Psylla Pyri*. From the aphides, however, it is distinguished by its power of leaping, and the perfect insects also live through the winter in sheltered crannies, where they are not easy to discover. They are yellow and green, but turn darker after they have been out for a short time, with four milky white wings and broad heads, in size about equal to a large aphid. The tiny eggs are ingeniously hidden. From these the larva, at first yellow with white horns, but darkening as they grow like the perfect insects, show themselves for a week or two on the under surface of the leaves, or on the calyx; subsequently, however, they gather in crowds upon the



twigs, besmearing these with their secretions. Not only are the twigs thus disfigured and the fruit (if any) injured, but the sticky substance draws ants, flies, and wasps.

During 1880 Miss Ormerod received reports from numerous and scattered localities about the harm done by this species to Pears, those on walls suffering most, but also standards and espaliers to an extent, and she states that one treatment frequently adopted successfully was to begin by syringing the trees with solution of softsoap, following it up by the application of Gishurst compound combined with tobacco water. Doubtless any of the customary remedies for aphids or fly would be serviceable in the case of the chermes, and the fact that wall trees are specially infested points to the conclusion that the insects are likely to abound where they can get plenty of shelter in winter. All possible hiding holes should therefore be explored, and the bark of standards kept free of lichens, &c. We have, in speaking of the Cherry insects, fully described the slug worm, which disfigures and damages that fruit tree, and the Pear has a kindred but not precisely the same species; for there is this marked difference in habit, that the Pear slug does not change on the tree, it descends to the earth, where the cocoons lie at the depth of 2 or 3 inches. Hence the advantage of skimming off the surface soil round trees soon after the time when this slimy bottle-green larva has disappeared from the leaves, which is generally in September. The Pear slug has been called *Selandria* (or *Tenthredo*) *adumbrata*, and in America two broods in a year have been noticed—we have but one fortunately. Solution of softsoap destroys them; so, too, does tobacco water or the decoction of hellebore, and dredging lime upon the leaves has been recommended, but it needs repetition.

The abundant and justly dreaded weevil of the Apple (*Anthonomus pomorum*) attacks occasionally the Pear bloom, preferring the dwarf trees, so 'tis said, but the Pear has a weevil of its own, although I do not find it is now as injurious here as it is abroad.



Fig. 2.—The Pear Chermes (*Psylla pyri*).

In its size and appearance *A. Pyri* bears close similarity to the foe of the Apple. The species does not, however, confine itself to the blossoms, since it is also common in the leaf buds. The weevils, having wintered under shelter, when they emerge will deposit eggs upon any buds they may reach. On opening an infected bud we perceive a tiny, whitish, and wrinkled grub with a brown head, and very soon the buds become brown too and drop off. The little beetle is greyish or brownish, having two black spots and a white band. Köllar suggests that this insect, unless too plentiful, may be regarded as, in average seasons, rather beneficial than hurtful, since it reduces the quantity of the fruit, which is apt, if in excess, to be dwarfed or impoverished. This hopeful view does not seem to be shared by gardeners, and it is usual, where the weevil is noticed, to take measures for its extirpation. To prevent the weevils laying eggs, as they hide in or near the earth before they climb the trees, some spread over the trunks a band of tar mixed with oil to entangle them, or they may be shaken off the branches into sheets beneath when they have ascended. *Phyllobius oblongus*, less than the preceding, about a sixth of an inch long, and reddish brown, is a weevil which visits fruit trees in May, the Pear amongst others, but seldom in any quantity. The beetles make minute holes in the leaves; the grub or larva is not taken upon trees, its habit is to feed upon the roots of herbaceous plants.

Complaints were made to this Journal in 1883 with regard to the saw fly of the Pear (*Lyda hæmorrhoidalis*), which was found to be infesting trees against walls, and it is also partial to dwarfs; but few insects should be more easily disposed of upon detection, for the grubs or caterpillars lie under a web spun in company, and before they can emerge the quick eye of the gardener might often discover upon the under side of a leaf the patch of eggs laid by the parent, generally fifty at least, in May or June, according to the weather. The fly has four glassy wings and a black and yellow body, feet yellow, head black. Its long antennæ are vibrated rapidly as it moves in the usual manner of saw flies. When adult the grub is almost an inch long, dark grey and

transparent, with a black head and numerous feet. It quits the tree to bury itself in the ground for the winter, hence the advisableness of taking up the surface soil around Pear trees after the leaves have fallen (where this insect has been noticed) and specially along walls; this should be effectually charred. A parasite fly pierces many of these grubs and kills them.

Several tiny two-winged flies of the genus *Sciara* infest various fruits, that of the Pear amongst them; and one species from its habits has received the name of the Pear midge, *S. Pyri*, the maggot of which, when it is left undisturbed, burrows into the heart of the fruit, which is not, however, always checked in its growth, though it generally falls off during May or June. In any case the Pears are rendered uncatable by the presence of the maggots, for one fruit may contain from three to ten. This fly has black wings and a lead-coloured body, the maggot is whitish and without legs. It is in the summer that the species attains the winged state, and the flies must live through the winter, since they are busy upon the Pear buds before the blossoms have opened, laying eggs which produce the maggots. From its minute size it is seldom noticed by the gardener, and its worst foe, says Köllar, is a cold spring, which kills the young maggots, and thus diminishes our enemies for the next season. Another midge, called the black gall midge (*Cecidomyia nigra*), belonging to a gall-making family, but not itself a gall-producer, which is less common, pursues a similar plan, piercing the calyx in April with its long ovipositor, and leaving a variable number of eggs, the maggots living on the fruit.—ENTOMOLOGIST.

#### GRAPE-THINNING.

AFTER carefully perusing "T. A. B.'s" paper on page 493, I yet fail to see that he has given the slightest proof of his assertion that the berries being allowed to touch each other during the stoning period is a certain way to produce scald; but, on the contrary, he seems rather inclined to adopt my view of the matter, as will be seen by the following quotations. In his first paper he says, "Moreover, allowing the berries to touch each other during the stoning period is a certain way of producing scald." In his second he says, "I am aware that allowing the berries to touch each other is not the sole cause of scalding, but unless the ventilation is very carefully attended to, it may be one cause." He here brings in his deficient ventilation. Surely "T. A. B." would not expect all the beginners, to whom the hints were given, to be similarly situated; if so some allowance should have been made for this. It might have been as well if he had not brought his heating and ventilating apparatus into the controversy at all. Supposing his ventilators to be so badly arranged that he cannot leave them slightly open at night, does he mean by this that scalding takes place during the night? May I ask "T. A. B." how he manages to prevent the berries touching each other on the lower part of the bunch? If he keeps all the berries from touching one another, he will require a lot of ties, besides the split laths he recommends. He tells us his bunches are greatest in diameter across the shoulders; the tying process will increase the diameter when they are on the Vines, but not on the dessert plate. "T. A. B." must admit that it is on the dining-room table where the appearance is wanted. An employer seeing a bunch tied out in the vinery would be a little disappointed with the same bunch when placed on the table.

"T. A. B." considers the twisted matting better than a stick with V-shaped ends for moving the bunch as required, but gives no proof of its superiority, neither does he inform us how he moves the bunch after it has been tied, but passes on and tells us he has seen at a show the shoulders held in position by means of a small pad of cotton wool placed under them. If a gardener cannot grow Grapes to lie on a fruit dish or a show stand without being propped up with cotton wool, I am afraid he will not be congratulated upon the appearance of his Grapes at the table, nor yet be burdened with honours at an exhibition. By consulting the prize schedule of a leading society I notice all Grapes are to be shown on an inclined stand neatly covered with white paper. Would a pad of wool not be an infringement of the rules here? Could a judge be said to do his duty if he awarded a first prize to a bunch of Grapes that had to be held in position by means of cotton wool, when by its side there lay another bunch held in faultless position by its own berries, the bunches being equal in all other respects?—J. J.

#### ROSE ALFRED K. WILLIAMS.

I HAVE given this Rose his full name because, unless I am asleep or daft, A. K. Williams is not, as your Irish correspondent, "W. J. Murphy, Clonmel," would seem to suppose, an "empress among Rose queens," but I presume an emperor, for certainly, unless, as I have said, I am asleep, Alfred was the original ending of the initial A. I mention this, because talking with an old friend of mine, he too spoke of Mdlle. A. K. Williams. Now I am most willing to give up everything of beauty that I possibly can, as an attribute or mark of the fair sex, for "Y. B. A. Z." is one of their most devoted admirers; but if we begin to call Alfreds empresses, I am afraid we shall get rather "mixed." When we write or speak of the Rose generally as a flower, we generally put her down as the feminine gender, and call her very rightly the "Queen of Flowers;" but if speaking of a Rose called, for instance, Lord Raglan, or Général Jacqueminot, we can hardly say Général Jacqueminot is an "empress"



among the Roses; but since this Rose has become A. K. Williams, it would seem that there is an impression abroad that it is named after one of the "queens" of the earth.

But now, as to the Rose and its constitution W. J. Murphy reports favourably. I am delighted to hear it, and hope indeed he may be acclimatised. Here we have during spring a bleak, cutting, north-east wind from the downs in Wilts, with a hungry soil, by no means suited to the queen of flowers, and generally very severe winters. Last winter was an exception, and our coldest night was in May. In spite of the mildness I have seen A. K. Williams deaths in the gardens of two of my friends, and several in my own; the winter before last the same sad tale. If more favoured localities can give a better report I shall be well pleased, for it is a princely flower. Do not let W. J. Murphy suppose that we Wiltshire folk will discard it at once. I, for one, shall try in all places that I can command before giving up; but as a friend talking to me to-day said, "You saw my plants, and out of twenty last autumn it is a sorry spectacle." Certainly more than half are among the things that were, whilst the others were but "feeble folk." I am bound to confess that I have lost other sorts, especially of the plants ordered and planted in the autumn.

We shall doubtless see beautiful Roses, for some men are equal to all difficulties, and know how to meet and conquer them; but generally round our neighbourhood the mild winter and the cutting May have told a sad tale. Then this forcing weather, without rain, and followed by a wholesale invasion of the aphid tribe, has made the spring, as I imagine, very unfavourable to their development, especially as to size. But granting all this, if round here the question were asked, "Which of the newer varieties that stood at the head of last year's poll do you consider weak?" I am afraid the reply would certainly be "A. K. Williams." I am, however, such an admirer of it, that if unable to grow him myself, I can rejoice that others do. After all, Roses are like human beings—they do not all enjoy the same places, and the climate and surroundings that suit one variety do not agree with another; nay, more, the season that brings a variety prominently to the front, if it be a coy and uncertain bloomer, may not recur again for many seasons; and if it do not, that variety will disappoint many who were ready enough in the suitable season to be devoted worshippers. This is a trouble easily met by those who grow a large number of plants and have unlimited accommodation, but is a sad trial to small growers who have filled up their limited space with varieties that for many seasons may prove almost useless. This is a matter which I hope may be further worked out.—Y. B. A. Z.



WE have received vol. iii. of the ORCHID ALBUM, by Messrs Warner, Williams, and Moore. It is a splendid work, and is alike creditable to authors and artist.

— IT is with much regret that we learn of the DEATH OF MRS. CARTER, wife of Mr. John I. Carter, nurseryman, Keighley, which occurred at their residence, Willow Bank, last week, in her sixty-ninth year. Gentle, kind, a devoted wife and mother, a genial and considerate hostess, anticipating the wants of her guests, Mrs. Carter will be long remembered and her memory cherished by a wide circle of friends.

— AT the Summer Exhibition of the EALING AND DISTRICT HORTICULTURAL SOCIETY, to be held in the grounds of Manor House, Ealing, on July 9th, several liberal prizes will be offered for Roses—namely, £5, £4, £3, and £2, for twenty-four blooms, distinct varieties, and a challenge cup value six guineas for the best twelve Rose blooms. This cup is to become the property of the exhibitor if won two years, but not necessarily in succession.

— MR. A. YOUNG, writing on PRUNING OR NON-PRUNING GOOSEBERRY TREES, observes:—"The best system of pruning, or rather thinning out, Gooseberry trees which I have seen is that which is practised by Mr. Lumsden of Bloxholm Hall Gardens, Sleaford. The old wood is cut out annually, leaving only the long shoots. By cutting out the old wood annually numbers of shoots start from the base of the tree. These are merely topped, so as to keep the tree symmetrical. I think this is a better system than 'leaving them alone' or the 'spur' pruning system. If a man is armed with a pair of long-handled secateurs it is surprising what a large number of trees he can trim in a day."

— MESSRS. J. CARTER & Co., High Holborn, have issued an EXPLANATORY GUIDE TO THEIR EXHIBITS OF VEGETABLE AND FOOD SUPPLIES at the Health Exhibition, which contains a considerable amount of useful and interesting information. The work contains eighty-

two pages, the exhibits being described in groups under the heads of Cereals, Pulse, Nuts, Prepared Products, Green Vegetables, Salads, Roots, Fruits, Prepared Flowers, Leaves, &c., Dry Food, Grasses, Medicinal Plants, &c. With each particulars of its uses, qualities, &c., are given, analyses of many of the most important being also furnished.

— WE regret to announce the death of MR. GEORGE TOLL of 358, Stretford Road, and Hullard Hull Nursery, Manchester, on Monday last, June 23rd. He had been ailing for some time, but was only confined to his bed a few days. Cancer in the throat was the ultimate cause of his death. He was forty-nine years of age, and was widely known as a genial friend and able horticulturist.

— MR. A. F. BARRON, the respected Superintendent of the gardens of the Royal Horticultural Society, was last Saturday subjected to a DASTARDLY OUTRAGE at the South Kensington station of the Metropolitan District Railway. He had accompanied his niece from the Health Exhibition to the station, to see her safely into the train, when a rush was made upon them and his niece was thrown down on the platform. In the endeavour to protect her Mr. Barron was robbed of the costly gold watch which was presented to him last autumn by the Committee of the Apple Congress. We need hardly remark that, notwithstanding the exertions of the detective police, no trace has been discovered of the missing property. We are sure that all who know Mr. Barron will heartily sympathise with him on account of this cruel outrage.

— A NEW CLIMBING ROSE.—In a box of beautiful Tea Roses obligingly sent to us by Messrs. William Paul & Son, Waltham Cross, we find a new variety of great promise. It is described as a new climbing Tea Rose, and labelled "Waltham Cross No. 3." It is not a pure Tea Rose, but a hybrid, with grand much-serrated foliage, the bloom being full and symmetrical, outside petals rosy purple, inner rosy crimson. This new variety is deliciously fragrant, having much of the perfume of the sweet old Cabbage Rose. As it is said to grow and flower like Gloire de Dijon the new Waltham Cross Seedling is a Rose to be looked after, as, judging from the example before us, it promises to be a great acquisition.

— THE JURY of the INTERNATIONAL HORTICULTURAL EXHIBITION AT ST. PETERSBURG have awarded a gold medal to Dr. Regel, Director of the St. Petersburg Botanical Garden. The other awards for scientific work were to Dr. Gobi, the Russian algologist, for his remarkable herbarium; to Mr. Hartnack for his microscope; and to Countess Zichi for her picture representing the Serapias. A gold medal was awarded to the Japanese University of Tokio for its collection of fruits.

— WE have received the usual monthly packet of Messrs. Cassell's periodicals. "Paxton's Flower Garden" has excellent plates of Odontoglossum Pescatorei and Clematis lanuginosa, along with the Gleanings and Original Memoranda. "The Illustrated Book of Canaries and Cage Birds," No. 27, contains capital figures of the three Cardinals; and the popular edition of "Wright's Poultry Book" has reached its ninth number. We have also part 3 of "Cassell's Popular Gardening," 65 of "Familiar Garden Flowers," and 88 of "Familiar Wild Flowers." Part 6 of the "Encyclopædic Dictionary" brings the work down to "Babylonia."

— WE have received a beautiful BOUQUET OF HARDY FLOWERS from Messrs. H. Cannell & Sons, Swailey, consisting of Campanulas grandis alba, latifolia, nobilis, nobilis alba, persicifolia alba eorouata, persicifolia alba fl.-pl., rhomboidalis, and Van Houttei; Dianthus multiflorus Napoleou III., and D. plumarius annulatus; Draecocephalum Ruprechtii, Erigeron labellus, Genista tinctoria fl.-pl., Geranium platypetalum, Gnaphalium arenarium, Lupinus arboreus, Lychnis dioica fl.-pl. and L. Haageana, Mertensia sibirica, Oenothera fruticosa, Prunella pyrenaica, Sidaleea candida and S. malvaeflora, and Tropæolum polyphyllum. These make quite a rich display, and every one of them is worthy of cultivation in the now indispensable herbaceous border.

— MR. T. S. WARE of Tottenham announces his intention of maintaining a constant display of HARDY FLOWERS IN THE CONSERVATORY AT KENSINGTON during July, fresh flowers being added as required. The magnificent collection at the last meeting of the Royal Horticultural Society was greatly admired, and Mr. Ware is contributing greatly to an increase in the taste of these charming plants by his extensive and representative exhibits.

— GARDENING APPOINTMENT.—Mr. G. Smith, lately flower-



garden foreman at The Firs, Lee, has been appointed gardener to W. Parsons, Esq., Norham Gardens, Oxford.

— THE Rev. John Stevenson is preparing for publication, by subscription, through Messrs. Blackwood & Co., a "FLORA OF BRITISH FUNGI (HYMENOMYCETES)," with illustrations by Worthington G. Smith, F.L.S. The author states that he has the co-operation of the most eminent mycologists. It may be added that the value of the "Flora" will be greatly enhanced by embodying the views of Fries, contained in his "Monographia Hymenomycetum Sueciæ," a work which cannot now be obtained, only 100 copies having been originally printed. The issue of the work will depend on a sufficient number of subscribers being received by an early date, in which case the first volume will be published without delay.

— FROM the Hale Farm Nurseries we have received some handsome DELPHINIUMS, which admirably prove the value of these grand plants at this time of year. With compact spikes of brilliant blue and purple flowers in many shades, and 3 to 4 feet high, they have a most striking effect either as a background to borders of mixed plants or in shrubberies and near drives. Mr. Ware's varieties comprise the following:—Hendersoni, single, an enormous brilliant blue flower; one of the most handsome of all. Madame Stenger, single, rich purple-blue; a majestic compact spike. Madame E. Geny, double, large, rich purple. Blue Giant, single, dark blue; imposing habit. Madame Joigneaux, single, very handsome; blue edged with purple. Life-guardsman, single, bright blue. Madame Richalat, double; compact spike, purple centre, blue outer petals. George Taylor, double, pale blue with a slight purplish tinge; handsome spike. Leona Bart, single, light blue. Mrs. James Helme, semi-double, light blue, very pretty shade; and Conspicua, single, rich bright blue. With them were a number of unnamed seedling varieties of equal merit as regards size of flowers and spike, and brilliance of colours.

— BOILING POTATOES IN THEIR "JACKETS."—Mr. W. Mattieu Williams, in the "Popular Science Monthly," thus states his reasons why Potatoes should be so cooked:—"From 53 to 56 per cent. of the saline constituents of the Potato is potash, and potash is an important constituent of the blood—so important that in Norway, where scurvy once prevailed very seriously, it has been banished since the introduction of the Potato, and according to Lang and other good authorities, it is owing to the use of this vegetable by a people who formerly were insufficiently supplied with saline vegetable food. Potash salts are freely soluble in water, and I find that the water in which Potatoes have been boiled contains potash, as may be proved by boiling it down to concentrate, then filtering and adding the usual potash test, platinum chloride. It is evident that the skin of the Potato must resist the passage of the potash into the water, though it may not fully prevent it. The bursting of the skin only occurs at quite the latter stage of the cookery. The greatest practical authorities on the Potato, Irishmen, appear to be unanimous. I do not remember to have seen a pre-peeled Potato in Ireland. I find that I can at once detect by the difference of flavour whether a Potato has been boiled with or without its jacket, and this difference is evidently saline."

— COLOURS FROM PLANTS.—A German writer shows that a great variety of colours can be readily obtained from common plants found almost everywhere, the method consisting principally in boiling them in water at a high temperature, so as to produce a strong decoction. Thus, for instance, the well-known Huckleberry, or Blueberry (*Vaccinium*), when boiled down, with an addition of a little alum and a solution of copperas, will develop an excellent blue colour. The same treatment, with a solution of nut-galls, produces a clean dark-brown tint; while with alum, verdigris, and sal-ammoniac, various shades of purple and red can be obtained. The fruit of the Elder (*Sambucus nigra*), so frequently used for colouring spirituous liquors, will also produce a blue colour when treated with alum. The Privet (*Ligustrum vulgare*), boiled in a solution of salt, will furnish an excellent colour; while the over-ripe berries yield a scarlet red. The seeds of the common Burning Bush (*Enonymus*), when treated with sal-ammoniac, produce a beautiful purple-red; while the juice of the Currant, pressed out and mixed with a solution of alum, will furnish a bright-red colour. The bark treated in the same way produces a brown. Yellow can be obtained from the bark of an Apple tree, the Box, the Ash, the Buckthorn, the Poplar, Elm, &c., when boiled in water and treated with alum. A lively green is furnished by the Broom (*Spartium scoparium*), and brownish-green by the Genista.

#### GARDENING TOPICS—MULCHING.

LIKE "A Thinker" I quite agree with Mr. Iggulden's ideas on mulching, most beneficial results attending it when applied judiciously. I have made it a rule for some years when I had the opportunity of well mulching plantations of Raspberries, Gooseberries, and Black Currants. Last year I partially mulched a row of Gooseberry bushes, on one side of which was a row of Raspberry canes, on the other espalier Apple trees. At both ends where the mulch of dung was applied both Raspberries and Gooseberries are stronger and healthier than where not so treated. I have also had good results from mulching Peach borders, both indoors and out, but do not consider it so desirable in the latter. Nothing pays so well for mulching as Strawberries, especially if the mulch is half-decomposed manure. It would be useless to enumerate all the advantages to be derived from mulching and surface-dressing, Mr. Iggulden having so fully described its benefits.

Some few years ago I had to deal with some Peach trees on the open wall, which were very stunted in growth and suffered from mildew; the walls were very old, and supported at intervals by flying buttresses, the walls overhanging. The weather was showery, but the Peach trees derived little benefit from it. I had the soil for about 6 feet from the trees broken up, a mulching of farmyard manure laid on thick; copious waterings were given, about 200 gallons to each tree and the result was the trees grew out of the mildew made clean sound wood, and ripened the crops in good condition. The same results were obtained from surface-dressing round Apple trees when bearing a heavy crop. As the season is particularly dry, and the wells in many places low owing to the small rainfall last autumn and winter, anything that can be done to assist our fruit and vegetable crops without being dependant on the water-pot is of value.

Another matter during very hot dry weather is the value of some slight shading or mulching for newly-sown seeds. The best plan I can find to ensure their free germination is to well water the ground before sowing, and after the seed is sown to cover with dry fine-sifted soil, in which some wood ashes, charred earth, charcoal breeze, and a little guano or other fertiliser has been well mixed. This I invariably apply to all sowings of Radishes, Lettuces, Cauliflowers, Cabbages, Turnips; for the latter I have the drills drawn, well watered, the seed sown, then fill with the fine soil, and the result is they grow away from the fly, and we have the gratification of seeing a "good plant," as the farmers say, and something to fill the pot afterwards.—J. GADD.

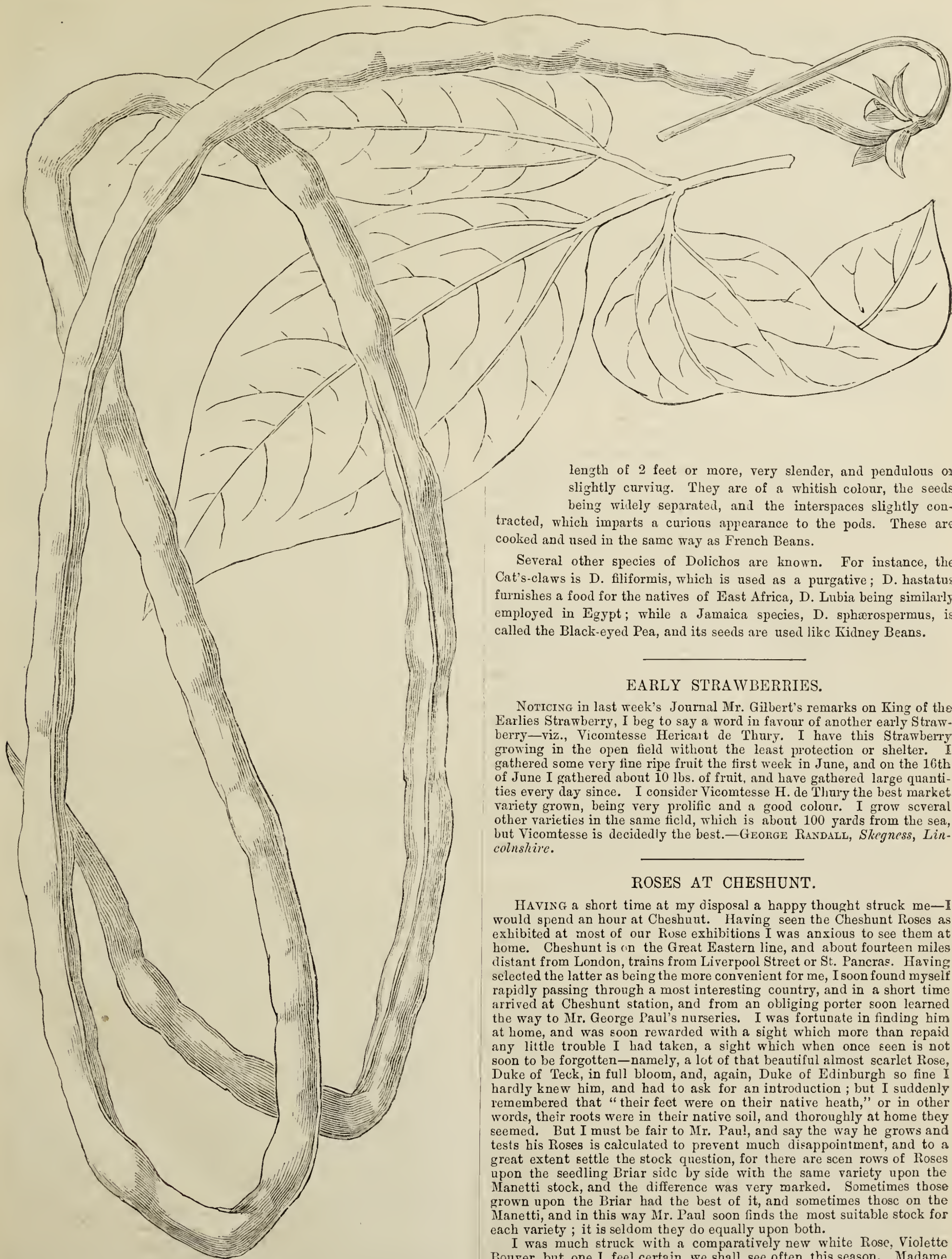
ATTENTION cannot be too strongly called to such an important matter in gardening practice as mulching; but the ordinary practice of placing dry littery manure over the roots of plants is not the soundest practice. I often have seen bad results from that system. The litter may perhaps have received a good drenching of rain at first, and become battered together like a cake—sloping possibly from the collar of the plant like thatch. Every drop of rain is thus carried outside the young roots. This refers more to fruit trees, shrubs, and Coniferae than vegetables in the kitchen garden, which are generally on flat ground, or the plant close enough to allow the whole surface being covered. In the case of Celery we place mowings of lawns and such material, which also answer well for Lettuces, Carrots, and Turnips; but with trees and shrubs we prefer good decayed manure (except merely as protection during winter) in quantity, and covered with the soil, which prevents waste of manurial properties, and prevents the sun drying the mulching. A quantity of soil placed over new borders of Roses (which were well mulched last season), Pansies, and herbaceous plants is now under the prolonged drought doing admirable service; while some hundreds of Currants and Gooseberries, lifted and transplanted on fresh ground a few months ago, are all we could desire. The soil was well coated with decayed cow manure, and over the latter a few inches of soil was placed, which is kept open and clean with hoe or prong. The Gooseberries are loaded with fruits, and the wood is about a foot long, the leaves unusually large. Plums, Cherries, and Pears lately planted and mulched, and the mulching well covered with soil, have made wood 2 to 3 feet long. Some maiden Peaches bought at 1s. 6d. each are larger than more expensive trained trees planted at the same time. They are mulched with a thick turf laid over the roots, grass side downwards, and some loose soil is put neatly over the whole. The turves are matted with healthy roots, which are of course near the surface, the ground under the roots being rammed like a floor, and full of lime rubbish, stones, bones, and broken bricks, which is already showing its action by production of fibry roots. A quantity of evergreens, some hundreds of pounds worth, Coniferae, and deciduous trees in great variety, are battling admirably with drought; all were mulched with decayed cow manure, and the same covered neatly with the natural soil.—M. TEMPLE.

#### DOLICHOS SESQUIPEDALIS.

As "a remarkable Bean" a correspondent has sent us specimens of a peculiar variety of *Dolichos sesquipedalis*, and as it is doubtless a stranger to many of our readers we give an illustration showing the pod of its natural size. The plant is a South American annual, which is cultivated in the south of France and other parts of the continent under the name of "Dolique Asperge." The pods were grown on a plant in a greenhouse.

It is rarely seen in England, except as a curiosity, and as such it is worthy of a place in any garden, the extraordinary pods attaining a



Fig. 3.—*Dolichos sesquipedalis*.

length of 2 feet or more, very slender, and pendulous or slightly curving. They are of a whitish colour, the seeds being widely separated, and the interspaces slightly contracted, which imparts a curious appearance to the pods. These are cooked and used in the same way as French Beans.

Several other species of *Dolichos* are known. For instance, the Cat's-claws is *D. filiformis*, which is used as a purgative; *D. hastatus* furnishes a food for the natives of East Africa, *D. Lubia* being similarly employed in Egypt; while a Jamaica species, *D. sphærospermus*, is called the Black-eyed Pea, and its seeds are used like Kidney Beans.

#### EARLY STRAWBERRIES.

NOTICING in last week's Journal Mr. Gilbert's remarks on King of the Earlies Strawberry, I beg to say a word in favour of another early Strawberry—viz., Vicomtesse Hericart de Thury. I have this Strawberry growing in the open field without the least protection or shelter. I gathered some very fine ripe fruit the first week in June, and on the 16th of June I gathered about 10 lbs. of fruit, and have gathered large quantities every day since. I consider Vicomtesse H. de Thury the best market variety grown, being very prolific and a good colour. I grow several other varieties in the same field, which is about 100 yards from the sea, but Vicomtesse is decidedly the best.—GEORGE RANDALL, *Skegness, Lincolnshire*.

#### ROSES AT CHESHUNT.

HAVING a short time at my disposal a happy thought struck me—I would spend an hour at Cheshunt. Having seen the Cheshunt Roses as exhibited at most of our Rose exhibitions I was anxious to see them at home. Cheshunt is on the Great Eastern line, and about fourteen miles distant from London, trains from Liverpool Street or St. Pancras. Having selected the latter as being the more convenient for me, I soon found myself rapidly passing through a most interesting country, and in a short time arrived at Cheshunt station, and from an obliging porter soon learned the way to Mr. George Paul's nurseries. I was fortunate in finding him at home, and was soon rewarded with a sight which more than repaid any little trouble I had taken, a sight which when once seen is not soon to be forgotten—namely, a lot of that beautiful almost scarlet Rose, Duke of Teck, in full bloom, and, again, Duke of Edinburgh so fine I hardly knew him, and had to ask for an introduction; but I suddenly remembered that "their feet were on their native heath," or in other words, their roots were in their native soil, and thoroughly at home they seemed. But I must be fair to Mr. Paul, and say the way he grows and tests his Roses is calculated to prevent much disappointment, and to a great extent settle the stock question, for there are seen rows of Roses upon the seedling Briar side by side with the same variety upon the Manetti stock, and the difference was very marked. Sometimes those grown upon the Briar had the best of it, and sometimes those on the Manetti, and in this way Mr. Paul soon finds the most suitable stock for each variety; it is seldom they do equally upon both.

I was much struck with a comparatively new white Rose, *Violette Bouyer*, but one I feel certain we shall see often this season. *Madame Isaac Perière*, foliage and habit something like *Souvenir de Malmaison*, but the bloom delicate pink; Mr. Paul calls it the *Pink Malmaison*.



Merveille de Lyon, delicate white, and as I saw it distinct from the White Baroness. Ulrich Brunner is a very large carmine rose, hardly I should say up to the exhibition shape, but Mr. Paul thinks well of it. Several of the old favourites were there in all their beauty, such as Marie Baumann, La France, Charles Lefebvre, Baronne de Rothschild, and many others which we might class as "always good-alike-Roses," but time would not permit more than a hasty peep.

I was charmed with the variety and beauty of the old-fashioned, or I suppose I should be now more correct in saying, new-fashioned single Roses, and glad to find our old friends which used to delight our grandfathers were now receiving proper attention, and were largely in demand.

Mr. Paul seems to have solved the difficulty of how to grow Tea Roses in the open. His system has been fully described in the "Rosarian's Year Book." They are grown upon raised beds, good drainage being very important, and upon the approach of severe weather he earths them up in drills, and then places a little rough litter between the rows. In this way he is able to grow the most delicate Teas, always having plenty of healthy wood and plump buds under the ground line when the frost has done its work. So impressed was I with what I saw I quite intend to try a few plants this autumn.

His giant pot Roses which have now obtained a world-wide fame, and are nowhere more appreciated than in the north, have just all been repotted, and were looking nothing the worse for their long journeys. Truly Cheshunt is a most interesting place, and had I not seen a single Rose bloom I should have felt fully repaid by seeing such grand foliage and healthy plants from which will come, I hope, the usual splendid blooms that delight so many thousands at our Manchester Exhibition in July.—J. B.

### SPECIAL SOCIETIES—EXHIBITING.

WE have been favoured by an old and esteemed correspondent with a copy of a printed circular, which we presume is being distributed by Mr. E. S. Dodwell. Mr. Dodwell has not sent us a copy; but, believing that many of our readers are interested in the welfare of the Society, of which Mr. Dodwell is the Honorary Secretary, we think they should be made familiar with this unique production.

#### DR. HOGG AND THE NATIONAL CARNATION AND PICOTEE SOCIETY (SOUTHERN SECTION).

"TO JOHN T. D. LLEWELYN, ESQ., President.

"DEAR SIR,—To place the *bona fides* of the Editor of the *Journal of Horticulture* in reference to the continued attacks made upon the National Anricula and National Carnation and Picotee Societies in its columns beyond the possibility of question, more especially with reference to a communication signed 'Onwards,' published in the issue for May 29th, immediately on receipt of your note of June 1st, to my hand on the 4th only, I placed the matter in the hands of Messrs. T. & G. Mallam, an eminent firm of Solicitors here, who also were further instructed by the exhibitors, winners of certain prizes, to whom gross malpractice was ascribed, and in the annexed correspondence furnish you with the result.

"It needs little comment. To 'elicit truth,' after a lapse of ten months, Dr. Hogg, by means of a carefully concealed Mrs. Gamp, publishes some reported sayings of the intangible Mrs. Harris, and thrusting aside President, Committee, and Officers alike, graciously vouchsafes to permit the several members of the Society aimed at to appear *seriatim* and purge themselves of the imputation in his august presence. But Dr. Hogg's sense of justice is too fine to permit the specific denial of the persons specifically charged to appear, and his honour is far too nice to permit him to submit his informant to the rude inquisition of persons charged to maintain the honour, integrity, and fortunes of the Society. No pressure may effect this.

"Dr. Hogg is wise in his generation. Dr. Hogg knows well the withdrawal of the curtain would disclose and defeat his paltry plot; for Dr. Hogg knows, as I know, the correspondence assailing the Societies is wholly counterfeit, contributed by members of his staff or Mr. D'Ombraim, and has no foundation of independent opinion whatever; further, Dr. Hogg knows he has suppressed or garbled communications on the other side. Acting under the advice of the Messrs. Mallam, as in my state of health I cannot possibly make copies in number sufficient for distribution, I issue the correspondence printed for private circulation. If in your judgment or in that of the Chairman and Members of the Committee any further action should be taken, you will be pleased to direct.

"I am, your faithful Servant.  
"E. S. DODWELL."

"Oxford, June 23, 1884.

Mr. Dodwell has not printed the President's reply, but he has published a correspondence which has taken place between Dr. Hogg and Messrs. Mallam, an eminent firm of solicitors at Oxford, who in their letters to him do not appear to have stated that Mr. Dodwell, and not the Committee, was their client.

[COPY.]

"126, High Street, Oxford,  
"4th June, 1884.

"SIR,—We are instructed on behalf of the Executive Committee of the National Carnation and Picotee Society (Southern Section) to request you to at once supply us either with the grounds on which your correspondent 'Onwards' makes the assertions contained in your *Journal of Horticulture*, &c., of the 29th ultimo, beginning 'I heard it several times remarked, &c.,' to the end of the letter, or failing that, with the name of your anonymous correspondent.

"Awaiting your reply,

"We are, your obedient Servants,  
"T. & G. MALLAM.

"Robert Hogg, Esq., LL.D.,  
"Editor of '*Journal of Horticulture*,'  
"171, Fleet Street, London, E.C."

We need scarcely say that after various other communications had passed Dr. Hogg declined to comply with the requests made by Messrs. Mallam.

Now, it was rash on the part of Mr. Dodwell to constitute himself the mouthpiece of the Committee, and to instruct these legal gentlemen to threaten pains and penalties on Dr. Hogg without informing them that he was exceeding his powers, and that there had been no meeting of the Committee authorising him to act on their behalf. We know, on the best authority, that there was no meeting of the Committee authorising Mr. Dodwell to instruct Messrs. Mallam.

We would not have taken any notice of the above extraordinary letter were it not for the unfounded charges brought against Mr. D'Ombraim and other members of our staff. So long as he confines himself to vituperating Dr. Hogg no harm is done, and Mr. Dodwell may indulge himself to his heart's desire in doing so; but we cannot allow him malignantly to attack gentlemen who have taken no part in exciting his irascibility. We state emphatically that neither Mr. D'Ombraim nor any member of our staff has taken any part in the correspondence to which he alludes in his circular; and if Mr. Dodwell is imbued with a due sense of honour he will without delay withdraw that imputation. The same sense of honour will, we trust, induce him—first, to reply to the questions of "Onwards" at pages 417 and 471 in the same frank manner in which Mr. Douglas has done; and secondly, to explain how it came about that Master Stanley Dodwell, who it is said is his grandson and a schoolboy aged from seven to nine years, was enabled to be successful in carrying off the prize money of the National Carnation and Picotee Society's Shows.

The Committee of the Society\* consists of gentlemen who enjoy the confidence of every class of horticulturists, and we commend the whole of this subject to their serious consideration in the interests of the Society, whose welfare and usefulness so much depend on the honour and integrity with which it is administered; and we trust that they will receive our assurance that whatever appears in the pages of this Journal is intended as a prop and bulwark to the Society—to strengthen and protect it against the perils to which it is exposed. A sincere regard for the Society's prosperity has induced us to suppress a large amount of correspondence which we have received on this subject. We have already had an example of the effect that all this turbulence is causing in the following short communication from an influential amateur:—"The pity of it! It will kill the Society. I have left it."

### LEEDS SHOW.

MANY excellent exhibitions have been provided at Leeds, but tremendous downpourings of rain were destined to fall on the exact dates. Year after year splendid displays of plants, fruit, and flowers were disposed in a morass, and the gardens were practically sealed against visitors. Thus it was that the old Horticultural Society, after struggling against obstacles at once powerful and unpreventable, retired from the contest. The Horticultural Gardens' Company then incurred the risk of providing shows, and issued schedules offering good, but not what in these days are regarded as great prizes, and the support that was accorded and the good fortune of better weather last year, induced the Directors to offer still further inducements to competitors, with the result that a large, diversified, and in many respects superior Show was arranged on the 25th ult., and which continued for two succeeding days. The weather was brilliant, and after the Exhibition was formally declared open by the Mayor, an immense number of visitors crowded the gardens and tents.

As on former occasions the collections were arranged in three marquees, one of which was apparently about 150 yards long, containing the specimen plants and effect groups; the others at right angles being occupied with Pelargoniums and Fuchsias on the one hand, and fruit, cut flowers, and table plants on the other. It was suggested at the Show that had the large tent been arranged in the gardenesque style, the plants disposed in groups on the grass, that a magnificent spectacle must have been produced. Certainly if the too lofty pyramidal central stage had been removed, and the flowering and foliage plants tastefully associated, the effect would have been more imposing, but it is clearly necessary to afford ample space for the thousands of visitors who attend when "weather permits," and this important element must not be overlooked in any effort that may be made to group the exhibits more artistically.

As at York during the previous week, the specimen stove and greenhouse plants and Pelargoniums were the most striking features. The groups were also good, but these, except in the case of Mr. Barran's, have been better at Leeds. Fruit was well staged, though many of the white Grapes were not quite ripe, while Roses and cut flowers generally were satisfactorily represented. Under the able management of the Curators, Messrs. Jackson and Wise, all was in readiness for the Judges in good time, and under the efficient superintendence of Mr. Bush, the Secretary, everything worked smoothly and well.

STOVE AND GREENHOUSE PLANTS.—In the principal class of twelve stove and greenhouse plants the prizes were £12, £8, and £4, and were won respectively by the Earl of Zetland, Aske Hall, Richmond (Mr. Letts, gardener); E. Gelder, Esq., Headingly (Mr. Tuke, gardener); and T. Fry, Esq., Darlington (Mr. Noble, gardener). Of the specimens staged by Mr. Letts, it is only necessary to say that they were substantially the same as those with which he won premier honours at York and referred to in the report of that Show last week. They were splendid examples of cultivation, remarkable for their freshness and vigour. Mr. Gelder's plants also bore the stamp of skilful culture, being in respect of health not inferior to Lord Zetland's, but they did not quite equal them in size, and one or two, notably a fine *Ixora*, required a few more days for showing in the best condition. *Clerodendron Balfourianum* was admirably shown, the sprays not having been so closely tied down to the trellis as is customary, and the beauty of the plant was thus considerably enhanced. The *Allamandas*, *Erica tricolor*, *Bougainvillea*, and *Dipladenia* were also in admirable condition. Mr. Noble's plants were generally smaller, but very healthy. In the class for six plants Mr. Letts was again in the premier position with splendid examples, Mr. Tuke following closely. Similar positions were secured by those exhibitors in the class for three plants, J. Barran, Esq. (Mr. Frankland, gardener) being a close third. In the small class Mr.

\* The Officers of the Society consist of the following gentlemen:—J. T. D. Llewelyn, Esq., President. James McIntosh, Esq.; Dr. Masters; T. F. Barnaby Atkins, Esq.; Dr. Hogg; and G. F. Wilson, Esq., Vice Presidents; and the Committee are Mr. Thomas Moore (Chairman), Rev. H. H. D'Ombraim, Rev. E. L. Fellowes, Messrs. H. Cannell, Shirley Hibberd, Laing, Charles Turner, T. S. Ware, and Harrison Weir.



Letts staged *Anthurium Schertzerianum*, *Aphelaxis macrantha rosea*, and *Erica ventricosa*. Mr. Tuke had an *Ixora*, *Bougainvillea*, and *Erica ampullacea*, and Mr. Frankland an *Allamanda*, *Clerodendron*, and *Dipladenia*, all bearing the stamp of masters in the art of cultivation. Mr. Tuke received the first prize in the single specimen Heath class with a fresh example of *Erica eximia superba*, Mr. Letts being second with a smaller but admirably grown plant of *E. Massoni*, Mr. Noble having the third prize.

**FINE-FOLIAGED PLANTS.**—These were well exhibited, all the plants reflecting credit on the several growers of them. In the open class for six plants Mr. Letts was in his usual position—first, with grand examples of *Crotons Victoria* and *Warreni*, *Kentias*, a *Dasyllirion*, and *Cordyline indivisa*. Mr. Noble was second, his most striking plant being a beautiful specimen of *Cycas circinalis*. Mr. J. C. Padman, Boston Spa, was an exceedingly close third; *Stevensonia grandifolia* being remarkably fine. In the amateurs' class for three plants the competition was very close indeed. Mr. Frankland was placed first with *Phormium variegatum*, *Croton magnificum*, and *Yucca aloifolia variegata*. J. Bateman, Esq., Pannal (gardener, Mr. Rollison), second with two good *Cycads* and a *Cocos*; Mr. Roberts, Wortley, having the remaining prize with an excellent *Dasyllirion*, a variegated *Yucca*, and *Dracaena australis*.

**FERNS.**—Both numerous and healthy were these elegant plants, and the competition in most of the classes was rather severe. In the open class for six stove and greenhouse plants the chief prize was awarded to Mr. Noble, whose group comprised *Gleichenia Mendelli*, *Davallia Mooreana*, *Goniophlebium subauriculatum*, *Davallia bullata*, *Gymnogramma sulphurea*, and *Microlepia hirta cristata*, the plants ranging from 3 to 5 feet in diameter, well furnished and in excellent order. Mr. Frankland was second with good *Cyatheas* and *Blechnum corcovadense*, followed closely by G. Talbot, Esq., Burnley (gardener, Mr. H. Wright), whose best plant was *Pteris scaberula*, 3 feet in diameter. In the amateurs' classes for three plants the prizes were secured respectively by Mrs. Tetley, Weetwood (Mr. Eastwood, gardener), Mr. H. Wright and B. Hemsworth, Esq. (Mr. J. Lumley, gardener), all of whom exhibited well. Hardy Ferns were good, especially the first-prize collection of six plants of Mr. C. Rylance, Ormskirk, *Lastrea Filix-mas angustata*, and *F.-m. cristata*, *L. F.-foemina plumosum* and *cristata superbum*, *Osmunda regalis cristata*, and *Polystichum proliferum*. Mrs. C. Naylor, Potternewton (Mr. Goodchild, gardener), was second, *Scolopendrium crispum* being very good, and Messrs. Pybus & Son third. For three plants the prizes went to Messrs. Rylance, Goodchild, and Padman, the second-named exhibitor showing *Asplenium marinum* with fronds 18 inches long.

**GROUPS.**—Two classes were provided for these—namely, £10, £6, and £3, for arrangements occupying 216 square feet of space; and £5, £3, and £1 10s. for groups occupying 96 square feet. There was no difficulty in judging the larger groups, Mr. Barran's (Mr. Frankland, gardener) being distinctly the most effective, and must rank amongst the finest that has been arranged. The central plant was a fine specimen of *Phoenix reclinata*, under the arching leaves of which were *Crotons*, relieved by the feathery *Spiraea Aruncus*, and brightened with Canterbury Bells. The front was composed of *Isolepis*, *Lobelias*, and *Gloxinias*, and the centre filled in with *Caladiums*, *Ageratums*, *Sedum pyramidalis*, *Hydrangeas*, *Grevilleas*, and the elegant *Jacaranda mimosifolia*. The entire arrangement was bright yet free, still full, but without any packing or overcrowding. The second prize was awarded to Mr. Simpson, Selby, with an effective group, but rather lumpy, by the employment of large specimen double *Pyrethrums*. Mr. Dixon, Alton, had the remaining prize for a too formal arrangement. The smaller groups gave much more difficulty to the adjudicators. At the first glance Mr. Gelder's collection, being bright with *Liliums* and many flowers, appeared likely to be placed first, but a closer inspection showed that it was too crowded, and hence Mr. Talbot's group was unanimously placed before it. This was free and pleasing, though a little destitute in brightness. The centre plant, an *Areca*, was surrounded by *Spiraea Aruncus*, the flowers of which intermingled gracefully with the drooping leaves of the Palm; *Caladiums*, *Crotons*, *Dracaenas*, *Roses*, one or two *Orchids*, with taller plants of *Panicum plicatum*, and an edge of *Panicum variegatum* and *Coleuses*, were the plants chiefly employed, and the good taste in arrangement was manifest. Excellent in arrangement also was the third-prize group of Mr. Noble, but it contained scarcely any flowers, and on that account failed to win a higher position.

**PELARGONIUMS.**—It is impossible to speak too highly of these. The plants were simply magnificent, far surpassing any that have been seen of late years at the London shows. In the class for six Show Pelargoniums the champion grower of these plants—for such Mr. Eastwood is—obtained the premier place with splendid specimens 4 feet to 5 feet in diameter, perfect in symmetry, densely flowered, and with fresh good foliage. Mr. Rylance was an excellent second with rather smaller examples, but admirably grown, and with remarkably fine flowers, the light variety *Venus* being very telling. The remaining prize was well won by Mr. H. Wright, who was second in the class for three plants, Mr. Eastwood being first. Mr. Rylance secured the place of honour with six *Fancies*, with plants 2½ feet in diameter, covered with fresh fine flowers, Mr. Eastwood closely following with larger examples, but with smaller flowers that had lost their freshness. This exhibitor and Mr. Wright also secured the prizes in the order named for three plants. Mr. Eastwood was again first with six double *Zonals*, with specimens 4 feet in diameter, dwarf, and densely covered with fine trusses. He was first also for three plants, Mr. J. Sunley being second. In the class for six plants just mentioned—"six Zonal or Nosegay Pelargoniums"—W. L. Jackson, Esq., M.P. (Mr. Hodgson, gardener) staged admirably grown double Ivy-leaved varieties, and although this was not in exact conformity with the schedule, they certainly merited the second prize that was awarded. The question arises as to the advisability of providing a class for Ivy-leaved Pelargoniums. Well grown they are exceedingly attractive, and many distinct and beautiful varieties have been placed in commerce during recent years. Passing to the single *Zonals*, we have to say that such splendid examples as those staged by Mr. Eastwood in the class for six plants have never before been defeated at any show. Messrs. Pybus & Son of Ripon were, however, fairly first with perhaps the grandest specimens that have ever been staged. They were simple bouquets of brilliancy, of faultless form, and 4½ feet or more in diameter, every flower fresh, and the foliage excellent. The varieties were Mrs. Turner, The Blonde, Mrs. Kelley, Harry King, Mulberry, and Mrs. W.

Paul. Mr. Eastwood's plants were also grand, with even larger trusses, but some of the flowers a little too far advanced. Possibly some of the plants were at York the week previous, and if so it is wonderful that they could be staged in such condition at the Show under notice. Mr. Eastwood was first for three plants, followed by Messrs. J. Sunley and H. Wright. The chief prize for tricolors was taken by Mr. Stevenson, gardener to Mrs. Wood, Armley, and for bicolors by Messrs. Pybus. A certificate was awarded to Mr. Rylance for a new Show Decorative Pelargonium *The Beauty*, white, with distinct claret blotch, plant dwarf and extremely floriferous; a similar award was granted for a new Zonal raised and exhibited by Mr. Harrison, a diligent amateur who has been successful in raising many new plants. The variety under notice is named *Princess Ida*, and is of the fashionable colour denominated crushed strawberry; it is distinct and promising.

**ROSES.**—An effective group of plants in pots was arranged at the entrance to the large tent, the majority from Mr. H. May, Bedale, not for competition; still, prizes were offered for twelve plants, six plants, and three plants respectively. The chief prize in the larger class was secured by Messrs. Pybus with dwarf examples bearing from twelve to twenty blooms of good quality. Mr. May was second with dwarf plants, and Mr. Eastwood third. In the class for six plants Mr. Eastwood was placed first with small fresh examples, followed by Mr. J. Sunley; and for three plants the position of these competitors was reversed.

**Cut Blooms.**—The date was early for these, but not too early to prevent competition. In the class for forty-eight blooms Messrs. Cranston made a good beginning by securing the first prize with a really excellent box containing *Etienne Levet*, *Lady Mary Fitzwilliam*, extra fine; *Violet Bouyer*, nearly white, small and attractive; *Madame Noman*, ditto; *Mons. Noman*, E. Y. Teas, Nardy Frères, and *Marie Baumann*, all good, while far from being inferior were *Ulrich Brunner*, *La France*, *Merveille de Lyon*, *Ferdinand de Lesseps*, *Madame G. Luizet*, M. A. Dumesnil, *Marguerite de St. Amand*, *Senateur Vaiase*, *Madame Charles Wood*, *Mdlle. Marie Cointet*, *Le Havre*, *Pride of Waltham*, Mrs. Baker, *Marie Van Houtte*, M. *Marguerite Manion*, and *Duchess of Vallombrosa*. Mr. May was second with larger but less solid blooms, and Mr. Robinson, Bramham, third. These exhibitors occupied the same relative positions in the class for twenty-four blooms; and in the class for twelve Teas Messrs. Cranston and Co. and Mr. May were placed in the order named with stands of nearly equal merit. In the local classes the prizetakers were Messrs. Eastwood, Trees, and Sunley, but it is evident the date was too early for their *Roses*. Messrs. Cranston also staged excellent boxes of *Mons. Noman* and *Lady Mary Fitzwilliam*, the latter being notably fine, and merited the certificate that was awarded.

**ORCHIDS.**—The display of these plants was limited, the prizes not being sufficient to attract distant exhibitors. In the open class for six plants the first prize was won by Mr. Frankland, the most effective being *Lælia purpurata*, an excellent variety; *Vanda tricolor* was also good, and the flowers richly coloured. Mr. Rollison followed, his notable plants being *Epidendrum vitellinum* and *Cypripedium caudatum*. Mr. Eastwood was first with three *Orchids*, his best plant being *Aerides odoratum*, Mr. Rollison following, having neat examples of *Cypripedium niveum* and *Masdevallia Lindenii*. The collections were very close in order of merit, not a few of the plants lacking freshness.

**VARIOUS CLASSES.**—*Fuchsias*, though far inferior to such grand examples as are staged at Bath and Trowbridge, were yet fully up to the average of northern exhibits. Mr. Frankland secured the chief position with six plants, healthy ovals 5 to 6 feet high, and for three plants Mr. J. Sunley was placed first with free graceful untrained examples. We failed to obtain the names of all the prizewinners in the classes, but observed that some of the plants were deprived of elegance and grace by too "tight lacing." Table plants were neat, the prizes going to Messrs. Stevenson, Rollison, and N. German, Nottingham. Hardy plants were effective, the best collections being arranged by Messrs. Hodgson; Wood, Kirkstall; and Hartley; and for bunches of hardy cut flowers the same exhibitors secured the prizes, but in the reverse order, with admirable stands. For stands of exotic flowers, which were excellent, the prizes were awarded to Messrs. Hodgson, Letts, and Tuke. *Pansies* were numerous and fine, the prize-takers being Messrs. Harkness & Son, Bedale; Mann, Shadwell; and Cross. A box of the Countess of Kintore was very attractive, and this nearly black and white variety should be more extensively grown. Tuberosous *Begonias* were very inferior, and *Gloxinias* not nearly so good as we have previously seen them at Leeds, nor do stands of flowers call for approving comment. Bouquets were not on the whole of the highest quality, nor did the awards give the greatest satisfaction. They hardly do anywhere, for the simple reason that there is no recognised standard of excellence to guide either exhibitors or judges. The prizewinners were Messrs. Wright, Featherstone, Mann, and Frankland. By far the most meritorious exhibit of cut flowers was a beautiful wreath made by Mr. Featherstone, St. Ann's Nursery, Burley, who is an expert in artistic floral decorations. The wreath was similar to one made by the exhibitor and sent by the Mayor of Leeds to Windsor on the occasion of the death of Prince Leopold. It was composed mainly of *Callas*, *Roses*, *Stephanotis*, and *Pinks*, enclosing the letter L in *Forget-me-nots*. A certificate and extra prize were worthily awarded for this charming arrangement. A certificate was also granted to the Liverpool Horticultural Company for a miscellaneous collection of plants.

**FRUIT.**—In this department the duties of the Judges were by no means light, for seldom has such close competition been seen. Mr. Edmonds, gardener to the Duke of St. Albans, Bestwood Lodge, secured the first position in the collection of six dishes with good Black *Hamburgh* and small *Foster's Seedling Grapes*, a good *Pine*, capital *Melon*, fair *Nectarines* and *Figs*, and good *Peaches*. Mr. Dawes, gardener to the Hon. Mrs. Meynell Ingram, Temple Newsam, was an extremely close second, his white *Grapes* being decidedly superior to the others, and most of the other fruits good, *Peaches* being the failing dish. Mr. Wallis, gardener to Sir Henry M. Thompson, Kirkby Hall, York, was an excellent third with a good all-round collection, the *Chasselas Musqué Grapes* being specially notable. In the class for four dishes the competition was again severe, Mr. Sleightholme, gardener to W. Dymond, Esq., Burntwood Hall, Barnsley, being placed first with splendid *Lord Napier Nectarines* and *Alexandra Noblesse Peaches*, a small *Pine*, and good, but not quite finished, *Muscat Grapes*. Messrs. Dawes and Edmonds



followed in the order named with collections of nearly equal merit. In the class for four bunches of Grapes, two black and two white, Mr. R. Grindrod, Whitfield, Hereford, was the leading prizetaker with remarkably fine, but not quite ripe, Muscats and good Black Hamburgs, Messrs. Wallis and Dawes following closely in the order named. Mr. Grindrod was also first with two bunches of black Grapes—splendid Hamburgs, Messrs. Johnson and Edmonds following. Mr. Grindrod was once more first with white Grapes—fine Muscats, Messrs. Sleightholme and Sunley being second and third respectively. Mr. Jefferson, gardener to J. Garside, Esq., Carlton House, Worksop, was first for a Pine, and Mr. T. Hare, gardener to R. H. C. Neville, Esq., Wellingore, Grantham, second. Mr. W. Wallis took the first prize for a dish of Peaches, Grosse Mignonne, and Mr. J. Eastwood the second prize. Mr. Sleightholme was awarded the first prize for a dish of Lord Napier Nectarines, second Mr. R. Dawes for Violette Hâtive, the third prize going to Mr. Thos. Hare. Melons were numerous and good, Mr. J. A. Mann obtaining the first prize, Mr. J. Edmonds the second, and Mr. T. Hare the third. The first-prize was a seedling, for which a certificate was awarded—the first, probably, ever granted for a fruit that was not cut. Prizes were not offered for vegetables, Cucumbers excepted, and for which Mr. Clark, Rodley, secured the first prize. Such is the character of the Leeds Show—the pioneer, we trust, of even better exhibitions to be held under similarly bright auspices, which rendered it a well-won success, nearly 14,000 persons having visited the Exhibition.

### STAGING ROSES.

LIKE "Ayrshire Amateur," I think no additional foliage should be staged with Roses, and I also think it would be a step in the right direction to have the blooms raised more above the boxes or moss on which they are placed than the followers of the orthodox fashion advocate. This would necessitate some means of support, as even the strongest H.P.'s would droop a little after being on the exhibition table for some time. I am not an exhibitor of Roses, and perhaps I am treading on dangerous ground in daring to make a suggestion to the knights of the queen of flowers, who I daresay know their business better than an outsider.

The "Ayrshire Amateur's" question in last week's Journal reminds me that I have seen Roses staged 6 inches above the boxes, and supported by wires so arranged that they are scarcely observable, and the green foliage thus introduced gives the boxes a better and less formal appearance. These supports are very easily and quickly made. Get some wire just sufficiently stiff to keep in position the majority of Rose stems. Cut it in to 6 or 8-inch lengths. Now get a piece of wood similar to that represented at A in the accompanying sketch. It should be about 6 inches long, half an inch in diameter, perfectly round and smooth. Take three stout tacks with broad heads and drive into the piece of wood in the position indicated at a, b, c, leaving about half an inch space between each, and projecting from the wood about one-eighth of an inch. The end of the wire is placed between the nails, turned at right angles at b, twisted round the piece of wood and again turned round c, and so brought straight down from the latter. It is then eased over the head of the nail at c and slipped off the wood at the bottom end. The result is a support similar to that represented at B. In staging, the stem of the Rose is inserted sidewise into this, and the base of the bloom drawn down into the ring thus formed and tied at the bottom of the wire. It is then ready for placing in the tubes. The wire should, of course, be placed behind the stem when on the stand.

A similar reformation might be tried in staging Chrysanthemums, as suggested by someone some time ago in your pages, and the same sort of wires would do for supporting them. How much better would a stand of the beautiful feathery Japanese look with their bold green foliage amongst them? But here I must stop, as I have no wish to say anything that would sound like heresy in the ears of the professional "dressers," or in any way interfere with their mysterious art.—R. INGLIS.

### REIGATE ROSE SHOW.

NEVER perhaps have the uncertainties of our climate been more apparent than in the present season. Three weeks ago, notwithstanding the mildness of the past winter and the consequent early growth of the plants, there seemed every prospect of a good bloom and a pleasant season for the exhibitor and the frequenter of our numerous Rose shows. Then came a week or ten days of dull, sunless, unpleasant weather. The buds stood still—they were fully formed and partly coloured; they wanted but a few days of showery weather and then the sun. Instead of that they had no rain—they had a cold and sunless time, the nights especially being very cold; and then came an outburst of tropical sun. The buds were forced into opening before they had attained half their size, and when they did burst forth there came, not a "nipping frost," but a hot blazing sun, and destroyed the hopes of many who had heretofore hoped to achieve success. It thus happened that the Reigate Show was not at all up to the mark, and but for the novelty introduced into it would have been a great disappointment to its promoters. The novelty was this. Three of the leading Rose-growers of Reigate—Mr. A. J. Waterlow of Great Doods, Mr. Baker of Holmfels, and Mr. Haywood of Woodhatch—entered collectively into competition with any Rose-grower for sale who might like to venture. The prize, which was subscribed by the three gentlemen named, was £15, and the contest was looked forward to with much interest. The gentlemen were to bring together their best blooms, and a selection was to be made from them for a box of seventy-two. This was, as Mr. George Paul stated afterwards, perhaps too large a number for the amateurs, for nurserymen have so much larger a number of varieties to cull from that it must give them a great advantage. As it was, the nurserymen were the victors,

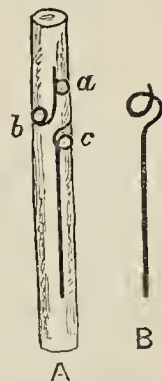


Fig. 4.

the two stands of Messrs. R. B. Cant and Geo. Paul being considerably ahead; but even they were not up to their usual excellence, and both in size and quality of the bloom showed the effect of the broiling sun we have had for some ten days past. After a very close competition the prize was awarded to Mr. Cant for the following:—Queen of Queens, Marveille de Lyon, Alfred Dumesnil, Ulrich Brünner, Mons. Noman, Horace Vernet, Louis Doré, John Hopper, Madame Vietor Verdier, Edith Giffard, Catherine Mermet, Beauty of Waltham, Duke of Edinburgh, Marie Baumann, Caroline Kuster, Emily Laxton, Miss Hassard, Rubens, Princess Mary of Cambridge, Marie Verdier, Duke of Teek, Duchesse de Morny, Le Havre, Vietor Verdier, Souvenir de la Malmaison, Alfred Colomb, Edouard Morren, Baroness Rothschild, Annie Laxton, Madame Isaac Periere, Xavier Olibo, La France, Niphetos, Souvenir d'Elise, Dr. Andry, Perle des Jardins, Marquise de Castellane, Marie Cointet, Duchesse de Vallombrosa, Innocente Pirola, Madame Villermoz, Ville de Lyon, Madame Moreau, Earl of Pembroke, Belle Lyonnaise, Jules Margottin, Madame Nachury, Général Jacqueminot, Moiré, Duke of Wellington, Louis Van Houtte, Madame Bravy, Gabriel Luizet, Madame Eugénie Verdier, Marie Van Houtte, and A. K. Williams.

In Class 1, for twenty-four varieties, Mr. Brown was first with a fairly good box of Etienne Levet, Marie Rady, A. K. Williams, Duchesse de Vallombrosa, Emily Laxton, Madame Gabriel Luizet, Ulrich Brünner, Mrs. Baker, E. Y. Teas, Dr. Andry, Jean Dueher, Paul Jamain, La France, Edouard Morren, Pride of Waltham, &c., Mr. Slaughter being second. In Class 4, for twelve Teas or Noisettes, Mr. Girdlestone was first with a nice box consisting of Jean Dueher, Souvenir de Paul Neyron, Etoile de Lyon (very good), Caroline Kuster, Madame Bravy, Souvenir d'un Ami, Niphetos, Perle des Jardins, Perle de Lyon, Marie Van Houtte, and Rubens. In Class 2, twelve trebles, Mr. Sargent was first with Duke of Wellington, Marquise de Castellane, Mdle. Eugénie Verdier, Marie Baumann, Star of Waltham, Capitaine Christy, E. Y. Teas, Mrs. Laxton, La France, Lady Mary Fitzwilliam. In Class 10 Mr. Cuthell was first for six Teas. In Class 6, for twelve varieties, Mr. Stone was awarded first prize for E. Y. Teas, Edouard Morren, Madame Clemence Joigneaux, François Michelon, Dr. Hogg, Charles Lefebvre, Marie Finger, Mrs. Baker, Marie Baumann, and Baronne de Rothschild. This box was also awarded the gold medal of the National Rose Society for the best box in the Show. In Class 10, for six Teas or Noisettes, the first prize was awarded to Mr. E. C. Cuthell for Marie Van Houtte, Caroline Kuster, Anna Ollivier, Jean Dueher, and two others. The silver medal for the best Hybrid Perpetual was awarded to Mr. A. J. Waterton, and for the best Tea or Noisette to Mr. T. C. Pawle. The first prize for anyone who had not obtained a prize before at the Reigate Show was awarded to Mr. Barrett. Three very pretty baskets of the latter, introduced by Mr. Geo. Paul at the National Rose Society, were exhibited, the first prize going to Miss Sargent, the second to Miss Baker. Some charming boxes of Teas and Noisettes were exhibited by Mr. Prince of Oxford, and were greatly admired.

I have only been able to indicate a few of the principal prizes; indeed, it is very hard to get away from the genial hospitality of the Reigate folk, who are so well known for their kindness. The Exhibition was held in two tents in the delightful grounds of Mr. Heywood, the President of the Society, and everything was done to make the day an agreeable one to the visitors, and the day being a lovely one the grounds looked perfection. The season was against the exhibitors, or there would have been, from the number of good Rose-growers in the neighbourhood and from the experience of former years, a very excellent Show; as it was, the introduction of the class for seventy-two's was a novelty, which excited so much interest that the gardener of one enthusiastic rosarian had to telegraph who was the conqueror.—D., Deal.

### CODONOPSIS.

THE Codonopsis, which now includes the genus Gossocomia, by which the species *C. ovata* has been known in gardens, are, I believe, confined to the mountains of the Himalayas. It is closely allied on the one hand to Campanumcea, a small genus confined to Java, and discovered by M. Blume; and on the other to the genus Canarina, found only in the Canary Islands. In form and habit of growth, with the exception of the drooping flowers, it closely imitates our well-known *Platycodon grandiflorum*. The genus is small, including not more than six really good and useful garden plants. It is to be regretted that only two of the species are in general cultivation in our gardens. Like most of the Himalayan plants, they require a semi-shady situation and a fair amount of moisture during the growing season for their development. The soil should be light, with a small admixture of peat.

*C. ovata* is a plant well adapted for either flower border or rockery. Bushy in habit, it seldom attains more than 18 inches in height. The stems are slender, straggling, and well clothed with oval-shaped bluish-green leaves, terminating with numerous drooping bell-shaped flowers, much the same colour on the outside as the *Platycodon*. In the inside the colours are various. The stamens rise from the base of the style, and between each one on small receptacles bright clear globules are nearly always present. The smell, although not repugnant, is anything but sweet. It flowers from June to August, and ripens seed freely in dry seasons.

*C. rotundifolia*, known also as *C. lurida*, is a very handsome climbing or trailing plant of singular merit for rockwork or for draping tree stumps, &c. The shoots grow from 6 to 8 feet long. The leaves are nearly round, and the whole plant is covered with long rigid hairs. The flowers droop, as in the above, are much larger, cup-shaped, with the tips of the corolla divisions recurved. They are of a dull greenish colour outside, but brighter inside. It flowers from July to September.—M. S.

### RICHMOND SHOW.

JUNE 26TH.

FAVoured by extremely fine weather the annual horticultural Show at Richmond was held in the Old Deer Park on Thursday last, the exhibits



both in numbers and quality fully maintaining the good name this Society has gained in the neighbourhood of London. It is in all respects the best of the local exhibitions within equal distance of the metropolis, and under the guidance of its present energetic and courteous Secretary, Mr. J. H. Ford, it is likely to still further increase in importance. Plants and flowers were remarkably well shown, but the fruit classes were poorly filled, and in several instances, as at other shows this season, the exhibits were quite second-rate in quality. Four large marquees were filled, one being devoted to cut flowers, amongst which Roses predominated, stands of flowers, bouquets, and other floral decorations. The next was filled with groups and collections of stove and greenhouse plants, fine-foliage plants, Orchids, Pelargoniums, and Ferns. A third contained the fruit and vegetables; the fourth being appropriated to the cottagers' produce, and the competition for some of the special prizes. The arrangements throughout were very satisfactory, the Secretary being ably assisted by a good Committee, amongst whom Messrs. W. Bates, W. Bowell, Kinghorn, and G. Nicholson merit especial commendation.

Stove and greenhouse plants formed a good display in the principal marquee, three collections of nine specimens being entered. Messrs. Jackson and Son, Kingston, were first with healthy plants, the most notable of which were *Epacris Eclipse*, glohular in form, about 6 feet in diameter and well flowered; *Allamanda cathartica*, *Franciscea calycina*, and *Pimelea spectabilis*. Mr. H. James, Castle Nursery, Lower Norwood, was a close second, his *Anthurium Andreanum* and *Erica depressa* being effective plants. G. Bell, Esq., Garbrand Hall, Ewell (gardener, Mr. Child), followed with specimens which have already figured prominently at several London shows. The special prize offered by F. Colman, Esq., Cumberland House, Kew, for the best specimen plant in flower was also gained by Mr. Child, who had *Erica depressa* in first-rate condition, very closely followed by Miss Evans, Beech House, New Hampton (gardener, Mr. Bond), with *Bougainvillea glabra* trained in glohular form, and bearing a profusion of unusually richly coloured flowers. Pelargoniums were an attractive portion of the Exhibition, and formed a beautiful hank at the entrance to the large marquee. All the plants were remarkably well flowered healthy specimens, and some of them have been seen at several London shows this season. For six Show varieties H. Little, Esq., Hillingdon Place, Uxbridge, was first with good specimens, followed by Mr. C. Turner, Slough, and W. Clay, Esq., Kingston (gardener, Mr. Wiggins). In the corresponding class for six Fancy varieties Mr. Turner was the most successful exhibitor, his plants being in charmingly fresh condition, Messrs. Little and Clay securing the second and third prizes. Mr. Bond had the best Zonal Pelargoniums, which were flowering profusely, but several other collections in this class were rather poor. Fuchsias were not extensively shown, but the premier collection of six from Mr. Bond were very handsome and well-flowered specimens after the style of those for which the west of England growers are so justly famed.

Orchids were rather more largely represented than is usual at this Show, three good collections of six being staged. Mr. H. James, Norwood, won the chief position with large showy specimens, comprising *Cattleyas Mossiae* and *Mendeli* in good condition, *Dendrobium suavisimum* with twelve spikes, *Masdevallia Harryana* with thirty-six flowers, *Epidendrum vitellinum majus*, and *Cypripedium Stonei*. Mr. Child was a very close second with admirably grown genuine specimens of *Aerides Lohli*, *Stanhopea tigrina superba*, and *Vanda suavis* amongst others. Mr. H. Little took the third place, his best plants being *Cypripedium Veitchii* and *Odontoglossum crispum*.

Fine-foliage plants were strongly shown, several collections being of more than ordinary merit. Particularly noteworthy were the Ferns in the class for eight plants, in which J. S. Rutter, Esq., The Cedars, Richmond (gardener, Mr. Morrell), won the leading honours with most creditable examples of good culture. *Davallia Mooreana* was in vigorous health, as fresh as could be desired; *Adiantum farleyense* was similarly clean and strong, *Microlepia hirta cristata* in fine condition; *Dicksonia davallioides*, a very graceful Fern seldom exhibited; *Blechnum corcovadense*, *Cheilanthes cordifolia* in excellent condition, and two beautiful *Gymnogrammas*, one a gold-coloured seedling with very large and handsomely coloured fronds, and the other *peruviana argyrophylla*, a compact plant with sturdy well-developed fronds copiously dusted with silver farina. Though these plants were not of the enormous dimensions sometimes distinguishing exhibition Ferns, they formed as clean and good a collection as could be wished. Messrs. Fromow & Co., Turnham Green, were placed second, *Devallia bullata* and *Hypolepis repens* being the best of their plants. E. M. Nelson, Esq., Hanger Hill House, Ealing (gardener, Mr. Chadwick) was third with healthy plants, *Lygodium scandens*, of glohular form and very healthy, attracting much attention. For six Ferns Mr. Morrell gained premier honours, his examples of *Davallia Mooreana* and *Adiantum farleyense* meriting notice, as did also his twelve hardy Ferns, which won the first place in their class, all of which indicated the same good culture as the previously mentioned Ferns from The Cedars. A class was provided for nine Palms; Mr. Bates, The Gardens, Poulet Lodge, Twickenham, securing chief honours with admirable specimens of *Areca Verschaffelti*, *Cocos Weddelliana*, *Phoenix rupicola*, *Geonoma gracilis*, *Kentia Belmoreana*, and *Calyptronoma Swartzii*. Mr. Brown followed with healthy plants. The best six fine-foliage plants were from Mr. Munro, which included some well-grown *Dracaenas*, *Crotons*, and Palms. Mr. Chadwick, who was second, also had a fine *Alocasia Veitchii* and *Croton angustifolius*. Messrs. Hooper & Co.'s third-prize group including *Croton Weismanni* finely coloured. Mr. Kinghorn of Richmond offered prizes for the best specimen fine-foliage plant, the premier award being secured by Mr. Bond for *Pandanus Veitchii*, a large, vigorous, and handsome specimen. Mr. Chadwick was second with *Livistonia borbonica* in good condition; a well-grown *Cycas revoluta* from Mr. Bates, and a large *Phormium tenax variegata* from Mr. Child being unnoticed, though in the opinion of several they both deserved recognition.

Groups of plants are invariably a great attraction at the Richmond Show, and this occasion was no exception to the rule. The principal class was for a group not to exceed 100 square feet, in which there were five competitors. Mr. Bruckham, manager to Messrs. Hooper & Co., Twickenham, took the lead with a graceful, light, and effective group, containing a due proportion of foliage and flowers, the Tuberous Begonias rendering it very bright. Messrs. Fromow & Son, Turnham Green, were second with a pretty arrangement of *Gladiolus Colvilli*, *Odontoglossums*, with Palms, Ferns, and a few other foliage plants. Mr. H. James had several good Orchids in his third group, which was a trifle too heavy; and an extra prize

was adjudged to Mr. Brown, St. Mary's Grove, Richmond, for a bright but slightly crowded collection. Special prizes were in addition offered by C. Turner White, Esq., Kew, for groups not exceeding 50 square feet, and for these there were four competitors, premier honours being secured by F. Wigan, Esq., Clare Lawn, East Sheen (gardener, Mr. East), a fine central plant of *Cattleya gigas* being much admired, *Dieffenbachias*, *Dracaenas*, and *Odontoglossum vexillarium* being the other chief features in his group. J. R. Gears, Esq., Hatfield House, Twickenham (gardener, G. Fittell), was second with a compact but rather heavy arrangement, but having a neat margin of *Gloxinias*, small *Cockscombs*, and *Isolepis*. Mr. Chadwick was third, his group consisting chiefly of Pelargoniums and foliage plants.

In miscellaneous smaller classes for Mignonette, Achimenes, Tuberous Begonias, Hydrangeas, Gloxinias, and Coleuses, all of which were well shown, the leading prizes were secured by A. Chancellor, Esq., The Retreat, Richmond (gardener, Mr. G. Hughes); J. J. Flack, Esq., Hampton Road, Twickenham (gardener, Mr. Sallons); Mr. Coombs, Mr. Morrell, and Mr. Bond.

Cut flowers were excellently represented, and in the early part of the day were fresh and beautiful, but the heat of the tent was so great that long before the close of the Exhibition many of them had a poor appearance. Roses were capitally shown, but these suffered more than anything from the heat. Mr. C. Turner, Slough, had the best thirty-six Roses, three trusses of each, beautiful, fresh, highly coloured blooms, especially good being *François Louvat*, *Camille Bernardin*, *François Michelin*, A. K. Williams, Ulrich Brunner fils, *Madame Gabriel Luizet*, *Star of Waltham*, and *Souvenir d'Elise*. Messrs. Paul & Son, Cheshunt, were second, also with fine blooms, but they were first with twenty-four triplets, fresh and handsome blooms. The amateurs' productions were not quite of such good substance, but T. B. Haywood, Esq., Woodhatch Lodge (gardener, Mr. Ridout); J. W. Girdleston, Esq., Sunningdale; and J. O. Kitchener, Esq., Manor House, Hampton, showed bright and neat blooms. In the miscellaneous cut-flower classes Mr. Bates, Messrs. Hooper & Co., and Mr. Brown were the prizetakers.

The prizes for three vases of flowers brought no less than nine competitors, their stands differing greatly in merit. First honours were accorded to J. Rains, Esq., Nightingale Lane, Balham (gardener, Mr. W. Clark), for a graceful arrangement of *Etoile d'Or Chrysanthemums*, *Cornflowers*, *Rhodanthes*, *Odontoglossums*, and *Masdevallias*, with a vase of *Roses*, *Eucharises*, and *Ericas*. Miss Curd, 6, Oxford Terrace, Lower Addiscombe, Croydon, secured the second place with a very elegant and tastefully arranged stand, in which *Rhodanthes*, *Cornflowers*, *Aquilegias*, and *Grasses* were freely employed. Mr. Chard, Clapham Common, was third, *Geums*, *Aquilegias*, and *Odontoglossum* flowers being effectively disposed, the stem of the stand being wreathed with the golden-netted *Honeysuckle*. An extra prize was adjudged to Mr. Brown for a pretty stand. The competition was also keen in the class for two stands, bouquets and buttonholes being well shown.

In the fruit tent the tables had a bare appearance, the classes being very poorly filled. Only one collection of six dishes of fruits was entered, for which Mr. Bates secured the chief prize. His Black Hamburgh and Buckland Sweetwater Grapes were fairly ripened, and Stirling Castle Peaches were good in size and colour. The best four dishes of fruits were staged by E. O. Paul, Esq., Cambridge House (gardener, Mr. J. Munro), which included *Melon Best of All*, neat and well-coloured; *Black Hamburgh Grapes*, fair; and *Elruge Nectarines*, fine. T. Cane, Esq., Queenberry House (gardener, Mr. Campin), was second with Dr. Hogg Peaches of good quality. *Black Grapes* were well shown by W. E. Grahame, Esq., Richmond (gardener, Mr. Barnes), and Mr. Bates, who took the prizes for three bunches in that order, both having *Black Hamburgh*. In the white Grape class Mr. Bates was first with *Foster's Seedling*, well ripened; and Mrs. Langworthy, Geys House, Maidenhead, followed with *Cannon Hall Muscat*, green and unsatisfactory. In some other classes Messrs. Barnes, Munro, Campin, and Coombs were the prizetakers. Mr. Bates had the only *Pine Apple*, a good fruit of the *Queen* variety. *Melons* were shown by Mr. East, who was first in the scarlet-flesh class with *Scarlet Premier*. Mr. Morrell obtained a similar position in the green-flesh class with *Bellamore Hybrid*, and Messrs. Munro and East. The *Noblesse Peaches* from E. Ascherson, Esq., Twickenham, were first in their class; large and well coloured *Violette Hâtive* from Mr. Lake equally good, securing a similar place in the *Nectarine* class. *Cucumbers* were very well represented, eight braces being staged. Mr. J. Rooke, The Gardens, Asgill House, won the chief place with *Carter's Model*, even and bearing an excellent bloom, followed by Mr. Smith, Ormond Lodge Gardens, Richmond, with *Improved Telegraph*, and Mr. East with *Duke of Albany*. Messrs. Sutton & Sons' prize for *Melons* was won by Mr. Morrell with *Sutton's Incomparable*, fine well-netted fruits; and Mr. Coombs with *Hero of Lockinge* of capital colour. The same firm's prizes for *Cucumbers* were competed for by six exhibitors, Mr. Fittell being first with *Victory of Manchester*, and Mr. Buckland was second with *Duke of Connaught*, both very good samples, clean and even. Messrs. Carters' prizes for *Model Cucumbers* brought five competitors, Messrs. Buckland, J. Shroud, and Morrell winning the prizes with neat fruits. Mr. Morrell was also the best exhibitor of *Carter's Blenheim Orange Melon*, showing two extremely fine fruits.

Vegetables were of excellent quality, but in moderate numbers. For a collection of nine sorts Mr. Morrell and Mr. Coombs were awarded equal first prizes, Mr. Sallons being first in a smaller class.

Miscellaneous contributions from nurserymen added much to the interest of the Show. Messrs. Paul & Son, Cheshunt, had a pretty group of hardy herbaceous and alpine plants. Messrs. C. Lee & Son, Hammersmith, staged a most effective and beautiful group of hardy shrubs and trees, chiefly of variegated forms, and several boxes of *Rose* blooms; Mr. B. S. Williams, Upper Holloway, contributed a fine group of *Orchids* and new plants; Messrs. Jackson & Son, Kingston, staged a group of stove and greenhouse plants; Mr. C. Turner, Slough, sent collections of *Carnations* and *Picotees*; Mr. Brown had several crosses and wreaths of flowers; and Messrs. J. Veitch and Sons, Chelsea, showed several boxes of magnificent *Rose* blooms.

#### FICARIAS.

To all appearances these plants are true *Ranunculus*. Upon close examination, however, a difference will be found in the construction of



the flowers. The sepals are only three in number and deciduous (instead of five persistent ones), and the number of the petals is always nine. Our native species is frequently called the Small and Lesser Celandine, from which plant, however, it is very distinct. The poet Wordsworth has fallen into this error when he says:—

"Pansies, Lilies, Kingcups, Daisies,  
Let them live upon their praises;  
Long as there's a sun that sets  
Primroses will have their glory;  
Long as there are Violets  
They will have a place in story;  
There's a flower that shall be mine,  
'Tis the little Celandine."

*T. ranunculoides*.—This is one of the very earliest spring flowers, now, however, little cared for by peer or peasant, for wherever it makes a great show the spade of the husbandman comes, a drain is made through its domain, and the little Celandine disappears. This in the present state of high rents and poor crops cannot be wondered at, for the plant spreads rapidly and soon becomes injurious in moist pastures, so that draining is the most effectual plan to improve the land, although a thick dressing of ashes will destroy it, and may be applicable in some cases where it would be very inconvenient to carry a drain. How much the poet loved the plant which he knew by the name of Little Celandine is perceptible in his remarks upon its habits. He says—

"Thou dost show thy pleasant face  
On the moor and in the wood,  
In the lane—there's not a place,  
Howsoever mean it be,  
But 'tis good enough for thee."

Which is just the character of the plant. On every bank, in every hedgerow, on the hill or in the dale, its polished green leaves and golden star-like flowers burst out in all their glory amongst the first harbingers of spring. That so common a plant should be grown in the rock garden can hardly be expected, and yet I would always like to retain sufficient to make a display without injury to other things. But our principal reason for noticing it here is to introduce to notice the double form, *F. ranunculoides flore-pleno*, which, to those who are fond of double flowers, will prove a great treat, both on account of its dwarf habit and brilliant colour. There is also a very much larger form to be found in some collections under the name of *F. grandiflora*, but I am not sure if this is a distinct species or only a change brought about through climatic influence.—X.

### CANTERBURY ROSE SHOW.

JUNE 26TH.

THE energetic Secretaries of the Canterbury and Kent Rose Society are to be congratulated on the success with which they opened the Rose-showing season. The Show, though small, as might be expected at such a time of drought, was marked by brisk competition and excellent Roses. In the all-England class the rivalry of Messrs. Paul & Son, Cheshunt, and Mr. Cant, Colchester, was so keen that there was only one mark between their thirty-six boxes; they therefore obtained equal firsts, Messrs. Kinmont and Kidd being third. For twelve Teas Messrs. Paul were first, Mr. Cant second, and Messrs. Kinmont third.

Amongst the amateurs the Rev. H. Biron's box of twelve was greatly admired, containing Mons. E. Y. Teas, which, but for a perfect and superb Madame Bravy of Mr. Wakeley, would have obtained the National Rose Society's bronze medal as the best bloom in the Show. This box also obtained the silver medal for the best box in the Show, and contained excellent specimens of Duchess of Bedford, Charles Lefebvre, and Mons. E. Y. Teas. Mr. Biron's triplets of Eugène Furst, Xavier Olibo, and Star of Waltham were also of very great merit. Mr. Biron was rivalled, though unsuccessfully, for the silver medal by Mr. Cooper Wachter, whose box of six was of high quality, containing a most remarkable Cloth of Gold. A new form of tube, with a label-holder attached to it, and a wire for holding and supporting blooms, has been patented by Mr. C. Foster of Ashford, and was extensively used at this Show. It is highly spoken of.

The following were the prizetakers:—For eighteen of any variety Messrs. Packham, Wakeley, and West. For twelve of any variety Messrs. Biron, W. Mount, and Packham. For twelve Teas Messrs. Knight, Wakeley, and Packham. For six triplets Messrs. Biron, Wakeley, Packham, and Knight. Extra twelve, any variety, Messrs. Hodgson, Storey, and Lambert. For six Teas Messrs. Hodgson and Storey. For three triplets Messrs. Storey and Lambert. For six of any variety Messrs. Wachter, Hawksworth, and Rolt. For three of any variety Messrs. Dean, Collars, and Rolt. For three of any variety Messrs. Wachter, Dean, Tassell. For six of any variety Messrs. Hodgson, Tassell, and Wachter. For six of one variety Messrs. W. Mount, Collar, and Stonely. Table decoration, Mrs. Biron, Mrs. Wachter, and Mrs. Martin. Buttonhole bouquet, Mrs. Rolt, Mrs. Wachter, Mrs. O. Mount, and Mrs. Knight.

The Judges for the nurserymen were Messrs. T. D. Pawle and Bensted; and for the amateurs Mr. G. Paul and Rev. A. Cheales.

### WEST KENT HORTICULTURAL SOCIETY.

JUNE 28TH.

THOUGH not quite so extensive as some previous exhibitions of this Society, that held on Saturday last in the grounds of Camden House, Chislehurst, was in many respects a satisfactory and successful one. The weather was exceedingly fine, the heat pleasantly tempered by a good breeze, and the charming situation selected for the Show was alone sufficient to attract numbers of visitors. Four large marquees were devoted to the exhibits, those containing the table decorations, the fruit, vegetables, Roses, and hardy flowers being the favourite portions of the Show.

Foliage plants were fairly represented in the class for six specimens,

F. F. Burnaby Atkins, Esq., Halstead Place (gardener, Mr. H. Gibson), winning chief honours with grandly grown specimens of *Alocasia Lowi* about 5 feet high, *Croton Youngi* well coloured, *Anthurium crystallinum*, *Alocasia metallica*, *Thrinax elegans*, and *Dracæna Baptisti*. J. Heritage, Esq., Ladywood, Orpington (gardener, Mr. J. Kent), was second with *Croton angustifolius* and *C. variegatus*, rather old, with bare stems; a *Pandanus Veitchi*, somewhat yellow; a good *Davallia Mooreana*, and a healthy *Maranta zebrina*. Mrs. Spottiswoode, Coombe Bank, Sevenoaks (gardener, Mr. Bolton), was awarded the third prize, but his plants were really deserving of a higher position, as all were healthy, but he made a mistake in showing three Palms in his collection, and this no doubt influenced the Judges in their awards. With six Ferns, however, Mr. Bolton was easily first, staging strongly grown plants of *Davallia bullata*, *Adiantum farleyense*, *Cibotium Barometz*, *Adiantum cardiophyllum*, and *Balanium culcita* with five fine fronds, a noble Fern that is seldom seen at exhibitions. S. Williams, Esq., Bickley (gardener, Mr. T. Gearing), followed with *Adiantum gracillimum* and *Onychium anatum*, very well grown and beautiful. *Caladiums* were in satisfactory condition, three well-grown collections being staged. A. M. Tapp, Esq., The Gables, (gardener, Mr. R. Jeal), won chief honours with a specimen of *argyrites*, 3 feet in diameter, beautifully variegated; Beethoven and Prince Albert Edward being other notable varieties. Messrs. Blackburn and W. Gammon secured the second and third places with smaller but well-coloured plants. *Selaginellas*, hardy Ferns, foliage *Begonias*, *Coleuses*, and *Dracænas* were all fairly represented, the principal prizetakers being Messrs. Neighbour, Cooper, Spittles, Jeal, Gearing, and Kent.

Of flowering plants *Tuberous Begonias* were the best shown, six good collections of half a dozen plants being staged; especially well grown were those from Mr. Neighbour, The Gardens, Bickley Park, which were compact strong specimens, loaded with handsome flowers. J. Scott, Esq., Bickley (gardener, Mr. J. Stent), and S. Williams, Esq., Bickley (gardener, Mr. T. Gearing), were the other prizetakers, also showing beautiful plants. T. H. Michell, Esq., Elmstead, Bickley (gardener, Mr. Cole), had a good lot of double *Pelargoniums*, being first in the class. *Achimenes* were also in creditable condition, Mr. Stent taking the lead amongst four exhibitors with neat even specimens about 3 feet in diameter, Carl Woolforth and Longiflora being remarkably fine. Capt. Pavy, Fairfield (gardener, Mr. Bridger), took the second place, *Ambroise Verschaffelt* being notable, and Mr. Kent was third with smaller but well-flowered plants. *Gloxinias* were in good condition, Mr. Bridger's premier collection comprising several with sixty fine flowers each. Mr. Neighbour, who was second, had fewer flowers, but large and of good form, and exceedingly vigorous foliage.

The groups were not of unusual merit, but Mr. Blackburn gained the first position with a graceful combination of Orchids with Palms, Ferns, and *Gloxinias*. Mr. Gibson was a good second, a central *Araucaria Bidwilli* and several well-grown *Clerodendrons* and *Gloxinias* forming the chief features in the group, Mr. Kent following closely.

Cut flowers were very abundant, the nurserymen's exhibits being of considerable merit, especially the flowers from Messrs. Paul & Son, Cheshunt, who carried off the first prizes both for forty-eight and twenty-four with rich, bright, and handsome samples. Mr. B. R. Cant, Colchester, was second in the forty-eight class, but first with twelve blooms; Messrs. Bunyard & Co., Mount, Canterbury, and F. Cant, Colchester, securing second and third-rate places. The best amateur blooms were from G. Christy, Esq., Buckhurst Hill (gardener, Mr. Blundell), Mr. A. Gibson, and the Rev. J. M. Fuller. Hardy flowers were in strong force and first-rate condition, F. Maynard, Esq., Bickley Park (gardener, Mr. F. Maynard), taking the lead with specimens of a great number of good varieties. Mr. E. Morse, Epsom, also had a large and beautiful collection of hardy flowers. A number of small classes were devoted to *Fuchsias*, *Pelargoniums*, *Antirrhinums*, Sweet Williams, wild flowers, Grasses, &c., all of which were well filled.

The dinner-table decorations were pretty, but not so tasteful as some we have seen at Chislehurst in previous years. Miss Sentance, Merevale, Bickley, was, as usual, the premier exhibitor, yellow and scarlet Poppies, with Grasses and Ferns lightly arranged, constituting the chief part of her stands. The others were of a similar character as regards simplicity of style.

The fruit classes were well represented, Mr. H. Waterman securing the leading position with a collection including good Grapes, Melons, Nectarines, and Cherries. Messrs. Neighbour, Tucker, and Bolton won the principal prizes in the other classes. Messrs. Neighbour and Waterman were also the premier exhibitors of vegetables, the former taking the first position, but the merits of the collections were so close in merit that equal firsts would have been more satisfactory.

Miscellaneous exhibits were not numerous. Mr. B. S. Williams, Upper Holloway, had a handsome group of new and rare plants, including many fine Orchids; and Messrs. Laing & Co., Forest Hill, showed a large group of *Tuberous Begonias* and fine-foliage plants tastefully arranged.

### NOTTINGHAMSHIRE HORTICULTURAL AND BOTANICAL SOCIETY.

THE competition for the prizes of 12s. 6d. and the certificate of the Society, and 7s. 6d. and the certificate of the Society, offered by the Committee of the above Society for the best and second best essay on "The Rotation of Crops in a Kitchen Garden for a Year, with an Illustrative Plan," by under gardener members, did not draw out so many competitors as the importance of the subject led the officers to anticipate. Only two competitors gave in their names, and they both hailed from Mapperley Hall Gardens, near Nottingham, their names being Edward Palmer and William Ball. The competition took place at the Society's room in the Mechanics' Institution on June 11th; Mr. Edward Palmer won the first prize and Mr. William Ball the second. It will be understood that the papers were not to exceed twenty minutes in reading, and Mr. Palmer finished his to a minute. It was an excellent paper all through, the rotation scheme of crops being well managed and clearly shown, and that by means of the essay only, for the reader did not provide the illustrative plan (of course having the plan was optional, though it was thought the writers of the papers would prefer to have one in order to make



clear their course of rotation). Mr. Ball's essay was a very practical paper, but he introduced rather too many subjects, and went more on the principle of planting a new garden than the rotation of crops in an already planted garden. He had a small plan of a garden to show his mode of operations. Both papers were very creditable to the young men, and the unanimous vote of the members present, whose duty it was to decide, went as already indicated. Mr. Bellis of Newstead Abbey Gardens was in the chair, and spoke on the importance of the closer study by young gardeners of the management of the kitchen garden.

On the 23rd June the ordinary monthly meeting was held in the Society's room at the Mechanics' Institution. Mr. George Fellowes, J.P., of Beeston Fields, presided. There was a large attendance of members, and a few of them, notably the Messrs. Pearson and Mr. Meadows, brought some very interesting specimens of cut flowers, and Mr. Meadows a well-flowered specimen of *Odontoglossum vexillarium*. The prizes and certificates won on June 11th were presented by the Chairman with a few hearty words of encouragement addressed to each recipient. Mr. J. J. Ogle, of the Nottingham Naturalists' Society, then gave an address on "Fertilisation, and How it is Helped by Insects." The address was a model one, being short, with much matter compressed into the fewest words; those words the simplest and clearest, and spoken with that attractiveness as to catch the attention of the hearers and keep it from first to last. The address was illustrated by diagrams, showing in magnified form the parts of flowers which are concerned in the work of reproduction. It was decided on all hands that it was the most interesting address that had been delivered before the Society.

There is a desire on the part of the officers of the Notts Horticultural and Botanical Society to fraternise with the Naturalists' Society, and as the officers of the Naturalists' Society are likewise willing, this is only the beginning of what may result in many useful evenings to the advantage of the members of both Societies. It is quite clear that the one can help the other largely.—N. H. POWNALL.

### COMING FLOWER SHOWS.

EXHIBITIONS are as numerous as ever, the following being those for July, August, and September, of which we have received any notification at present:—

- July 3rd.—Bury St. Edmunds. Winchester (two days). Bath (Roses). Chiswick. Farnham (Roses).
- " 4th.—Sutton (Roses). Tunbridge Wells.
- " 5th.—Crystal Palace (Roses).
- " 7th.—Brockham (Roses).
- " 8th.—Royal Horticultural Society, Fruit and Floral Committees; Promenade Show. Evesham (Roses).
- " 9th.—Edinburgh (two days). Salisbury (Roses). Lee (two days). Carrington (two days).
- " 10th.—Oxford (Roses).
- " 14th.—Wolverhampton (three days).
- " 16th.—Bedford.
- " 17th.—Carlisle (two days). Warkworth (Roses). Newport.
- " 19th.—Manchester (Roses).
- " 22nd.—Royal Horticultural Society, Fruit and Floral Committees; Fruit and Vegetable Show; Carnation and Picotee Show.
- " 23rd.—Newcastle-on-Tyne (three days). Feltham.
- " 24th.—Sheffield (two days).
- " 30th.—Warwick.
- August 2nd.—Liverpool (two days). Southampton (two days).
- " 12th.—Royal Horticultural Society, Fruit and Floral Committees; Cottagers' Show.
- " 14th.—Maidenhead.
- " 20th.—Shrewsbury (two days).
- " 21st.—Reading.
- " 26th.—Royal Horticultural Society, Fruit and Floral Committees; Fruit and Vegetable Show. Banbury.
- September 2nd.—Stratford-on-Avon (two days).
- " 3rd.—Glasgow. Bath (two days).
- " 5th.—Crystal Palace Fruit and Dahlias (two days).
- " 9th.—Royal Horticultural Society, Fruit and Floral Committees.
- " 11th.—Bury St. Edmunds (two days). Dundee International (three days).
- " 17th.—Edinburgh (two days).
- " 23rd.—Royal Horticultural Society, Fruit and Floral Committees; Fruit and Vegetable Show.



### KITCHEN GARDEN.

ALL vegetables are now coming in freely, and the kitchen can easily be supplied. Still, it is well to look forward and see that no defects are likely to occur, as a full and constant supply will alone give satisfaction, and it should be the object of all to secure this as far as their means will allow.

**Kidney Beans.**—The last sowing of these should be made. As a dwarf variety sow Canadian Wonder, and the runner may be Carter's Champion. Sow both in good soil on a south border, where they will be fully exposed to the sun and be benefited by shelter late in autumn. Kidney Beans, when they are to be had very late in autumn, are always much valued, and it is well worth anyone's while trying to have a quantity of them. Stake runners requiring support, and if it is desired to have them

in fruit as soon as possible take the point from each stem as soon as a number of flower clusters are formed. Dwarf Beans now bearing heavily may show signs of falling to one side, and if they do this many of the plants will be spoiled and checked, but a few short twigs of birch put in along each side of the row will prevent this.

**Celery.**—Finish the planting of this important crop for the winter supply, and late plants for putting out in August for late spring use, which are now in the nursery quarters, must not be allowed to be crowded. Give the advanced plants in trenches thorough drenchings of water when necessary, and do not let weeds take possession of the surrounding soil. Large plants for early autumn use or exhibition now require careful earthing up, but on no account allow any of the soil to fall into the centres of the plants. In wormy soil a dusting of soot, lime, or salt thrown about the plants will be found a great help in warding off the attacks of these unwelcome visitors.

**Tomatoes.**—In cool houses these are now beautiful to look at and exquisite on the table, but the only way to make plants bear from the beginning to the end of the season is to crop moderately, feed well, and stop and train carefully. As the lower fruits ripen and are cut off let the top extend and more form. Never encourage the production of superfluous growths. Thin off deformed fruits when quite small, and only allow the best to develop. Plants out of doors are now growing rapidly, and they require going over twice weekly to stop and train the shoots, but they should have no liquid manure until plenty of fruits are visible.

**Egg Plants.**—Now that frames are empty these may be placed in them, and a dozen or two of plants will be found to be a very useful addition to the choice vegetable supply. They fruit freely and well in 8-inch pots, and, besides liking a rich soil, they also delight in having plenty of liquid manure when the roots fill the pots. They are liable to be attacked by aphides, and the most important of their requirements in summer is to keep them free from these by syringing and fumigating.

**Cauliflowers.**—Many of these have now been cut, and the ground freed from them should at once be filled up with other crops. Do not allow any which have flowered and are not required for seed to remain in the ground, as they are occupying space and drawing nourishment which might be devoted to more promising crops. Finish planting all Cauliflowers, and if a good batch of Veitch's Autumn Giant is put in at once they will furnish many useful heads in November, and early sorts would come in before that time.

**Cabbages and Coleworts.**—These may be put out too, as Cabbages planted now will give a good supply in late autumn, and the Coleworts will be later still. We always plant a good batch of Cabbage at this time, and find them so useful that we recommend the system to be generally adopted. In small gardens, where most of the vegetables are consumed in the dining-room, it may be said that Cabbages are too common for use as long as anything else can be had, but where many servants have to be supplied daily Cabbages are a most useful vegetable.

**Spinach.**—The smooth-seeded variety should still be sown once a fortnight. Much of the early sowings has flowered and is useless, and it should be cleared off at once. Some cut their Spinach with a scythe when it runs to flower in the hope that fresh growth will come again, but this crop is never half so profitable as the first gatherings from seedlings.

### FRUIT-FORCING.

**VINES.—Early Houses.**—See that the inside borders do not become dry after the Grapes are cut, and keep the surface mulched, but avoid forcing the laterals into vigorous growth by stimulating the roots by an excess of moisture after the wood is ripe. Ventilate to the fullest extent, and syringe occasionally to keep the foliage free from dust and red spider.

**Midseason Houses.**—Houses in which the Grapes are beginning to colour may now have the ventilators constantly open; even in the dullest weather they should be open a little at the top and bottom so as to secure a circulation of air, damping the borders and other available surfaces occasionally to prevent the atmosphere becoming too dry, which only encourages the spread of red spider and injures the Vines at a time when their energies are severely taxed. See that the borders are moist. If they have a good soaking of tepid liquid manure when the berries change colour and are mulched it will mostly be sufficient to finish the Grapes well, but should the border become dry when the Grapes are advanced in ripening water may be given without detriment providing it is done in the early part of the day, and the house is freely ventilated; a fine day being selected so as to allow of the superfluous moisture passing off before the ventilation is reduced.

**Late Houses.**—Late Grapes should be examined again for the last time in thinning, and if there is any probability of the berries being crowded the smallest must be removed. Owing to the prolonged drought outside borders as well as inside borders will need thorough soakings at least fortnightly of water in a tepid state, and mulching the surface with good manure will keep the roots active. Vines that are carrying heavy crops will need some stimulating food, but it must not be applied in too powerful doses, and always in a tepid state. To prevent scalding in Lady Downe's and Muscats a rather warm night temperature with decreased atmospheric moisture and abundance of air by day is the best remedy. It is not sound economy to discontinue fire heat until the Grapes have safely passed the stoning process, when the danger from scalding is over; then fire heat may be economised by closing early enough to run the temperature up to 90° on fine afternoons. Be careful to admit a little



air very early in the morning so as to prevent scorching, and in most cases it is advisable to leave a little on constantly. Pay careful attention to the regulation of the laterals and young growths, adopting the extension principle where there is room for laying in without crowding, it being important that the foliage have full exposure to light. Keep all gross laterals stopped as necessary, so as to give an even flow of sap into all parts alike of the Vines.

*Young and Pot Vines.*—Young Vines intended for fruiting next season that have made their wood, but have to ripen and consolidate it, will require a free circulation of air with a little fire heat if the weather be wet and cold. Remove the laterals from the buds intended to give fruit next season, carefully preserving the old leaves, allowing the growth at the extremities to continue for the present. Pot Vines intended for early forcing will have ripened up the growths and plumped the buds, and should be placed into a cool airy house, protecting the pots with canvas wrapped round the outside to keep them cool and prevent the sun heating the sides and destroying the roots.

*CHERRY HOUSE.*—The crop of fruit being gathered, the next object is the proper development of the buds for next season, to attain which it is essential that the foliage be kept free of insects, washing them thoroughly with water from the syringe or engine daily in fine weather, but in dull weather it will not be necessary to repeat it so frequently. Ventilate to the fullest extent for the present, but the lights must not be removed until the buds are plumped and the wood ripe. Examine the border, and if it needs water give a thorough supply, as from the frequent syringing the surface may be sufficiently moist, whilst lower down the soil may be too dry and the trees suffer in consequence. Trees in pots may as soon as they are cleared of the fruit be placed outdoors on a bed of ashes, the situation being a sunny one, and they will only need water at the roots and syringing occasionally to keep them free from insects.

*PINES.*—Natural advantages in the way of sunshine and heat should be made available as far as practicable in connection with the cultivation of these plants, so that artificial means should only be used as auxiliary. In the case of fruiting plants fire heat should be dispensed with if the night temperature stand at 70°, and it will not be needed in other departments where the young plants are located where 60° is assured. These may appear small matters, but they play an important part in fruit culture, especially Pine cultivation, as much depends upon making the most of natural advantages between this and October. The main supply of the fruit will by this time be cut from the most forward of the summer-fruiting plants, and at an early date the suckers, which if but one has been left to each plant will be strong, and should be taken off and potted without further delay in a compost of good prepared turfy loam in properly drained pots of 5 to 7 inches in diameter, according to the strength of the suckers, and be at once plunged in a fermenting bed having a temperature of 80° to 90° at 6 inches from the surface, a pit or house having a moist atmosphere being most suitable. Shade from sun, but the shading must not be of a fixed character, yet it must be effectual during powerful sunshine, and should be continued for about a fortnight, after which the suckers will have rooted and growth be proceeding vigorously, after which no shade will be necessary, or only a little from very powerful sun. The suckers should be watered at the time of potting. Keep the pit or house damp by sprinkling.

The general management of other plants will comprise attention to watering, shading, syringing, and ventilating the structures, the latter operation needing to have prompt attention by opening early to dispel damp from the plants before the sun shines very powerfully upon them, closing early and syringing. Water judiciously, examining the plants twice a week, and when it is found necessary afford it abundantly.

*CUCUMBERS.*—Attend regularly to the stopping, thinning, tying, and regulation of the shoots, and any plants showing signs of exhaustion should have the bed well surface-dressed with an admixture of thoroughly decomposed dung and loam, and the whole well watered with tepid water, and then mulch with 2 or 3 inches thickness of short manure, keeping the house or pit at a good temperature. Syringe the plants twice a day in bright weather, and always with water a few degrees warmer than that of the house. With a discontinuance of fire heat less atmospheric moisture will be needed, and it must be regulated according to external influences, as with an excess of moisture it is probable mildew will appear. Pits or frames heated by fermenting materials that have been cleared of Melons may be planted with Cucumbers, a very slight renovation of the beds only being necessary, and these plants will make a good succession to those in bearing. From pits or frames so planted, Cucumbers can be cut in a few weeks, and up to Christmas by attending to the linings when the weather becomes cold in autumn.

#### PLANT HOUSES.

*Chrysanthemums.*—There is no better plant in cultivation for conservatory and other forms of decoration than *C. coronarium flore-pleno*, with its perfectly double bright yellow flowers. It is a perfect gem in from 3 to 6-inch pots. Its dwarf habit and free-blooming qualities will doubtless bring it into the foremost rank as a summer decorative plant. It is easy of culture, and after cuttings are once rooted they should be brought forward under cool treatment. They will not be satisfactory if grown in a close confined atmosphere. At this season of the year they should be grown in a cold frame with the lights thrown off during the day, or plunged outside after they are established in the pots in which they are intended to flower. If cuttings are rooted now and grown under the treatment directed they will be found valuable when they flower. The cuttings root freely at any season of the year under

a handlight or bellglass in a little heat; at present they can be rooted in a shady corner of the greenhouse. Insert the cuttings singly in sandy soil in small pots.

*Chrysanthemums* such as Elaine, James Salter, Peter the Great, Early Red Dragon, Mrs. Dixon, Mrs. G. Rundle, Beverley, Sœur Melanie, and others, if rooted in small pots without further delay are very useful for flowering in 5-inch pots up to Christmas, or if strong cuttings are rooted of Princess of Teck, until February. The cuttings should be strong and rooted singly in small pots, and afterwards transferred into the size mentioned. These plants should be grown upright, removing all the side shoots as they appear. One or two flowers only should be taken from the top of each. Plants of this description are invaluable for standing above other dwarf flowering plants during the autumn and winter.

*Rhodanthe Manglesii.*—This is one of the most effective annuals that can be grown in pots. During the early summer months it is sent into the market in very large numbers, but in private gardens it is seldom met with. It is easy of cultivation, and lasts for a long time in good condition. If seed of this is sown with its white form alba in 5-inch pots at once, the plants obtained will be found very useful at a time when Rhodanthes are not generally seen. The pots should be moderately well drained, then filled with light rich soil, and the seed sown upon the surface and lightly covered with fine soil. After watering place in a frame and keep close and shaded until the seed germinates, when they should be gradually hardened and plunged outside, where they can remain until they flower. While outside syringe twice daily, and be careful that the plants do not suffer from an insufficient supply of water. Aphides are their worst enemy; if they become infested remove them under cover and fumigate with tobacco smoke.

*Primulas.*—If seed was sown and the young plants treated as previously directed, they will be strong specimens in small pots, and subject to cold frame treatment. Their pots will be full of roots by this time, and ready for transferring into 5-inch pots, which is large enough for all decorative purposes. Drain the pots liberally in which they are to be placed, and pot them deeply; the small lower leaves may be removed, and the collar of the plants buried to their large foliage. It is a mistake to have them loose at the collar when grown, for they are more liable to damp during the winter.

Young stock now in pans, and intended for later flowering, should be placed into 3-inch pots. Keep the frame in which these plants are after potting close until they commence rooting in the new soil. Shade from strong sun, or the plants will be injured if it shines upon them with full force.

Double varieties that have been earthed-up to induce them to root from the collar should now be turned out of their pots and cut through with a sharp knife. Some of the old soil should be worked carefully from amongst their roots, and the plants repotted in as small pots as possible, according to their size. After potting, keep the plants well shaded in a close moist atmosphere until they commence rooting afresh, when they may be hardened and subjected to the same treatment as the single forms.

## THE BEE-KEEPER.

### FOREIGN BEES—PROLIFIC QUEENS—A FRAME HIVE.

THE many failures with foreign varieties of bees is in my opinion owing to improper management, or not understanding their habits and natural history. Many bee-keepers are misled by assumption. As "a little learning is a dangerous thing," so is a little knowledge in apiculture, and is fraught with much mischief and expense to others, which would be avoided did they but consult someone of experience and candour. Regarding Ligurian bees, which I will first mention, I have at this moment information from two different persons who were supplied with Ligurian queens by Messrs. Neighbour last autumn. In both instances these are far in advance of what are said to be the common variety, and promising to give great returns, which fully corroborates my own experience when these bees are properly managed and a fair trial given. One thing I would urge on importers of foreign bees is that no queen should be accepted from raisers nor sent out to bee-keepers that did not measure on the field under a microscope a certain size. This would secure to the purchaser a better chance of being supplied with a perfect queen, and discard from the market those worthless small artificial-raised ones whose powers of productiveness are often very limited, and therefore cannot give satisfaction as a medium or full-sized queen may be expected to do. The word "prolific" with queens has a wide meaning, and is a question of very great importance in apiculture, particularly so with the foreign varieties. All queens may be said to be prolific, but it is the prolificness which affects the interests of bee-keepers that we have to study. Some writers on bees tell us that by doing certain things they cheat the bees and queen. I have not



s'udied the physiology of the bee enough to enable me to say whether bees can be duped. I know that when they are provided at a considerable cost with dwellings they appear to have an idea that it is proper to resent any intrusion on their stores, and do not seem to think they are at all indebted to us for all the care we have over them.

When the Ligurian bee was first introduced I found they possessed all the good qualities they were represented to have, amongst them that of great prolificness. Amongst the first questions I put to myself, "Is this prolificness enduring?" I had to wait with patience for some years before I was assured of this, as I then had queens which were in my possession for six years or seven seasons before they were deposed. This was gratifying, as it gave hopes and courage to persevere with a race of bees of so great promise and properties. In the interim, however, I had many mishaps of queen-introduction, but which were not altogether loss, as on dissection I found even in but small queens large well-filled sperm sacs equal to those of large-sized queens of the common race. The next question was whether the ovum would be produced in a ratio equal to fecundated matter. The term of years these queens lived and produced eggs was the answer to the last question.

Next came the Carniolian queens, possessing the same properties, with an additional one of extra hardiness and tenacity of life, and possessing great powers of flight. The Cyprians and Syrians followed. The latter I never proved beyond that the workers were very active, as one of the queens was stung while caged in consequence of two queens having been in the hive unknown to me. The second was unfertilised, and the third died of hunger. The bees, having nestled at a point furthest from the honey, were unable to reach it during cold weather; hence the whole succumbed, leaving me with only the Cyprians, which, through Mr. Alfred Neighbour, I had had since 1876. These bees at once showed traits in their character different from others. Their fastidiousness regarding the sanitation of their dwelling, together with their pugnacity to stranger bees, was very apparent, while the great prolificness of the queen and compactness of the brood could not pass unobserved. This was all satisfactory, but not so when I found the sperm sac smaller than the Ligurian and Carniolian. I then dreaded the early deposition of these queens, which is as likely to occur at a season when the loss would be irreparable as at the beginning of the honey season, the most favourable time for the loss of a queen, queen-rearing, and fertilisation. The unenduring character of the Cyprian queen has been proved this season by the loss of two Cyprian queens, one only eleven months old; and though she has been wonderfully prolific and her progeny extraordinary workers, on dissection I found her sperm sac not wholly but almost exhausted. The other one is a queen two years and eight months old, and has never produced more bees during that time than would be an ordinary swarm, having been kept as nuclei. This queen, though not killed, ceased laying workers in April last, and produces nothing but drones now. I have other evidence that, though the Cyprians are very prolific, it seems that some of them are not enduring: it therefore becomes not only advisable but imperative that bee-keepers should not depend upon Cyprian queens other than young ones. Their early-failing fertility is the cause of Cyprian queens being so often and early deposed.

It will never be known how many eggs a queen can lay and how many she can fertilise, because at all seasons many eggs are destroyed, particularly so when bees are stimulated to breed after August. This is a cogent reason why bees should never be fed after that time, as it impairs the queen so much that she may be deposed in March or April, which, had she been allowed her rest in the autumn, might have lived until May or June, a time her loss would have been repairable. Prolific queens, with proper hives, and a thorough knowledge of the former and proper management of the latter, insures the success and profit of bee-keepers.

I have often recommended the Stewarton hive as the best hive for producing the finest and greatest quantity of honey. So thoroughly convinced am I of this that it will take more than words from the novice to alter my conviction of the fact. Some object to the Stewarton because, though the bars and frames are moveable, they are not interchangeable—a very little fault. To meet these objections and serve my own purposes I contrived and made a hive on the Woodbury compound frame principle, which I consider is the best form a hive can be so far as saving of bee life and profit is concerned, with more advantages than can be found in any other frame hive. Certain bee-keepers who use shallow broad hives tell us that the bees store their honey in the lower cells and carry it up during the night, which is questionable, and which the bees themselves disprove, as, if watched and marked when entering the hive, will be observed depositing their load of honey in the highest super. With shallow broad hives bees often die during winter, because of the bees and honey being separated, while the extreme sides and corners are always damper and colder in wide hives than in narrow ones; then

the honey in broad hives draws damp and is spoiled, injuring the bees. That is not the case with narrow hives. Then in narrow hives supers are purer and more quickly filled than those on wide and shallow hives, while robbers do not gain an entrance so readily, nor does the glare of the sun during the winter months strike the bees so strongly as in shallow hives, and when breeding commences there is no danger of the brood being chilled. Less food is consumed by the bees at all seasons in narrow hives than in broad ones, which keeps the bees more quiescent, and consequently more healthy.

The hive I refer to is approved of by all who see it or that give it a trial, and it was awarded two silver medals in 1880 as extra prizes at the Caledonian Society in connection with the Highland and Agricultural Society. To avoid the tiering system and give the bee-keeper full control of his hive without removing an upper box before reaching the bottom one, and to prevent the combs collapsing during heat and in transit, I made the frame inside measure 17 inches deep by 12 inches wide, dividing the former space by an intermediate bar. Thus there are two spaces 12 by 8½. The top bar and under one are the same length, so that they will interchange with one another. The bottom rail of the frame is all that holds it together, which is half an inch square. The ears of the frame are seven-eighths square, which allows them to be firmly nailed and checked so as to form the quarter space at the ends of the frames. A flat staple, the one end passed into the ear and the other into the bar, prevents the frame spreading, holding it rigid and the bar secure in its place. The staple is sunk level, so as to allow the lateral slide to work freely. This is the most simple and cheapest hive made, while the many advantages it possesses over others make it the best frame hive. In addition to the advantages named the overloaded combs at the top can be removed without encroaching on the empty ones or those containing pollen or young bees, while for queen-rearing it is all that can be desired. The little space it occupies is also of great moment when in transit. Such a hive may either be double or single-walled to suit bee-keeper's accommodation. The number of frames of the above size need not be more than eight, so that by allowing half an inch at each side more than the frame requires to insure the comb being extended and honey stored in the outside of outside frame, which is often not done in hives when the frame is too close to the side or divider, will measure 12½ inside, the space between the inner and outer case well filled with some non-conducting material. Have the floor of perforated zinc, the top of the frames covered with meadow hay or straw, which is preferable to woollen cloths during winter, and a piece of corrugated iron as a roof, which allows a free current over the covering and insures perfect dryness, is cheap and lasting.—A LANARKSHIRE BEE KEEPER.



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Address (J. A. H.).—The address you require is H. S. Holmes Pegler, Esq., Hemel Hempstead.

Topping Scarlet Runners (J. L.).—We cannot tell you "how many times" you should cut off the twiners. The rows you say are 3 feet apart; walk between them as often as you see a tendency of the plants reaching across the space, and with a sharp hand-hook prevent them intertwining. That is all you have to do, and it should be done, as if the rows are permitted to grow together the result will not be satisfactory.

The Celery Maggot (H. G. B.).—If syringing the plants every evening with a mixture of petroleum and soapsuds will not prevent the attacks of the Celery fly, we do not know what will. Half a wineglassful or a little more of the oil to each gallon of the soap solution will be about the right strength to apply. Some persons, we believe, have found rags dipped in



petroleum and suspended over the plants useful. We have also heard that Celery watered regularly with a strong decoction of Elder leaves is seldom attacked. If any of our readers can state a method which they have found effectual in dealing with the pest in question we shall be glad to hear from them.

**Double White Abutilon** (*Mr. Taylor*).—Although we have never seen a similar example of prolificness in the Abutilon before, it is a character occasionally developed by many flowers, but not always fixed and perpetuated.

**Cinerarias Dying** (*Mrs. Davies*).—We cannot understand Cinerarias "just being put in the flowering pots." It is much too early for the final potting of these plants. A quantity of soot and lime in the frame if dry and the light closed would certainly be injurious to the plants this hot weather. A thick layer of sharp ashes is much better for excluding worms, and is quite safe. Cinerarias cannot be kept too cool in summer. Plants now ready for potting off will be forward enough for most purposes, and we have raised many that have proved very serviceable by sowing the seed in July. The plant enclosed is *Santolina incana*.

**Small Bunches of Grapes** (*H. S.*).—Had you stated when you asked your question what you have now done after it was answered you would have saved us some trouble, and obtained for yourself a more explicit reply. If persons took as much care in asking questions as we do in answering them, it would be more satisfactory to all. There is no doubt whatever that closely pruning the laterals to the weak eyes at the base is the cause of the smaller bunches this year, just as the larger ones last season resulted from pruning to bold eyes some distance from the main rods. Many Vines bear bunches quite large enough when the laterals are closely pruned, and the bunches are usually compact, those resulting from long pruning being generally longer and looser, not infrequently, indeed, too loose. The precise method of pruning to adopt can only be determined by the condition of the Vines and the object of the cultivator.

**Red Spider on Vines** (*Warwick*).—You ask, "What is a safe and certain remedy for destroying red spider on Vines when the berries are colouring?" We reply, Sponging the leaves well with a mixture of soft soap and sulphur. If any of our readers can state a quicker method and equally safe, we will gladly publish it. It is a great mistake not to cleanse the foliage from this pest before colouring commences, and this can usually be done by heavy syringings. We have been growing Vines for a quarter of a century and have never had any serious trouble with red spider.

**Vegetable Marrows not Swelling** (*T. J.*).—You neither intimate whether the plants are stubborn or luxuriant, thinly trained or overcrowded; therefore all we can say is that by their training and keeping the plants growing without receiving any check through insufficient supplies of water we never fail to obtain abundance of fruit. You will find an answer to your other question given in reply to another correspondent.

**Vines Bleeding** (*In a Fix*).—Surely you are not "in a fix" by your Vines bleeding at this period of the year, which would be quite a novel event; but the controversy on the subject, instead of affording you satisfaction, has, presumably, caused you mental disquietude. You ask "What is really the cause of Vines bleeding?" It is the pores of the canes not being sealed before the sap movement is active, and hence this and the water imbibed by the roots escapes instead of being devoted to the extension of growth and expansion of foliage. Thus it is that Vines which bleed freely do not start into growth with the same promptitude that others do from which no escape of sap occurs. When Vines bleed we are of opinion that either the canes have not matured or pruning has been too long deferred. With hard ripe wood pruned early we have never been troubled with any serious escape of sap from our Vines. As to whether bleeding is injurious or not, you had better grow and fruit two Vines in pots, letting them be of similar strength and subjected to similar treatment, pruning one late, so that it bleeds excessively, and the other early, so that it does not bleed at all. We think you will find a difference, and it may be a rather serious one, not in favour of the bleeding Vine.

**Stopping Melons** (*G. B.*).—Your late Melons planted 2 feet asunder will not need topping till they nearly reach the top of the trellis. Provided the plants are strong and kept growing freely they will produce fruit-bearing laterals almost down to the bed—at least ours do so, and as soon as a fruit blossom is seen in the axil of a leaf the point of the shoot is taken out at one leaf beyond it, and before that leaf is as large as a sixpence. By fertilising the flowers as they expand we soon have more fruits than is necessary for a crop, when a selection is made of a number as equidistant as possible and of about equal size, and these seldom fail to swell freely. About four fruits are sufficient for a plant with a single stem 6 feet high; and if you ripen this number on every plant you will have a good house of Melons.

**Layering Roses** (*Bath Amateur*).—The operation is quite simple, and we cannot better describe than by citing from Rivers' "Rose Amateur's Guide." "About the middle of July, in most seasons, the shoots will be found about 18 inches or 2 feet in length; from these, about two-thirds of their length, the leaves should be cut off close to the shoot, beginning at the base, with a very sharp knife; the shoot must then be brought to the ground, so as to be able to judge in what place the hole must be made to receive it; this may be made large enough to hold a quarter of a peck of compost: in heavy and retentive soils this should be rotten dung and pit sand in equal quantities, well mixed; the shoot must then be 'tongued,'—i.e., the knife introduced just below a bud, and brought upwards, so as to cut about half way through; this must be done at the side or back of the shoot (not by any means at the front or in the bend), so that the tongue does not close; to make this certain a small piece of glass or thin earthenware may be introduced to keep it open. Much nicety is required to have the tongue at the upper part of the shoot, so as not to be in the part which forms the bow, as it is of consequence that it should be within 2 inches of the surface, so as to feel the effects of the atmospheric heat; unless this is attended to, the roots will not be emitted quickly. The tongued part must be placed in the centre of the compost, and a moderate-sized stone put on the surface of the ground to keep the layer in its place. The first week in November the layers must be taken from the parent plant, and either potted as required, or planted out where they are to

remain. Those shoots not long enough in July and August may be layered in October, when the layers are taken from the stools, and, if any are forgotten, February and March will be the most favourable months for the operation; as a general rule, July is the most proper season."

**The Spikenard** (*B. L. E.*).—You are right. The Spikenard of the ancients has now been satisfactorily ascertained, by the researches of Sir William Jones and Dr. Royle, to be the produce of *Nardostachys jatamansi*. By the ancients it was held in high estimation, being used at baths and feasts as a favourite perfume. Its odour had the reputation of exciting amorous desires, and was as highly prized by the Roman women as it is by those of Nepal in the present day. It seems to have obtained a high value among the Romans, so much so that the contents of a small box made of precious stone was considered an equivalent for a large vessel of wine, and a proper contribution for a guest to make to an entertainment, according to the ancient custom; and as an evidence of which we have the complaint of Judas, when the woman anointed our Saviour's feet, that "the alabaster box of ointment, very precious, might have been sold for three hundred pence and given to the poor." The smell of Spikenard, according to our taste, is far from agreeable; and Dr. F. Hamilton thinks that the Roman lovers must have had a very different taste from the youth of modern Europe. The ladies of Nepal consider the smell very agreeable, and such as can afford it use oil impregnated with this root for perfuming their hair. The plant grows in the mountains of Nepal, in the provinces of Mandou and Chitor, in Delhi, Bengal, and Deccan. The root, which is from 3 to 12 inches long, fibrous, of a blackish colour, sending up above the ground between thirty and forty spikes, from which it has its name.

**Striking Show and Fancy Pelargoniums** (*E. Masters*).—Cuttings may be put in and struck from March to August; the general time, however, is when the plants have done flowering, and require cutting down to make bushy plants for the next season. This generally happens from the end of June to the beginning of August. They may be very successfully propagated in a frame set upon a spent hotbed, first removing the soil, and replacing it upon a thick coat of coal ashes to keep out the worms. Upon this coat place another of sawdust to plunge the cutting pots in. The best soil is pure loam mixed with silver sand. Five inches wide at the top is a proper size for the pots, which must be well drained. Fill them to the top with the prepared loam, which should be put through a rather coarse sieve to take out the stones. It should not be pressed down too hard, but made firm enough to hold the cuttings fast. Use it in a state neither wet nor dry. The side shoots which have not flowered, and are not more than 2 inches long, make the best cuttings. These should be cut off close to the stem. If taken off with a sharp knife they will not require to be cut again at the bottom, unless the cutting is too long; then they should have a clean horizontal cut just under a joint, to make the cutting the right length. Cut off the bottom leaves close to the stem, leaving only two of the uppermost. Place the cuttings in a shady place, to dry up the wound. This will take an hour on a dry day, or two hours on a dull cloudy one. Then put them in the prepared pots, round the edge, inclining the leaves inwards, so that they may not touch the leaves of those in the contiguous pots in the frames or in the propagating house. When a pot is filled give it a gentle watering, and set it on one side to dry up the moisture on the leaves and surface of the soil. Then plunge the cuttings in the frame, and shade them from the sun, or even from the light, till they form a callosity (a swelling at their base). After that, reduce the shade gradually, using it only during bright sunshine. A little air may also be given every day by tilting up the lights behind. The cuttings must be frequently examined to see if roots are formed; and as soon as they are an inch long pot them off into 60-size pots. A small addition of well-decomposed leaf mould may be mixed amongst the loam with advantage. When potted off give another gentle watering, and replace them in the frame; renew the shading, but disuse it as soon as it is safe to do so, and then give plenty of air to prevent them being drawn up and spindly. To cause them to become bushy plants, nip off the top bud; the lower side buds will then break, and the shoots from them must be again stopped as soon as they have made three leaves. The plants will then be ready to receive a second potting, and should be removed into the open air. The above directions, as far as the cuttings are concerned, relate only to the show varieties, as they are called; but fancy varieties are more difficult to increase by cuttings. Insert the cuttings of these in shallow pans 1½ inch deep, with a hole in the centre, in the usual loam and sand, placing them on a shelf in the propagating house, or in the frame, close to the glass, upon inverted pots. Make the cuttings very short, with a portion of the old wood at the bottom of each. Very little water is to be given till the callosities are formed; afterwards give it more freely, and when roots make their appearance immediately pot off and give the usual treatment.

**American Cowslips** (*Bodfare*).—The seed of these plants should be sown as soon as ripe in pots filled with finely sifted peat and sand, and covered as lightly as possible, placed in a cold frame and kept moist and dark; most of the seedlings will appear in about three weeks, and the remainder early in the spring. They should be potted singly in sand and peat or leaf soil with a little loam as soon as they can be handled, and when well rooted placed in their permanent position. If old seed is sown it will often, like that of many other plants, lie for one or even two years before germinating. The three best species of *Dodecatheon* are *Meadia*, *Jeffreyanum*, and *splendidum*; this last is often, though erroneously, called *integrifolium*. *Meadia*, light purple, often nearly peach, about 1 foot in height; *Jeffreyanum*, rosy purple, 1½ to 2 feet high, the most vigorous and accommodating; *splendidum*, deep rosy crimson, about 6 inches. There are many varieties of *Meadia*, several of which would probably be obtained from a single packet of seed.

**Names of Plants** (*J. F. R.*).—1, *Sedum album*; 2, *Listera ovata*. (*Subscriber*).—1, *Cupressus virginiana*; 2, *Pinus monophylla*; 3, *Larix Kämpferi*; 4, White Rose is a *Noisette*; 5, Red Rose is a *Gallica*; 6, *Tilia europæa laciniata*.

COVENT GARDEN MARKET.—JULY 2ND.

Our market is still heavy. Prices all round with little alteration.



## FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. .. .	½ sieve	1 6 to 5 0	Oranges .. .. .	100	6 0 to 10 0
Chestnuts .. .. .	bushel	0 0	Peaches .. .. .	per doz.	4 0 to 12 0
Figs .. .. .	dozen	2 0	Pears, kitchen ..	dozen	1 0
Filberts .. .. .	lb.	0 0	„ dessert .. ..	dozen	1 0
Cobs .. .. .	per lb.	1 3	Pine Apples English ..	lb.	2 0
Grapes .. .. .	lb.	2 0	Strawberries .. ..	lb.	0 2
Lemon .. .. .	case	15 0	St. Michael Pines ..	each	2 0

## VEGETABLES

	s. d.	s. d.		s. d.	s. d.
Artichokes .. ..	dozen	2 0 to 4 0	Mushrooms .. ..	punnet	0 0 to 1 6
Beans, Kidney ..	lb.	0 0	Mustard and Cress ..	punnet	0 2
Beet, Red .. ..	dozen	1 0	Onions .. .. .	bushel	2 6
Broccoli .. ..	bundle	0 9	Parsley .. .. .	dozen bunches	2 0
Brussels Sprouts ..	½ sieve	0 0	Parsnips .. .. .	dozen	1 0
Cabbage .. .. .	dozen	0 6	Potatoes .. .. .	cwt.	4 0
Capicums .. ..	100	1 6	„ Kidney .. ..	cwt.	4 0
Carrots .. .. .	bunch	0 3	„ New .. .. .	cwt.	5 0
Cauliflowers .. ..	dozen	2 0	Rhubarb .. .. .	bundle	0 4
Celery .. .. .	bundle	1 6	Salsafy .. .. .	bundle	1 0
Coleworts .. ..	doz. bunches	2 0	Scorzonera .. ..	bundle	1 6
Cucumbers .. ..	each	0 3	Shallots .. .. .	lb.	0 3
Endive .. .. .	dozen	1 0	Spinach .. .. .	bushel	1 0
Herbs .. .. .	bunch	0 2	Tomatoes .. .. .	lb.	0 0
Leeks .. .. .	bunch	0 3	Turnips .. .. .	bunch	0 3
Lettuce .. .. .	dozen	1 0	„ New .. .. .	bunch	1 0



## THE LONGHORN BREED OF CATTLE.

(Continued from page 522.)

In tracing the history of the breed we have arrived at the period when the celebrated Bakewell took such a great interest in agriculture that in his day he was noted, not only for his Longhorn cattle, but also for his splendid Leicester sheep and farm horses. It appears that in his mode of improving the Longhorn cattle he sought more for quality than size, and thus encouraged an idea which became prevalent—namely, a liking for small bone, which at a later period it is said was carried to such an excess that it may be assigned as one of the causes which at that time went far to destroy the popularity of the breed. It is, however, well known that he boasted of having given his cattle a great increase of meat in the most valuable or roasting parts. Mr. N. Fitt relates “that Bakewell’s cattle were kept in remembrance chiefly by the bull called ‘Twopenny,’ and the oft-recorded fact of his cow ‘Comely,’ the founder of some of his choicest strains, having 4 inches of fat on the sirloin when killed, at the great age of twenty-six years. Coeval with, if not anterior to Bakewell’s celebrity as a breeder, was the foundation of the Upton herd by Mr. Chapman, which, when it was dispersed in the year 1873, was supposed to be the oldest herd in the kingdom; and I believe that I may say still is, as Mr. R. H. Chapman continues a few on his farm at St. Asaph, North Wales. In this early day it had attained such excellence that Bakewell himself pronounced it as good as any herd in the kingdom, and they soon hired ‘Twopenny’ for a time. Nearer neighbours to him were Buckley, who lived on the north side of the forest, were Stone and Farrow; on the south were Knowles, Astley, and Paget, besides Chapman.

“Perhaps the greatest notoriety after Bakewell’s was gained by Mr. Fowler of Rollright in Oxfordshire, who commenced, like him, with Canley blood, and hired ‘Twopenny.’ He, however, set the seal to the fortune of his herd when he purchased ‘D,’ a grandson of ‘Twopenny,’ and a very in-bred bull, from Dishley. This bull was the sire of ‘Shakespeare,’ who was sold at Mr. Paget’s sale at Ibstock, in November, 1793, for 400 guineas. Like Bakewell, Fowler kept much to his own sort, and in his later days at any rate did not go far from home for his sire. Another similarity to Bakewell was his aversion to selling his cattle; and no offer, it mattered not how handsome, made for his cows or heifers, so long as they continued prolific, could his friends prevail on him to accept. He always regretted the sale of three ‘Twopenny’ heifers to Mr. Grey of Toddington, and would have given the price of the three to get one of them (‘The Painted Lady’) back again; but the purchaser knew too well the value of what he had bought, and the offer was made in vain. Mr. Fowler also refused the then large price of a thousand guineas for three cows and a bull. At length, however, the time came when the herd was to be dispersed. An average of £80 per head was realised. Eight cows made 151 guineas each, while the bulls sold as follows:—£215 5s., £200 10s., and £220 5s., &c. ‘Shakespeare’ was let for two seasons to Mr. Prinsep at £80 a season, and that he was a very superior bull may be gathered from the following description of him

by Marshall, in his ‘Economy of the Midland Counties,’ published 1790:—‘His head, chap, and neck remarkably fine and clean; his chest extraordinary deep; his brisket down to the knees; his chine thin, and rising above the shoulder points, having a hollow on each side behind them; his loin narrow at the chine, but remarkably wide at the hips, which protruded in a singular manner; his quarters long in reality, but appearing short, occasioned by a singular formation of the rump. This is formed by some remarkable wreaths of fat round the setting-on of the tail, a circumstance which in a picture would be deemed a deformity, but as a point is held in the highest estimation; the round bones snug, but the thighs rather full, and remarkably let down; the legs short, and their bone fine; the carcass throughout (the chine excepted) large, roomy, deep, and well spread.’ Mr. Paget of Ibstock, at whose sale ‘Shakespeare’ made 400 guineas, appears to have been a very noted breeder of this period, but unfortunately there is no record of his doings, save that he charged 25 guineas a cow for the service of ‘Shakespeare.’ But Mr. Prinsep, who leased the same bull for a couple of years, realised at his sale 303 guineas for a calf, and 620 for a cow, so that he stands quite in the first rank as regards returns, and I doubt if even the Diskley or Rollright books show higher prices than these.” We have made this lengthened quotation for the purpose of furnishing the middle links in the chain of evidence relating to the tradition and history of this breed of cattle.

The next notes we have to refer to are connected with the Longhorns in 1808, 1812, 1813, and 1820. It is recorded that about the latter year the noted Hereford breeder, Mr. J. Price, challenged the Longhorn men to an exhibition of twenty cows for the sum of £100 a side, to be decided at the Lichfield Agricultural Society’s Show. Mr. Meek accepted the challenge, and the verdict was given in favour of the Herefords. This we may have anticipated in consequence of the Longhorn cattle being notoriously small milkers, which proves very rich and high quality for making first-class butter as well as cheese; and at the same time they are well adapted for the purpose of suckling their calves, which are reared side by side as they graze in pastures in the summer months. In fact, this is still, even at the present time, a favourite mode of rearing pedigree stock of several breeds where intended for exhibition at the Royal Agricultural Society of England’s shows, and the award of prizes for stock reared in this manner are frequently made without relation to dairy or cheese-making value. The prizes are now often awarded for pedigree animals, and this matter has been a source of great dissatisfaction up to the present period. In order to promote the breeding of cattle best adapted for the dairy and milk-selling the October shows at Islington Hall have been introduced, the quantity of milk given being the chief qualification, and very judiciously so, for numerous magnificent herds of cattle, it is well known, have been reared for the purpose of prize-winning only at the Royal and some other cattle shows under the title of Pedigree stock. In consequence the cows are only capable of rearing and suckling a calf while grazing, and therefore assisting to rear only beef-making stock. There are, however, some notable exceptions to this mode of breeding; for we well remember the period when the late Mr. Stratton showed his noble cows of great milking capacity combined with correct formation of grand proportions, entitling them to prizes at the Royal and other shows, where preference is often given by the judges to the animals of correct formation and flesh-forming capacity chiefly.

In the early period of the formation of the Smithfield Club the Longhorn breeders were quite as prominent in exhibition of fat bullocks as their brother agriculturists, especially in the first decade and half of the next, during which time they were often successful. It is stated that Mr. J. Wilkes, of Measham near Odstone Hall, having been the original proposer of the Smithfield Fat Cattle Show at the meeting held in London in December, 1798. His neighbour, Mr. Richard Astley, was found supporting him, in conjunction with such men as Arthur Young, John Ellman, the great celebrity connected with the breeding of South Down sheep of the period, and others. Three years later we find the Longhorns were in the winning list with Herefords and Sussex cattle. In a few more years they took an equal amount of money with Herefords, Shorthorns, and Sussex; and, strange to say, at that period both Shorthorns and Longhorns were obliged to earn their certificate of merit as workers on the farms to become eligible for show-yard honours. In a recent article published on Longhorns in the *Agricultural Gazette*, March 27th, 1876, we find the following statistics as to their successes at Smithfield:—“1800, one cow, 8 guineas; 1809, one ox, 20 guineas; 1814, two oxen, 45 guineas; 1815, one ox, 15 guineas; 1826, one cow, 10 guineas; 1839, one cow, 20 guineas; 1840, one cow, 5 guineas; and 1847, one cow, 15 guineas.” This, it must be remembered, is the result of their competition with all other breeds; and, in corroboration of our own opinion, we find it recorded that the Earl of Radnor’s cross-bred heifer between the Longhorn and Hereford at the Smithfield Show in 1847, at two years and eight months old, was awarded the gold medal as the best cow or heifer of any breed in the yard, and we make no doubt at the present time this cross for baby



beef would prove a good speculation. We find Mr. N. Fitt in his essay gives us another link in the chain of events connected with Longhorn success. He says, "Mr. Thomas Satchwell of Heinfeld, near Birmingham, had a herd in 1876 that must have been founded at a very early date. He used from Wroxall, and also a bull by Mr. Horton's 'Old Conqueror,' the first-prize animal at the Oxford Royal Show in 1839. The Wroxall herd dates back at least to the middle of the last century."

(To be continued.)

#### WORK ON THE HOME FARM.

*Horse Labour.*—It is a busy time now, for not only is the preparation for and the drilling of Turnip seeds going on, but at all intervals the carting of hay, ensilage, &c., is going on also. The horse labour connected with hay is rather considerable, for one or two mowing machines will be constantly employed, for these work early and late without reference to the weather. The tedding machines, however, work only in fine weather; but the horse rake is very valuable as a labour-saving implement, especially on the upland or park pastures, as well as on the large outlying fields on the hill farms, where large flocks of breeding ewes are usually kept. In the water meadows, however, especially where they are old-established meadows, the labour of men with the scythe is required. There are, however, in some districts catch meadows, as they are called, on which the flood waters in some districts are carried on to the higher parts, and the water distributed by its own gravity, being caught by cross trenches, each being a distributor at a lower level. It is here worth while to consider the labour of horses connected with the carriage of grass to the silo, for it is not only from five to seven times greater than the cartage of hay to the stack, but greater when wet with rain water. We note also that a new implement is available for cutting the grass into chaff or short lengths as delivered from the carts. The chaff or cut grass is carried on from the cutter machine and delivered into the silos by an endless web or cloth traverser, thus saving some labour. Now, it is important to consider what kind of grass produce should be secured in the silo for ensilage. This will of course depend upon our requirements and the products we have available for the purpose, also the character of the season prevailing at the time of cutting. Generally speaking, the water meadow grasses being coarse are better adapted for ensilage than park lands; but first of all the home farmer must consider what animals he will have to feed during the winter and early spring months. If dairy cows will require the produce of the meadows it would yield more milk in ensilage than when made into hay. At the same time the probable weather must always be taken into account, for in showery or adverse seasons for haying, if there is a silo, it is best to secure it there instead of risking its value as hay. There does not appear at present on farms where a fair proportion of arable land is attached that it is worth while to attempt the making of ensilage in ordinary or average seasons, for the use of the ewe flock either before or after lambing, for now that the large Drumhead Cattle and Savoy Cabbages can be grown as easily as any other of the root crops, for when they can be fed with good oat straw as well they are always well adapted for the feeding of ewes, especially before lambing, and certainly at less labour and trouble than ensilage at the time of winter feeding in the fold.

It is now a good time to drill the Greystone Turnip seed for producing the main crop for consuming on the land. As fast as our Mangold crops are ready for horse-hoeing the second time we shall certainly sow over the land  $1\frac{1}{2}$  lb. of Turnip seed per acre, and sow also 1 cwt. of nitrate of soda per acre between the lines of Mangold, in order to make the Turnips grow and yield a good amount of foliage, although they will be somewhat shaded by the Mangold; but in case the Mangolds are drilled at from 30 to 36 inches apart between the lines, a very valuable produce of Turnip leaves may be had without reducing the weight per acre of the Mangold if the plants are left closer in the lines; and where the land has been liberally dressed with yard manure and superphosphate drilled with the seed, we look forward to ploughing-in for a Wheat crop after the Mangolds are removed, all the Turnip foliage grown, and the Mangold greens combined, which our practice tells us is sufficient for a full crop or bulk of Wheat straw, the yield of course depending upon the nature of the season.

*Hand Labour.*—Any opportunity occurring hedge-trimming should now be done; for although to keep hedges in nice order they should be looked over again just before Michaelmas, yet the first trimming should always be done directly after midsummer, because the trimmings of grass, weeds, &c., will be prevented from going to seed, and which, together with the young hedge wood, may be collected and stored for covering Mangold and other root heaps, it being better than straw for that purpose. Men will now be required in filling the carts when laying-out earth and manure composts on the meadows, and spreading as fast as it is laid out, for as soon as it is spread, rolled, and chain-harrowed the sooner it will be improving the growth of after grass, and the sooner the worms will begin to draw into their holes any decaying vegetable matters attached to the compost, for in this way any substances which will rot will be operating as manure for grass land. The women also should be encouraged to do light field work, especially in cases where small bunches of couch may be found, for when they are removed with a light three-grained fork it is easy work for women; and, unlike hoeing, which does not always kill, but often transplants the roots of couch, and in future instead of being women's labour only it

soon spreads and makes a fallow necessary, with all its attendant costly horse labour and loss of crops.

*Live Stock.*—In about a month's time it will probably on some vale farms be advisable to buy in a lot of yearling off cattle of whatever kind may suit the district, and if on farms where dairy cows are kept it should be heifers, otherwise it should be steers, so that after eating the late growth of grass in the meadows they may be boxed and fed on for beef to be sold in the following spring or early summer months, when light weights are always required by the butchers. Now the winter provision for these young animals and the dairy cows consumed at the farm will pay much better than the usual practice of buying sheep to be fed on the land, for the cattle fed at the homestead, although it involves the removal of a portion of the root crops, say all over 12 tons per acre, which may be ploughed-in for manure at any time and for any crop, either Wheat or Lent corn, without delaying the seed time or damaging the condition of the land like the treading with sheep; and we say that in the future, as the cereals and pulse crops are the rent-paying produce, more attention and more extension of their growth must be the rule, or the result will not consist of full commercial advantages in the management of the home farm. Dairy cows should during the next two months receive a full allowance of green fodder at milking time night and morning, or otherwise cotton cake and maize meal in addition to their grazing on the pastures, otherwise they will go dry too soon, and go out of profit while getting costly food.

#### OUR LETTER BOX.

*Foot-rot in Sheep (W. J.).*—We have had experience in this for many years, but we never hesitated to employ sufficient skilled labour to keep the disease under. Our remedy is as follows:—Take 3 ozs. of nitre, 3 ozs. of blue vitriol, 3 ozs. of coarse gunpowder reduced to a very fine powder, and well mixed with hog's lard; it will then keep ready for use. This we have found a satisfactory remedy for forty years past, but the sheep must be attended daily, the feet pared if necessary, and after the dressing to stand on dry straw for two hours.

*Poultry Farming (T. S.).*—An immense deal of harm has been done by rash writing. To begin with, certain wild enthusiasts, who perhaps deceived themselves and certainly deceived the public, wrote much about the enormous profits which might be made by poultry breeding. Unfortunately some of their pamphlets sounded so attractive, from the promise of easily made gain which they held out, that they found far more purchasers and readers than they deserved. Their conclusions were not based on any real or practical knowledge, and were, of course, found delusive. Those who had been unwise enough to place much confidence in them were naturally disgusted, sold their poultry, often at great loss, tore down their long rows of houses and wire fences, and returned to their original plan of buying shop eggs at 1d. a piece instead of producing them, as they had fondly expected, at 1d. a dozen. It is not long since we saw an advertisement to the effect that in some such place, covering about 2 acres, from £1500 to £2000 a year might be made by rearing birds for the markets. We venture to be positive that it would be absolutely impossible for anyone to make anything like a tithe of that sum, and anyone who honestly believes in its possibility must be totally ignorant of the whole subject. We shall not be so rash as to hazard any plan for a poultry farm, much less shall we draw out any elaborate calculation as to the profits which might be derived from one. Figures may be made to prove almost anything, and those who have pretended to enter into them have done much harm. Because fifty fowls may be kept in health on an acre of ground and yield a fair profit, it by no means follows that five hundred will do the same on ten acres. We do believe, however, that many of the difficulties on this score, and the risks too, may be much lessened by the intelligent distribution of stock over suitable ground, and by its systematic management on natural principles.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat.  $51^{\circ} 32' 40''$  N.; Long.  $0^{\circ} 8' 0''$  W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1884. June.		Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature			
			Dry.	Wet.			Max.	Min.	In sun.	On grass.		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.		
Sunday .....	22	30.169	62.1	55.8	N.E.	60.4	73.6	51.4	106.4	45.2	—	
Monday .....	23	30.69	64.6	57.9	N.W.	61.2	71.7	51.1	120.1	53.3	—	
Tuesday .....	24	30.009	63.5	56.8	N.	62.3	75.9	51.0	120.6	46.3	0.010	
Wednesday ...	25	30.021	59.6	58.3	N.W.	63.6	75.9	59.4	117.1	56.4	—	
Thursday .....	26	30.197	68.5	59.4	N.E.	63.1	80.7	47.4	119.4	44.2	—	
Friday .....	27	30.158	70.3	61.7	N.E.	64.4	81.7	53.4	113.6	48.4	—	
Saturday ....	28	30.234	70.3	64.6	E.	63.8	80.4	53.1	118.1	47.8	—	
		30.122	65.6	59.5		62.7	77.0	53.1	116.5	48.8	0.010	

#### REMARKS.

22nd.—Fine morning, but clouding over in the afternoon.

23rd.—Fine, bright, and sunny.

24th.—Rather more cloud, but a very fine day.

25th.—Colder, a sprinkle of rain early, damp morning, fine afterwards.

26th.—Nearly cloudless, fine and hot.

27th.—Dull after 9 A.M., but afternoon and night very bright and fine.

28th.—Fine and hot, lightning in S.W. from 9 P.M.

A fine summer week, temperature much above the average, and only a sprinkle of rain.—G. J. SYMONS.





## COMING EVENTS

10	TH	Oxford Rose Show.
11	F	
12	S	
13	SUN	5TH SUNDAY AFTER TRINITY.
14	M	Wolverhampton Show.
15	TU	
16	W	Bedford Show.

## HOT WEATHER.

**S**IXTEEN years have elapsed since there was such a prolonged absence of rain and a continuance of bright sunny days as have lately been experienced in most districts. This is highly exhausting to vegetation, and unfortunately in many localities water is becoming scarce, for ordinary streams are drying up and rivers are lower than they have been for years. In travelling through the eastern and midland counties the grass is burnt off the railway embankments, in some places for miles together—a sufficient indication of extreme drought. In fields Barley is spindling and turning yellow, Potatoes are flagging, and what few Turnips that appeared are vanishing. In gardens the crops are languishing, except those well established in deep rich ground; Lettuces are bolting, winter crops cannot be got out, Celery is being devoured by the maggot, Carrots are “grubbing,” Kidney Bean flowers falling, Peas mildewing, Roses scorching, while red spider is increasing both under glass and in the open air.

This is rather a dismal picture, but it is not overdrawn in the field of observation to which it refers. In some districts the drought may be less marked, and it is hoped this may be so, for where it prevails it is hard work for gardeners, many of whom are finding it difficult, if not impossible, to maintain supplies of vegetables and to keep newly planted flowers moving, except backwards; and it is perhaps harder still for growers of fruit for market, since Strawberries are being sold for 1½d. per pound. It is a case of selling or spoiling, for the fruit will neither keep on the plants nor off them, and growers have to dispose of them as they can, and on the principle of half a loaf being better than no bread.

The question arises as to what is best to be done in gardens under these circumstances. Where there is plenty of water and plenty of men to use it the evils of a burning season may be mitigated; but in too many places there is a scarcity of either one or the other, or both. Then mulching the ground with whatever may be obtainable and shading glass structures are sheet anchors of the cultivator. Coconut fibre refuse, tan, manure, leaf soil, sawdust, short grass, vegetable refuse, Ferns, or Bracken are all useful for covering the soil, and especially if a good watering can be given previously, and after the watering a sprinkling of salt. This is good for almost everything in dry weather used at the rate of one or two ounces per square yard where the soil is wet. Those who have been in the habit of salting Asparagus beds regularly and no other portion of the garden will find the soil moister and cooler where the salt has been used than anywhere else. Salt is not used half freely enough on light soils in dry districts inland. A garden in which it had been systematically used was in the hot summer of 1868 like an oasis in the desert, the crops being fresh and green when those in gardens contiguous were withering; grass land on which it was similarly used was with “verdure clad” the same year, while on surrounding farms where it was not used scarcely a green blade was to be seen.

No. 211.—VOL. IX, THIRD SERIES.

Shading is objected to by many cultivators. No doubt the practice of covering the glass or frames with mats and canvas to “save watering” has been unreasonably indulged in, but when water is scarce, as it is now in so many places, notwithstanding the passing thunder showers, saving it is a virtue and shading a less evil than scorching. Melons and Cucumbers have been saved, as well as water, by judiciously shading; and sprinkling the glass of vineries with limewash applied with the syringe has prevented much scorching of the foliage and improved the colour of black Grapes. There is little doubt that intense sun, besides having an exhausting effect on Vines (where correspondingly large quantities of water cannot be given to the borders), is prejudicial to the colouring of Grapes, and the dark-skinned kinds are never so well finished as when ripened in partial shade.

Shading is only an evil when indulged in excessively, and if any textile fabric is used it is far better if it does not rest on the glass. A current of air between the glass and the blinds is the best preventive of plants becoming drawn when subjected to shade.

In hot weather the beneficial and invigorating action of dew should never be forgotten, and all plants and crops that are grown in frames with moveable lights, such as Melons, Cucumbers, Tomatoes, and various plants in preparation for greenhouses, should be exposed on all favourable occasions by drawing off the lights at night and replacing them very early in the morning; and where lights cannot be removed a low night temperature should be induced to give a good night's rest to vegetation that has been over-excited and exhausted during the day. With moderate moisture in a house, free ventilation, and a low night temperature, dew may be produced without mildew, and this cannot fail to be of the greatest benefit in hot weather.

Particular attention must be given the ventilation of glass structures during sultry days. If houses and frames are closed at night, which they seldom should be, air should be admitted as soon as the sun shines on them, whether that be at seven or four o'clock in the morning. If once the heat gets the master by the maximum being reached before the lights are opened it remains the master all day, and the houses are uncomfortable both to the occupants and their attendants, but by a different method of procedure—opening the lights in advance of the rising temperature—a house never becomes oppressive; indeed, a vinery may be kept cooler than the external temperature during an intensely hot day. It is a question if more evil is done by any other mistake than late morning ventilation, and if the cause of every unsatisfactory effect could be traced to its source, this, in at least half the instances, would be found in morning, and especially Sunday morning, indulgences—too late ventilation. It is far better to never close the structures at all than to leave them closed under a powerful sun in the mornings of hot days. Cucumbers may endure this stewing, but even they, if the lights were suddenly thrown open to their full extent to reduce the heat, would be ruined in less than a week.

Much water is frittered away in hot weather. The roots of plants in pots must of course be kept moist, and those which are never allowed to get dry will need the least water and remain the most healthy. Soil in pots is easily enough kept moist; but let it once get thoroughly dry, and it becomes a serious matter to restore it to a healthy condition, with the thermometer registering nearly 90° in the shade and the plants exposed to the sun. Pots as far as possible should be plunged even if only by sinking the smaller into larger. It is wonderful the saving of water and time that is effected by that simple method, and how beneficial it is to plants in a tropical season.

Outdoor water is wasted by distributing a given quantity over a space often five times or even ten times greater than it is possible to apply it beneficially. Moistening the soil to the depth of half an inch a little more or less, and leaving it dry below, is worse than nothing. It is simply sprinkled on

No. 1867.—VOL. LXXI., OLD SERIES.



to-day to be extracted by to-morrow's sun, for the plants or crop get none of it. And that is not all, as when evaporation is thus called into activity it does not stop with the dispersion of the added water, but the too scant natural earth stores are drawn on the principle of starting a pump when the water in the well is low. It is far more effectual to give a certain portion of a garden one heavy watering a week—sufficient to pass quite below the roots, than to divide the same quantity of water over six times the surface. By acting on this principle in 1865, of thoroughly watering a sixth part of a garden daily, a supply of vegetables was maintained and flowers were kept growing, while in adjoining gardens where the resources were too much divided there was practically nothing left after the end of July and onwards for several weeks of that never-to-be-forgotten season, in a district in which water had to be conveyed for miles at night to meet the necessities of burning days.—EXPERIENTIA DOCET.

### ROSES.

"ROSE bushes are so unsightly, whether standards or dwarfs, that one naturally makes a Rose garden in some out-of-the-way place," said a gentleman of highly cultivated taste to me recently; and knowing, as I do, how much may be done with the mere growth of the Rose to render it at any rate not an offensive object when out of bloom, the remark struck me as a reproach to gardeners generally, and gave rise to the thought, Why is it that Roses are so often seen under the guise of standards and dwarfs only, and not under a more attractive aspect? "There's no Rose like La France" said an ardent lover of Roses to me, and in that exclamation of an enthusiast lies the answer to my question. A true admirer of Roses in the exhibitor's sense of the term sees little else but blossom and bud, and a really fine flower would send him into ecstasies even if it grew out of the top of a broom-handle. He would laugh to scorn any attempt to impart beauty of form to a Rose bush as mere waste of time—prize-winning flowers are the sole end and aim of his efforts in Rose culture, and certainly no objection can be taken to what is really a healthy innocent hobby. But why should the exhibitor's unsightly bushes find a place in conspicuous positions in pleasure grounds? Surely we who cultivate Roses as ornamental features of the garden might do much more to render them either striking, symmetrical, or picturesque objects, instead of grotesque monstrosities. Repeatedly has it been explained in the Journal how easily and quickly the form of a symmetrical cone may be imparted to Hybrid Perpetuals. I have now a pair of Madame Plantier, to which no other training has been given than tying the leading growth to a pole and pruning in the ordinary way, that are now objects of great beauty, each of them having hundreds of the large clusters of white flowers. The best one is perfectly symmetrical, being fully 6 feet in diameter at the base, and tapering upwards 10 feet high to a point—a lovely floral cone without a flaw, flowers meeting the eye all over it from the ground upwards. The other one is spoilt by a want of finish at top, but that will be set right by a season's growth, and be it remembered no merit is claimed for these lovely pillars on the score of skilful training. So easily have they been brought to the present satisfactory condition that careful planting and ordinary care may certainly be rewarded by similar results in any garden.

Another pair of that grand old Hybrid Bourbon Rose Charles Lawson, which are also now in full bloom, admirably illustrate another old method of Rose culture out of the beaten track. Each of them was planted in the centre of a small circular bed of Roses, and when they became established both threw up a stout annual growth 8 or 9 feet high, consisting of several single branches springing from the stem near the ground. Instead of shortening them at the next pruning season the old growth was removed, and each young branch bent carefully outwards and downwards till the top was within a foot or so of the edge of the bed, where they were fastened to pegs as nearly equidistant as possible all round the bed, with the delightful result of a regular mound of Roses, for plenty of flowers come all along each branch from the tips near the ground upwards. I know a very large old tree of this Rose covering the front of a house in Uckfield that at this season of the year is so laden with flowers as to be one of the sights of the town. I intend trying a few of it as pillars, as I doubt not has often been done, for it has long been a general favourite, and at one time it was in high favour with exhibitors, hardly a winning stand of cut Roses being without one of it.

Gloire de Dijon is another of our most useful Roses, often heard of under the euphonious designation of Old Glory! For pillars, mounds, on walls or fences, it is equally useful, growing to a large

size quickly under generous treatment, and is laden with its fine flowers early and late in the year. Mrs. Bosanquet is equally floriferous; although its flowers are somewhat loose, yet they are very useful in bud or half open. It grows freely, and soon covers a large space of wall. Many of the stronger-growing Hybrid Perpetuals might also be turned to account for pillars; and instead of planting a Rose garden where it is an eyesore for several months of the year, let us only bring those to the front which by free robust growth may have agreeable form imparted to them, mixing others of more lowly or weaker growth with perennial plants calculated to blend well with them, and so get rid of the too prevalent stiffness and formality upon which no eye can rest with pleasure. The plan is no new one; the old Cabbage Rose, Moss, and Damask Roses have long been best liked when associated with the Lavender, Rosemary, white Pink, Sweet Pea, Wallflower, Musk, and other old-fashioned flowers, most of which have fragrant blossoms.—EDWARD LUCKHURST.

### NOTES ON VINES.

**BLEEDING.**—Just a word on this vexed question. Last July I planted a house of Muscats which ran the full length of the rafters in good time, with a little firing. They were pruned at Christmas at lengths varying from 3 to 5 feet. Only one of them bled, and though the sap escaped only for a day or two it left its mark for the season, this being the only rod which has not touched the top of the house. Several of them in the hot days of March showed signs of dampness where cut, but did not bleed. I suppose it is a recognised fact that Vines, if there is any bleeding, do it more in bright sunny weather, and this too without watering the roots. I never had much bleeding in old Vines, consequently do not know how this would affect the crop. In lifting Muscats which had been planted four years I cut the roots to reduce them, and these bled a little, but as they were planted immediately I could not say how long this lasted.

**TYING-UP SHOULDERS.**—The discussion on tying the shoulders of Grapes up comes at the right period of the year. I believe in tying if not over-done, and practise it, but so do it that by the time the Grapes are ripe very few if any ties are left. I gradually take them away. Perhaps quite half my bunches have no ties, but then on the other hand I have bunches of some varieties which could neither be thinned nor left for the summer without ties, so that there are two sides to this question.

**SCORCHING.**—Your reply to "A Lady Gardener" induces me to say that it is always better to leave a little air on at night, more especially when there is any doubt of early morning ventilation. Bed has its attraction to many, more particularly on Sundays; as I have before said more damage is done on Sunday morning than all the week put together. No one enjoys a leisure hour more than myself, but I do not neglect on the seventh day the work of the previous six.

**SCALDING.**—Noting the remarks of "S." on scalding I would like to say that I have found (though not this year) Lady Downe's Seedling scald when I know it has been impossible for the sun to touch them. I always keep this variety of Grape as cool as possible when stoning—the least dew on the berries is fatal. Having some Muscats with rods 4 feet apart, and the laterals being stopped two leaves only above the fruit, and the foliage not being over-large, I find several exposed berries scald. I say scald, but really this is very different to Lady Downe's.

**SYRINGING.**—Now a word or two as to syringing Vines in bloom. Having lifted my Muscats in March I syringed the Vines severely to encourage them to break. They did well. When in flower I syringed several Vines as an experiment, and am certainly pleased, having a better set than usual, and this with a lower temperature. As "S." rightly says, "If syringed at the right time it helps the Grape thinners very much." Alnwick Seedling I cannot set well, even though I brush the gummy substance from the flowers, but on one or two occasions I syringed the bunches heavily, and now have much better sets than usual, not, however, to my satisfaction.—STEPHEN CASTLE, *West Lynn*.

### CHOICE ALPINE PLANTS.

**ONOSMA TAURICA** (Golden Drop).—Out of some dozen or more species of *Onosma* the one under consideration, which has been previously recommended, is without doubt the handsomest. It is, however, not among the easiest alpine plants to contend with under cultivation, a fact alone which favours a few remarks from one who has grown it for many years somewhat successfully, and who has also been a successful propagator of the same. At the outset it may be said to fairly claim a place among such of those really old-fashioned hardy plants which from a variety of causes are among the rarer alpine plants of to-day. Such, then, is *Onosma taurica*, which originally came into our gardens with the opening year of the present century. It belongs to the somewhat extensive and valuable order Boraginaceæ, and attains a height of from 9 inches to a foot when well established, producing in profusion an abundance of drooping tubular-shaped blossoms in somewhat lengthened cymes, which are canary gold in colour. There is no nobler rock plant than this, and which should find its way to the exhibition table quite as often as that



noble Heath *Erica Cavendishii*, whose flowers it resembles somewhat; and I am sure no one would admire the one without the other, giving precedence, as it well deserves, to the *Onosma* for richness of colour. The reasons why it is so seldom seen are obvious. In some soils it is a short-lived plant; it is peculiarly impatient of damp, and the following instructions are essential in planting.

In the first place avoid manure. It is deadly to it ultimately; not but what it will grow well in rich soils—indeed it grows too well, and assumes a vigour which appears to exhaust the rootstock, and decay at the collar is the result. Plant it then in a mixture of about equal parts of sandy loam and peat, to which may be added a liberal quantity of coarse silver sand, macadam grit, broken bricks or other material that will keep the soil open. Choose for it a narrow fissure in the rockery, where it will receive a fair depth of soil, allowing plenty of room superficially for free development of growth over some projecting ledge of rock. Thus placed in a somewhat sunny position it will be happy and at home.

The only real method of increasing the various species of *Onosma* is by cuttings, since they are remarkably shy seeders under cultivation, still I am inclined to believe they are different in this respect in their native home. Some years ago I remember writing Mr. Thompson of Ipswich, asking him to supply me with some seed of *O. taurica*. His reply was to the effect that if I waited for seeds he feared it would be many years ere I got it, for, so far as he was aware, seeds had never reached this country. With ordinary care, however, it is by no means a difficult plant to increase by means of cuttings, and all who care for increased beauty on the rockery should do their utmost to extend its cultivation. The cuttings must be torn off from the stock plant with a heel, and never allow that bit of cold steel to be any nearer them than your trouser pocket. Where the knife is used the incautious and uninitiated invariably take off the portion that would have emitted roots. Insert the cuttings in pots of very sandy loam and peat, plunging them in cocoa fibre in small hand-lights. Give a good watering, and keep them close and shaded. In about three weeks or a month they will be sufficiently rooted for potting, after which place them in a cold frame and keep it close for a few days till they have become established. *O. taurica* comes from the Caucasus, as do some four other species. Of the remainder two only, I believe, are in cultivation—viz., *O. stellulatum*, Hungary, and *O. echioides* from S. Europe, while I have a somewhat faint recollection of once meeting with a so-called *O. candida*.

**OMPHALODES LUCILÆ.**—Who, among the favoured few that have seen this charming plant flowering, has not stooped to admire the sweetly modest beauty of its delicate sky-blue flowers? and where is the taste of him who careless and unheeded passed it by? If such a plant is destined to become an everyday occurrence on our rockeries, then it is only fair to assume that the culture of really good alpine has at length attained perfection, and to-day we are full of expectant hope that such may be the case, and with good reason. The plant under notice has fortunately been favoured with ample means by which it may be propagated. These are three—viz., by cuttings, by division of the rootstock, and by seed. To meet with the best amount of success try the first method. Great care is requisite, and experienced hands will have to perform the operation. The cuttings must be removed with a heel attached. In doing this care must be exercised, since the stripping of the cuttings from the stem in this way will materially weaken the plant if done roughly or by the inexperienced. Insert the cuttings in very sandy peat, to which may be added broken brick rubbish. Give a good watering and cover with a bellglass. Thus treated, and kept perfectly close, I have rooted them in fourteen days or thereabouts, and there is no reason why others may not be equally successful by adopting the same plan. It is advantageous if a handlight be placed over the plants to be operated on about a fortnight prior to taking the cuttings, keeping it somewhat close, which will assist in lengthening the growths. The cuttings must never see a glimpse of sun till rooted. The division of the rootstock is a simple matter, the only things necessary being good plants such as are capable of withstanding the test. It must be done cautiously, however, or it will be found that the growths have all been severed from the parent without any roots. Another thing, do not give it too much of the nurseryman's idea of division, by cutting it into microscopic scraps; you will be better off ultimately, and have fewer losses.

Simplest of all the modes of propagating this little gem is that which Nature bestowed upon it—viz., seeds. In this way it is readily increased. The plant, on the whole, is much more easily managed by seeds than any other way. It is both a profuse bloomer and free seeder. Flower spikes continue to

rise from amidst its compact tufts of glaucous leaves till quite late in the autumn, and as a natural consequence daily watching is necessary to secure all the seeds. Place them when collected in such a position as they may not be influenced by atmospheric changes, and effect a sowing every few days. When the seed is kept for any time I have known it to continue dormant for two seasons, but sown as soon as ripe it soon germinates. One peculiarity I have noticed in raising this plant from seed is that some come with light green leaves, quite devoid of that glaucous tint which is so distinguished a feature in the typical plant. While speaking of this I have in my mind's eye what to me was a most sumptuous array of its flowers. This was in that almost unique and equally rich collection of choice alpine gems of which the late Mr. James Atkins of Painswick was possessed. In the hands of that worthy veteran this was made equally at home as though it still inhabited its native home on Mount Taurus. A small rockery full of such things as *Omphalodes Lucilæ* and *Tropæolum polyphyllum* was *en masse*, the aspect, if memory serves me right, being south-west. The garden was rich with many a choice gem, none more so than this. Mr. Atkins' success with it might be in a manner accounted for, the garden being well sheltered though somewhat elevated among the Cotswolds, the oolitic marl and magnesian limestone which forms the subsoil being liberally used in potting, (especially so the crustaceous section of *Saxifraga*), and which seemed conducive to their free growth and general well-being. Slate chippings were also used for pot plants of *Omphalodes* in this garden.—J. H. E.

#### APPLE TREES FOR ORNAMENTAL PLANTING.

I THINK that most people will agree with Mr. W. H. Divers that Apple trees "deserve to be used more than they have been for ornamenting landscapes." My opinion is that the cider varieties are more adapted for ornamental planting than the choicer kinds. Generally the cider varieties are very symmetrical in growth, very free-blooming, and very free-fruited. What could be more beautiful in the landscape than the "Old Foxwhelp" loaded with fruit, its high colour being very telling? It is not large-fruited varieties which are wanted, although the Blenheim is one of the most deserving to be planted, as it makes a large symmetrical spreading tree. The size and colour of the blooms should be of a secondary consideration, as the blossoming period is soon over, and all Apple trees are beautiful when in bloom. Free-fruited and highly coloured varieties are what we require most.—A.

#### ROOT-BOUND CHRYSANTHEMUMS.

RECENTLY going around with a gardener, who is an excellent man in his profession, and more remarkable for being in advance than behind his fellows, pointing to a fine healthy stock of Chrysanthemums in about 10-inch pots, "You see," said he, "those are already root-bound—the roots have reached the edges of the pots. What am I to do with them?" The answer seemed simple enough, and I at once recommended repotting in one or two sizes larger. "That is exactly what the master won't permit; his Chrysanthemums cannot be in larger pots." That seemed curious, and it drove me to reflect on a few things in connection that your correspondent, whose "current thoughts" are so readable, would call "thinking aloud." First, is it really so desirable to strike Chrysanthemum cuttings during the winter months in all cases, especially where large pots are not permitted; where specimens are not grown nor showing intended? One of the invariable results is that of my gardening friend—plants permanently root-bound, next loss of foliage, then long gaunt bare stems, and a final result of twelve months' care poor and unsatisfactory blooms, probably out of character altogether. His autumn-flowering ones, such as Madame Desgranges (the largest and best of this class), Sœur Melanie, Virginale, James Salter, Elaine, and a few others, will bloom, so far as I can see, in September or October, when they are not wanted, when floral profusion is strewn around. These may come fairly well, but as the Chrysanthemum is a gross feeder, no matter what artificial stimulants are supplied, plants that were struck early and that are root-bound at the end of June must be unsatisfactory. At best that is my opinion, but I am sure you will hospitably share your space with any of your correspondents who may have had a similar case to deal with, or on the subject generally. An evil that aggravates the difficulty and that invariably turns out unsatisfactory is when rooted side shoots are employed instead of cuttings. These rarely ever make good specimens; and it too often is resorted to to save the trouble of waiting for cuttings to strike, watching from slugs, damp, &c. If put in in January or February they are rooted (established) in a fortnight, and will fill the largest pot with roots before June. They are root-bound then for months; and ten times the labour of watering, manuring, and even mulching the surface will never make fine specimens of them. I would only propose for your consideration—1, Striking cuttings later for general decorative purposes, say in March; 2, If very large pots are not either allowed or desirable, and that the roots have reached the edges of the pots in June or July, to plant out, say, in the vegetable garden, fully exposed; and, 3, To insure success and no check, when lifting afterwards to repot, to keep the roots cut in occasionally around the ball. This plan succeeded with me last year. I had intended to add some observations in commendation of the



new single Chrysanthemums, but must not now claim more space.—  
W. J. MURPHY.

### THE PARSON'S GARDEN.

A FEW years ago there was exhibited at the Grosvenor Gallery a collection of pictures by the late talented young artist, Cecil Lawson. His *chef d'œuvre* was the "Minister's Garden," a huge canvas depicting in subdued but harmonious tones the outlook from a country parsonage. It was an ordinary garden with Hollyhocks on one side and Tropæolums rambling over a rustic fence on the other. A few garden tools, watering cans, and flower pots lay about the foreground, and the front, if I recollect aright, consisted of a bed of Cabbages. There was little more to be seen of the garden itself, but an extensive panorama of Sussex field and woodland and cozy homesteads stretched upwards to the horizon. Materials so simple and homely would have escaped the observation of any but a genius. It is the privilege of genius, however, to invest the ordinary and commonplace with beauty, and in this case, moreover, sentiment pervaded the artist's work; he had caught Dame Nature in one of her pensive moods on such a day as George Herbert describes—

"Sweet day, so cool, so calm, so bright,"

and transferred her portrait to his canvas. The parson's garden I will endeavour to describe is none the less a reality—more than poor Cecil Lawson's. Were my hand as cunning as the now quiet one that once wielded the pencil the picture would needs be as famous. But the masses of gorgeous Rhododendrons and Azaleas, deep crimson, glowing reds, cerise and rose, white and orange-yellow, with background of dark Conifers; the Pink and White Thorns, gold and silver Chestnuts and Maples, the Copper Beeches, the arches of clustered Roses, and purple Clematis, and glowing Poppies, would laugh in the summer sunlight at the puny efforts of a Titian or a Tintoletti.

The parsonage itself is a comfortable gabled house, almost every inch of whose white walls is covered with leaves or blossoms. I shall endeavour to describe in this short series of notes on typical gardens exactly what was to be seen. On my visit to the gardens under notice the memoranda were taken on the spot. On the west walls were a huge Magnolia, Wistarias, Jasmines, Clematis Jackmanni, and the following Roses in bloom—Gloire de Dijon, Climbing Devoniensis, Abricoté, Cheshunt Hybrid, Madame Falcot, that brightest of double yellow Roses the old Austrian Briar, and a fine full red Rose which I took to be Paul Ricaut. Over the spacious porch, whose tiled threshold bore the one word "Welcome," were Gloire de Dijon and Honeysuckle. Across the smooth, wide, gravelled drive there was a charming group of shrubs, and towering over them an effective background of Cupressus Lawsoniana. For the sake of intending planters it may be useful to sketch this group. It presented a semicircular front to the porch. The central figure in front was a golden Yew, with a crimson-leaved Maple on one side, and Acer Negundo, the variegated Maple, on the other. The latter is a charming accessory to the mixed border, as it forms a light and elegant background to Roses and most tall-growing herbaceous plants. Behind the Maples were tall Cupressus and Piceas, and in front of the Negundo a standard Rhododendron, Illuminator, with its huge clusters of rosy cerise. A golden-variegated Oak, a double Deutzia, and a fine clump of a crimson Columbine completed the picture. The garden is sheltered from the highway by a thick belt of Thujaopsis, in front of which is a line of tall Cupressus. A broad, smooth, gravelled drive of 50 yards or more leads in a straight line from the porch aforesaid towards the lower gate, to which it then sweeps in a graceful curve. On each side of the drive is a line of Irish Yews 7 to 8 feet high and alternate standard Rhododendrons. The effect was extremely picturesque and delightful: the Yews just showing their light-green summer growth, and the Rhododendrons were in all their summer glory. On the right there is a varying breadth of grass with a sinuous belt of deciduous shrubs, coloured Thorns, and choice herbaceous plants. On the left a well-kept lawn with picturesquely disposed clumps of American plants and beds of mixed perennials. Towards the bottom of the drive on each side stood a fine Picea Nordmanniana. An iron hurdle fence divides the garden from green meadows beyond, sheltered by tall hedgerows. In the middle distance among the leafy Elms are the red-tiled roofs of farm buildings and gabled cottages, and on the right the grey tower of a village church; wooded heights complete the distance of this charming bit of rural landscape.

Passing the vinery with its large crop of Muscats and robust healthy foliage, we enter "a wild disordered garden," apparently used as a nursery some years ago. There is a little orchard of pyramid Apples and Pears, then some sheltered beds of Strawberries and small fruit, and beyond scores of grand Rhododendrons scattered about and intermingled with Conifers of stately growth, Deodars, Araucarias, Abies, Cedars, Yews, Retinosporas, and Cupressus, nearly all of them making splendid growth and showing their variously formed cones. Here and there were large bushes of Rosa rugosa, clumps of the brilliant oriental Poppy, Foxglove, Helianthus, Delphiniums, beds of Roses, Pinks, and Stocks.

But the grounds so artistically planted and garnished by such wealth of glowing colour and graceful form are outdone in interest and attractiveness by the grand and varied collection of Orchids. In the half-dozen unobtrusive little houses (with the exception of the East and West India Orchids, all so cool and airy, and screened from hot sunlight) there are perhaps 12,000 plants enjoying life, it would appear, as comfortably, if not as luxuriously, as in their native haunts. Here are plants of the extremely beautiful Odontoglossum vexillarium, there the scarcely less charming O. Alexandræ, then the magnificent Lælias elegans,

Warneri, and the elegant Jongheana, with fimbriated lip and petals of rich amethyst; Dendrobiums, Cypripediums, Epidendrums, the Cattleyas, pre-eminent among which were C. dolosa, with broad oval leaves, and C. gigas, the most striking and beautiful of all the Cattleyas; the Bat Orchid, the Beetle, the Gnat, and the strange and curious forms of Masdevallia and graceful Phalanopsis. But to know and appreciate the almost endless variety of this wonderful tribe of plants requires years of patient study in their midst—the bare mention of their names only would require columns of your Journal. The parson knows, however, and rumour says that he has knowledge enough of Orchids even to purchase the dried roots at sales. Although many years might elapse before one acquires knowledge so extensive as he possesses, a little knowledge in this case need not be a dangerous thing. The most ordinary greenhouse might afford shelter for not a few species, including some of the most beautiful. There has been a great change in Orchid culture during the last few years, and any respectable grower would name from half a dozen to a score "cool Orchids" as manageable for the amateur gardener as a Camellia or a Pelargonium.

But the interesting and beautiful display I have endeavoured briefly to describe is not attainable without incessant labour and watchfulness. All these seem to be here but a labour of love. To maintain a suitable temperature and degree of humidity, to guard against the attacks of marauding insects, to employ judicious shading, are essential in the cultivation of choice Orchids, the neglect of one of which would imperil a host of costly plants. If it be the sin of idolatry to throw a rich and costly floral robe over the mean and commonplace, to fling down on the margin of God's acre such wealth of glorious hues and graceful forms that gladden the soul of the rustic as he walks to the village church, or the wayfarer as he pauses a moment at the garden gate; to linger over the rare and beautiful exotics and expatiate on their marvellous structure to eager listeners, to encourage and promote by precept and example among his parishioners a love of gardening, and especially of flowers, then my parson of the beautiful garden has erred. Nevertheless, it is much to be desired that his reverend brethren would to a greater extent than they do now follow his example and have the grace to err in such a way. English countryfolk would assuredly be the happier and the better for it.—LUKE ELLIS.

### WASHING VINES.

I MIGHT say I am a non-believer in syringing Vines, but I believe in giving the foliage a good washing through a hose just previous to the colouring period. I daresay some Vine-growers will shudder when reading the above, but I can assure them if it is managed carefully the bloom will not be disfigured. We do not stand on the floor of the vinery and turn the hose unmercifully at the bunches, for the bunches are not syringed at all. In the first place we use rain water, for if hard water is used it might contain lime, and the result would be marked berries.

We choose a mild morning for the operation, so that abundance of ventilation may be given early. We also manage to wash the foliage between 5 A.M. and 6 A.M.; if it is done so early the Vines are dry before the sun has much power. The water is placed in a garden engine with a long hose attached to it with a fine rose on the end. The man who works the hose stands on high steps so as to be close to the foliage, but of course out of the way of the bunches. The garden engine is then worked gently, when the water is forced out like a gentle spray on to the foliage and glass. The engine must not be worked too hard, as being close to the foliage it might get injured. It is only the water which is falling that passes on the bunches, but in our case it rolled off like from a duck's back.

At our first attempt in washing the foliage we placed a leaf of an old copy book over the best bunches, but those which were left uncovered escaped without any injury whatever. We found this washing very beneficial, as it removed the blacks and dust from the foliage, besides removing any spider which might be lurking about, and the Vines seemed to be benefited by the washing until the end of the season. It is rather wet work for the man who is holding the hose; it is like being under a shower bath.—A. YOUNG.

### THE HERBACEOUS BORDER.

THE early part of May was very unfavourable for outdoor plants, and this in connection with the severe weather of April rendered the borders anything but gay for the time of year. At the close of the month, however, things began to look up, and some plants have been really good.

DODECATHEON SPLENDIDUM.—This flowered freely, having eight to ten flowers on a stem, Cyclamen-like, deep crimson in colour, with a yellow ring at the base of the reflexed corolla. The flower stems attain to a height of about 6 inches. It is quite a gem, does well in rich soil well drained, and appears to like a little shade, but does not flower so freely as in the full sun.

RANUNCULUS ACONITIFOLIUS PLENUS forms a somewhat spreading and branching bush about 2 feet high in a rather moist soil and slight shade, where it grows freely and flowers profusely, having pure white and very double flowers. It certainly is one of the best of early summer-flowering plants for a damp situation, and will grow in any good soil if not too hot and dry. The



species *R. aconitifolius* is also useful, but the flowers are not so durable.

**SAXIFRAGA GRANULATA FLORE-PLENO.**—This is worth a place in every border from its free-flowering habit, bearing on stems about three-quarters of a foot high large double white flowers in abundance. It likes a rich and rather damp soil, but flourishes in an ordinary border.

**AQUILEGIA GLANDULOSA.**—At its season this is one of the very finest perennials, growing freely in a well-drained soil, not appearing to like damp, evidently preferring a lightish soil, and well drained. The flowers are bright deep blue with a white corolla, and very conspicuous, especially in the mass, attaining to a height of 12 to 15 inches.

**GEUM COCCINEUM PLENUM** (fig. 5).—The bright scarlet semi-double flowers of this are very effective and useful for cutting. It is best treated as a biennial, seedlings being more floriferous and free-growing than plants from cuttings. It grows to 3 feet high, and ought to have place in every garden.

**PHLOX SETACEA GRANDIFLORA.**—Being of neat dwarf habit this forms an admirable front-row plant, the flowers being large,



Fig. 5.—*Geum coccineum plenum*.

mauve in colour, and very freely produced. All the setacea vars are very fine, particularly Vivid, fiery rose, carmine centre, very bright; Bride, white, red centre, very effective, dwarf and floriferous; Perfection, white, purple centre, one of the best; and Model, rosy carmine, very fine. They are all good for massing, and for front clumps in the herbaceous border.

**TRILLIUM GRANDIFLORUM.**—When several are planted together a group of this is very pleasing, the flowers being large and white. The plant thrives best in a moist rather shady border, in light rich soil surfaced with leaf soil. *T. erythrocarpum*, white with crimson spots at the base of the petals, is very pretty, requiring moisture, shade, and a vegetable soil.

**TROLLIUSES.**—These, with their branching stems supporting numerous large globular flowers, in colour varying from pale yellow to orange, are very effective in early June, and do well on a north border in rich soil and moist. The best with us are *T. europæus*, *T. napellifolius*, *T. caucasicus*, very bright yellow; *T. Fortunei flore-pleno*, orange; *T. Loddigesi*, late, bright yellow; *T. japonicus fl.-pl.*, asiaticus, and *T. americanus* are good. For a north border they are excellent, and will grow fine in the open fertile borders.

**LYCHNIS VISCARIA SPLENDENS PLENA.**—At the early part of June this was the finest plant in the borders. The flowers are a beautiful deep rose borne on erect stems, on which they are arranged to a length of several inches, and as several stems rise from the tufted crown the effect is very pleasing. The flowers, being double, are very durable and fine for cutting. Any free soil suits it in an open situation.

**IRIS ORIENTALIS.**—In established masses this affords a quantity of flowers of a highly decorative character, and extremely useful for cutting. All it needs is to be planted and left alone until it forms masses that from their size necessitate division, for which autumn is the best time. We have at least three forms of *I. orientalis*—a deep velvety blue both in standards and falls; pale purple or blue in standards and falls; and a reddish purple, the base of all being much reticulated; the two latter less free in flower than the first, but the flowers are larger. They are certainly only forms of *I. sibirica*, and are not equal to *I. orientalis* in colour or for decorative value either on the plant or cut. They grow to a height of 3 feet.

**IRIS SIBERICA.**—With the grassy foliage and abundance of flowers of various shades of blue, with the base of the falls reticulated white, these are very effective. The plants grow anywhere in good soil in an open situation and free from stagnant water. They should be grown in quantity, as the flowers borne on the long stems are extremely useful for cutting. They grow 3 feet high. *I. prismatica* is similar to *I. orientalis*, only the standards and falls are of a rich bright blue with orange spots at the base, and very beautiful. It does not grow more than 2 feet in height. Of similar height is *I. versicolor*, or rather less, its reddish lilac standards and rosy purple falls spotted white being very handsome. *I. versicolor purpurea* is of a deep purple, and grows to a height of 1½ to 2 feet.

**POLEMONIUM RICHARDSONI.**—This is good from the early part of June over several weeks, the flowers being sky blue, borne in loose heads, and with the yellow anthers are very telling. The plant is very compact in habit, forming a rounded pyramid about 2 feet high covered with flowers. It is very fine indeed, and ought to be grown by everyone, as it will grow in any soil except a very wet one, and it needs an open situation.

**CAMPANULA GLOMERATA DAHURICA.**—This is one of the most useful either in the border or for cutting, its large terminal heads of bloom being very effective, of a deep purple, the flower stems very freely produced, and it will do in almost any soil and situation, preferably a lightish soil and open situation.

**SILENE ALPESTRIS.**—This is a mass of glossy white flowers, borne in panicles about 6 inches high, and is an admirable front-row plant, doing well in loam well drained and an open situation.

**AQUILEGIA GRANDIFLORA.**—This attains to a height of about 18 inches; the flowers large, white; the stems erect, as also are the flowers, the foliage being much-divided and handsome. It succeeds in any loamy soil in an open situation free from stagnant water. *A. cœrulea* differs only from the above in having blue sepals, the petals being white, and is very handsome.

**ANTHERICUM LILIAGO.**—This forms tufts of grassy foliage, and has numerous spikes 2 feet or more in height, of white flowers. *A. Liliago major* has flowers very much larger, and is stronger in other respects. *A. Liliastrium* has long grass-like foliage, and spikes of large white flowers about 2 inches in length and fragrant. It is a really good plant when established. *A. Liliastrium major* is a much larger form of the preceding, and attains to a height of 3 feet, the spike of flowers 15 to 18 inches long and very fine. The Anthericums require a well-drained soil.

**GERANIUM IBERICUM.**—This forms a fine bush about 2 feet high covered with flowers of a large size of a telling bluish purple, and is one of the very best perennials, flowering in June. *G. Endressii* has bright rose flowers and is very effective, attaining to 18 inches in height and is very pleasing. The Geraniums like a free open soil well drained, and sunny situation.

**ARMERIA PLANTAGINEA RUBRA.**—With its large heads of bright deep rose this plant is very effective, and does well in any light soil and sunny position.

**ONOSMA TAURICA** forms compact tufts of linear foliage, and has cymes of tubular flowers of a bright yellow, attaining to a height of about 9 inches, and is a very pleasing front row plant, but must have a well-drained soil.

**VALERIANA OFFICINALIS** when seen in large clumps is very effective. It continues flowering for a long time, and is a common plant of great beauty. The flowers are bright deep rose or red, and the plant in good soil will grow 3 feet high.

**ERODIUM MANESCAVI.**—This forms tufts of handsome foliage



about 15 inches high, above which rise many stems bearing purplish red flowers in umbels, the flowers an inch across. It commences flowering in early June, and keeps on until late summer. It requires a well-drained soil, and is a very fine border plant.

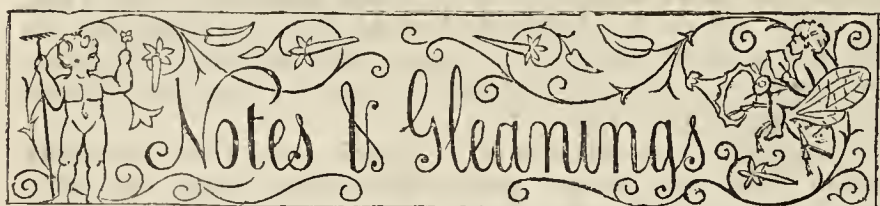
IRIS SUSIANA flowered finely this season. I was pleased to notice the admirable engraving of this interesting Flag in a recent issue. We have it on a south border, where it does well.

OROBUS LATHYROIDES.—This grows erect to a height of 30 to 36 inches, producing spikes in quantity of small bluish purple-red flowers. It is a pretty plant in late May and early June, and needs rather light soil with sun.

SIDALCEA CANDIDA has erect branching stems 30 to 36 inches high; the flowers arranged on the upper part of the stem. Malvalike, pure white, an inch across, and very freely produced over a lengthened period. It grows freely in an open soil well enriched with leaf soil.

ACHILLEA TOMENTOSA is very pretty from its large heads of golden yellow flowers, attaining to a height of about 6 inches. It is an admirable front-row plant and very useful for cutting, thriving in any light soil and sunny situation.

Pyrethrums, both double and single, were fine, and still are (the middle of June); while Delphiniums are coming in and promise splendidly. Pinks are fine this year, flowering most profusely.—G. A.



At a General Meeting of the ROYAL HORTICULTURAL SOCIETY, held last Tuesday, Robert Hogg, Esq., LL.D., in the chair, the following candidates were elected Fellows—viz., John Joseph Coleman, and Benj. T. Norton.

— MESSRS. J. VEITCH & SONS have now an extensive and beautiful display of CARNATIONS AND PICOTEEES at their Chelsea nursery which will attract many lovers of these useful town plants during the next week or two. The plants are in beds out of doors, slight protection from the sun or rain being afforded when necessary, and the blooms expand in excellent condition. All the best varieties are represented, including many promising novelties.

— THE GARDENERS' ROYAL BENEVOLENT INSTITUTION. — The forty-first annual dinner of the above Institution was held at the "Albion," Aldersgate Street, on Wednesday the 2nd inst., George Lambert, Esq., F.S.A., presiding. About 130 horticulturists and friends assembled, and after the usual loyal toasts had been duly honoured the Chairman in proposing the success of the Institution appealed for further support to the funds, and referred to the benefits that were being bestowed upon many needy persons through its means. Mr. John Lee responded in appropriate terms; other toasts being proposed and replied to by Mr. Shirley Hibberd and Mr. Alderman De Keyser.

— PERHAPS some of our meteorological readers can answer the following questions of a Pershore correspondent on AVERAGE RAINFALL:—"Is it a fact that July on an average is the wettest month in the year? and is it a fact that there are more rainy days in June (on an average) than in any month in the year?"

— THE WIRRAL ROSE SOCIETY'S ANNUAL EXHIBITION will be held at the St. George's Hall, Liverpool, on Friday, July 11th, when liberal prizes will be offered in twenty-eight classes. Gold, silver, and bronze medals are also offered, together with pieces of plate.

— POINSETTIA PULCHERRIMA. — Mr. Iggulden writes—"It has been pointed out to me by my foreman that I did not do justice on page 1 to our success with Poinsettias last season. A number of plants in 3-inch pots perfected whorls of bracts 9 inches and upwards in diameter, while those in 4½-inch and larger sizes were proportionately larger and more perfect in outline. I must, however, add that we are seldom so successful with plants in small pots, and the credit is due to those in charge of them."

— THE SHEFFIELD BOTANICAL AND HORTICULTURAL SOCIETY

announce an Exhibition of plants, flowers, and fruits, to be held on July 24th and 25th, in the Botanical Gardens of that town, when a large number of prizes will be offered. One hundred and eighty classes are enumerated in the schedule, the prizes ranging in value from £6 to 7s. 6d. The principal class is that for a group of plants arranged for effect, £6 and £4 being offered as the first and second prizes.

— GARDENING APPOINTMENT.—Mr. John Austen, who has been for eleven years gardener to Sir Greville Smythe, Bart., Ashton Court, Bristol, has been appointed the successor of the late Mr. Westland as gardener to the Earl of Dudley, Witley Court, Stourport. We believe that extensive improvements are projected at Witley Court, including the making of a new kitchen garden and the erection of glass structures, and we suspect it would be difficult to find a gardener more practical and competent to carry out the work than Mr. Austen. We had the pleasure of visiting Ashton Court last autumn, and were impressed by the admirable condition of every department of the extensive and excellent gardens.

— STRAWBERRIES AT THE BATH SHOW.—In connection with the Rose Show which is reported on another page, prizes were awarded for Strawberries as follows, the fruit being particularly fine:—The best six varieties were staged by Mr. J. House, these consisting of very fine dishes of Loxford Hall Seedling, Sir J. Paxton, Souvenir de Kieff, President, British Queen, and Countess. Mr. H. S. Dutton was a good second, and Mr. G. Garraway, third. Mr. H. Beavis, Weston, took the lead with three varieties, these consisting of Sir C. Napier, Sir J. Paxton, and Newton Seedling, all large and well ripened. Mr. A. Beavis was first with a single dish, staging extra fine Sir J. Paxton; Mr. A. A. Walters following with a fine dish of President; the third prize going to Mr. C. H. Smith for Sir J. Paxton, large and good.

— THE BEDFORD PARK GARDENING SOCIETY held a meeting lately, at which the most distinctive feature was a lecture in the garden on garden flowers by Mr. Shirley Hibberd, who was appointed to award the prizes. The lecturer went far away from the usual method of treating the subject of the lecture, for he spoke of time, space, form, and number as illustrated in the most striking manner by the characters and relations of garden plants. He began near the north pole by gathering for his hearers the creeping Willows and Birches that there prevail. He made the alpine flowers carry them back to a time anterior to the glacial epoch, and he dissected a flower of an Iris to show how plants conform in their structure to geometrical, rhythmic, and numerical principles. The address was both interesting and instructive.

— THE INTERNATIONAL FORESTRY EXHIBITION was opened on the first inst. at Edinburgh by the Marquis of Lothian, in the presence of a large company. Many foreign Governments were represented, and the Lord Provost and magistrates of Edinburgh attended in their official capacity. The Marquis of Lothian, in opening the Exhibition, said that a special object was the better forestry education of the country. The United Kingdom had more property in the world than any other nation; but in this particular it was behind other nations. We were the only country that had not a school of forestry, and we had to send our young men abroad to gain the necessary knowledge. That surely was not right, and he hoped that out of that Exhibition there would come a school for forestry which might possibly be located in Edinburgh. They had every possible advantage there; they had the Botanic Gardens, the Arboretum, the University, and the Highland Society. All these bodies took an interest in the matter, and it only required that opportunity should be given for the practical part of the work. It was not too much to hope that before long, if the money were got, they might see a school of forestry in Scotland. He appealed to the public to make the enterprise a success, and, amid hearty cheers, declared the Exhibition open.

— METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY FOR JUNE, 1884.—Mr. J. Mallender sends the following summary. "Total duration of sunshine 149.5 hours, or 30 per cent. of possible duration. The brightest day was the 28th; we had 13.7 hours of sunshine. Only one sunless day, this was the 4th June. We have had less sunshine than in the month of May, the mean difference being sixty-three hours. Total rainfall 0.77 inches, and 0.27 fell on the 8th. Rain fell on six days. This is the first time in nine years that we have had two consecutive months so dry as May and June. The velocity of the wind was fifty-eight miles per hour, and never exceeded 400 miles on any day, and fell short of 100 miles on eleven days. Mean temperature of month, 56.0°. Maximum on the 13th, 80.7°; minimum on the 1st, 32.3°;



maximum in sun on the 27th, 133.1°; minimum on the grass on the 1st, 27.4°. Warmest day, 27th; coldest day, the 1st; mean temperature of the air at 9 A.M., 59.1°; mean temperature of soil 1 foot deep, 57.8°. The corn crops are looking well, but the hay crop is short. Rain is much needed for Turnips and the garden crops generally."

### CHISWICK AND TURNHAM GREEN SHOW.

JULY 3RD.

THE fourth annual Show of the above Society was held in the grounds of the Royal Horticultural Society, Chiswick, and, favoured by beautiful weather, it proved to be a great success. As was the case last year, the Exhibition was held in two marquees, and these looked particularly bright and effective when the large number of exhibitors and their assistants had done their work and retired to give place to the Judges. Under the superintendence of Mr. Barron the necessary arrangements were rapidly and effectively carried out, and we must congratulate the Honorary Secretary, J. T. Musgrave, Esq., on the general success of the Show, which was certainly not inferior in any respect to exhibitions which have not, as in this case, to depend chiefly upon local support.

#### GROUPS OF PLANTS.

There were only two entries in Class 1, that for a group of plants arranged for effect in a space not exceeding 100 square feet, Messrs. Fromow & Sons, nurserymen, Turnham Green, securing the first prize, and Mr. Brown, nurseryman, Richmond, the second prize. These were exceptionally handsome groups, that of Messrs. Fromow containing Gloxinias, Liliums, and Gladiolus Colvilli albus amongst others, while Ferns were freely and judiciously interspersed amongst them. Mr. Brown's collection included a large proportion of Pelargoniums, agreeably relieved by Ferns, and was very attractive. Class 2 was devoted to groups not exceeding a space of 60 square feet, and this provoked a far greater amount of competition, the five groups exhibited occupying the greater portion of one side of the tent. One and all were exceedingly bright and most tastefully arranged. The first prize was secured by Mr. Wright, gardener to E. H. Watts, Esq., Devonhurst, Chiswick. This extremely attractive collection included Gloxinias, Liliums, Caladiums, and Dracaenas amongst others, and undoubtedly deserved premier honours, although the group shown by E. M. Nelson, Esq., Hanger Hill House, Ealing, was a very close second, his collection having perhaps a little more colour than that shown by Mr. Wright. The third prize was secured by Mr. Buckland, gardener to H. Pearks, Esq., Heathfield Cottage, Turnham Green.

Stove and greenhouse plants were well shown by E. M. Nelson, E. H. Watts, and H. G. Lake, Esqs., Fairlawn House, Turnham Green. In the class for six the former gentleman took first prize with the following:—Allamandas Hendersonii and Cheloni, Statice profusa (a fine plant), Genetyllis tulipifera, Plumbago capensis, and Vinca alba; these were all healthy and well grown. Mr. Watts and Mr. Lake took second and third prizes respectively. The first-named exhibitor took the first prize for six exotic Ferns, showing large and healthy plants, Messrs. Lake and Nelson being second and third. Fine-foliage plants were also well shown, Mr. Brown, Richmond, securing first honours in the class for six with excellent specimens. Mr. E. M. Nelson was a good second, and Messrs. Fromow & Sons took the third prize. The first prize for six Caladiums fell to J. R. Starling, Esq., the second to H. Pearks, Esq., and the third to Mr. E. M. Nelson.

In the class for six Coleuses Mr. Watts was again to the fore with excellent plants of good colour, Mr. Starling securing second and Mr. Lake third prizes, a special third prize being awarded to J. J. Flack, Esq., Hampton Road, Twickenham. Mr. Watts also took the first prize for three Fuchsias, and Mr. Lake the second. The latter gentleman was also second in the class for six Zonal Pelargoniums, Mr. Flack being placed first. Begonias were admirably shown by Messrs. Starling, Nelson, and Pearks, who took first, second, and third prizes respectively. In the class for Lycopods Mr. Watts easily secured first prize with six really magnificent Selaginellas, many being of large size and remarkably healthy appearance. The second prize fell to Mr. Nelson, and the third to Mr. Starling. Cockscombs were fairly well shown by H. Smith, Esq., Hogarth Lane, Chiswick, as were Gloxinias by Mr. Starling and Mr. Flack, all of whom secured prizes. Six splendid plants of Achimenes from Mr. Flack easily secured first prize in Class 16, Mr. Watts being second. In the class for plants for table decoration Messrs. Nelson, Hardy, and Starling secured the prizes.

CUT FLOWERS.—Of these there was an excellent display, the Roses, as a matter of course, being strongly to the fore. In Class 18, for twenty-four cut blooms of Roses, the first prize was secured by Messrs. G. Bunyard and Co., nurserymen, Maidstone, for a splendid box, in which A. K. Williams, Marie Baumann, and Madame Gabriel Luizet were especially noticeable. The second prize was awarded to Miss Christy, Coombe Bank, Kingston-on-Thames (Mr. Moorman, gardener), and the third to Mr. Pearks. Mr. Nelson won the first prize for six cut blooms, the second going to Mr. H. Pearks, and the third to G. H. Jupp, Esq. In Class 20, for twelve bunches of cut flowers, distinct, the first prize was secured by Mr. Nelson with an attractive stand, and the second by Mr. Watts. Mr. Nelson took first prize for twenty-four cut blooms of Gloxinias, and also for twelve bunches of Zonal Pelargoniums, Mr. Starling being second and Mr. Smith third in the latter class. Prizes were also provided for bouquets and button-holes, Mr. Brown, Mrs. Morris, Mr. Watts, and Mr. Nelson being the chief prizetakers.

FRUIT.—The exhibits in the various fruit classes were not remarkable in any way, Messrs. Lake, Watts, and W. Lindell taking the prizes for Strawberries. Gooseberries and Currants were fairly shown. Although Grapes were not largely shown, the quality was excellent. In the class for two bunches of black Grapes Mr. Lindell was deservedly awarded first prize for large and well-ripened bunches of Black Hamburgh. Mr. Watts was second, and Mr. C. A. Daw, Homefield, Ealing, third with the same variety. The last-named gentleman was first in the class for two bunches of white Grapes, excellent bunches of Duke of Buccleuch and Buckland Sweetwater being shown.

VEGETABLES.—These occupied a large portion of the space, the exhib

being fairly good. For nine dishes of vegetables Mr. C. J. Waite, Esher, was placed first, Sir H. Meux second, and Mr. Watts third.

Special prizes were offered by Messrs. Carter & Co. for Peas, by Messrs. Sutton for vegetables. Messrs. Carter's prizes were won respectively by Mr. Ward, Longford Castle, Salisbury; Mr. Morton, Aylesbury; and Mr. Waite; while the prizes offered by Messrs. Sutton were won by Mr. Waite, Sir H. Meux, and Mr. Flack in the order of their names.

Amongst the most noticeable miscellaneous exhibits were a splendid group of plants shown by Mr. May, gardener to the Marquis of Bute, most attractively and tastefully arranged; a really fine brace of Model Cucumbers from G. Wright, Esq., The Elms, Acton; and a large and handsome group of hardy ornamental trees in pots from Messrs. C. Lee & Son, Royal Vineyard Nurseries, Hammersmith. This group occupied the upper end of one of the marquees, and was very attractively arranged.

### FUCHSIAS AS PILLAR PLANTS.

In greenhouses and conservatories there are few plants or flowers capable of making more showy and beautiful pillar plants than Fuchsias. Most people admire a well-grown Fuchsia in a pot as a stage or window plant, and the more natural their habit and profuse their bloom the better, but we never saw any pot plants surpass those planted out and trained up pillars. In the conservatory here we have many pillar Fuchsias 8 feet and 10 feet high, and from early spring throughout the summer and until late autumn they are very beautiful. Excepting tying the main stems to the pillars no attempt is made at training, and the side branches, many of which are 3 feet and 4 feet in length, hang all round in natural profusion. On the pathway side of the house they often almost stop the way. Armfuls of flowers may be cut from them, and it is in this way they are generally kept within bounds, as when the strong shoots are shortened almost to the main stem in cutting away the flowers they soon sprout out again and give a grand succession of bloom. No one with the means of planting out Fuchsias should neglect the opportunity. Any kind of greenhouse or conservatory bed is suitable for them, and a good mixture of loam, manure, and sand is the best rooting mixture which can be used for them. The time to plant is of little importance. Now is as good as any. Plants growing freely in pots now may be turned out with advantage, as if carefully handled they will receive no check, but grow and form large plants by the autumn.—M. M.

### WINCHESTER SHOW.

LAST Thursday historical old Winchester was *en fête*, that day being the septcentenary of the mayoralty, or the seven hundredth anniversary of the incorporation of the city. Amongst the visitors on the occasion was the Lord Mayor of London, also many ecclesiastical and civic dignitaries; and amongst the events in honour of the rare occurrence was the Flower Show—the first summer Exhibition of the Winchester Horticultural Society, which was established last year, and provided a very successful Chrysanthemum Show in November. When we find, as we are pleased to do, a balance of £76 on the right side of the ledger on the occasion of an autumn show, we cannot but regard it as a most favourable circumstance and good augury of future success, for autumn shows are certainly by no means invariably financially profitable. The Society is favoured above many others by very influential patronage, a good number of subscribers, and a prudent and practical executive Committee. This, the schedule of the Show under notice clearly indicates, for the funds are not frittered away over the greatest possible number of classes, nor lavishly disposed of in a few sensational prizes. No doubt competitors would be glad to see the amounts increased in several of the classes, and it may be taken for granted the Committee will be equally glad to increase them as soon as this can be done; in the meantime the wise policy has been adopted of incurring no serious risks, and thereby the support of the well-to-do inhabitants of the city and district and also the co-operation of exhibitors is merited. That there are skilful growers of garden produce in the locality every department of the Show afforded ample evidence, for although competition was not keen in all sections, yet in every one of them—plants, flowers, fruit, and vegetables—excellent examples of culture were staged.

In addition to the prizes offered by the Society in amounts ranging from £6 downwards to a few shillings, the Commemoration Committee of the Septcentenary provided £20, in three prizes of £10, £6, and £4, for seventy-two Roses. The Exhibition was held in the grounds of Wolvesey Palace. The heat for the first day was oppressive, and this, with the counter attractions in the city, possibly limited the attendance in the afternoon, yet towards evening visitors appeared numerous; and it is hoped that at the close of the two days the Show will have proved in every way satisfactory. In referring to the exhibits only the most prominent can be particularised.

PLANTS.—The first class in the schedule was for twelve stove and greenhouse plants, six to be in flower, the prizes being £6, £4, and £2. Mrs. Pearce, The Firs, Bassett, Southampton (Mr. Wills, gardener), secured the first position with admirably grown specimens. The foliage plants comprised two healthy Palms, a Latania and Seaforthia, Cycas revoluta in wonderful colour; a fair Dasylium, a remarkably fine Croton Queen Victoria, and a bright and healthy Cocos Weddelliana. The flowering plants were a Stephanotis, Cypripedium barbatum, very good; a Kalosanthes in first-class condition; a Clerodendron, a large specimen Tuberous Begonia; and a good plant of Impatiens Sultan. R. King Wyndham, Esq., Corhampton House, Bishops Waltham (Mr. Cox, gardener), was an excellent second, his most effective specimens being Acalypha tricolor, highly coloured; a standard Bougainvillea, a good Allamanda, and a very fine example of Nephrolepis davallioides furcans; Croton angustifolius was also extremely bright, and Medinilla magnifica very healthy. Mr. Hillier, nurseryman, Winchester, secured the remaining prize with good plants, including the best Heaths in the Show. In the class for six specimens W. H. Myers, Esq., Swanmere Park, Bishops Waltham (Mr. Molyneux, gardener), was distinctly ahead, securing the first prize with Alocasia macrorrhiza variegata, Cissus discolor, and Croton Queen Victoria, all in superb condition; the flowering plants being a Bougain-



villea, very fine; Allamanda Hendersoni, good; and Begonia Empress, a splendid glowing bush,  $4\frac{1}{2}$  feet in diameter. The other collections were nearly equal in merit, the second prize going to R. Moss, Esq., M.P., Weston Grove, Southampton (Mr. Hunt, gardener), with specimens of uniform size, the best being a fresh Dipladenia, equal third prizes being awarded to the Earl of Northbrook, Stratton Park (Mr. Gandy, gardener), and Miss Bateman, Winchester (Mr. Prouting, gardener), with irregular-sized plants, the former staging a superb example of Kentia Fosteriana, and the latter a fine example of Woodwardia radicans. In single specimen flowering plants Mr. Cox won first honours with a conical-shaped Bougainvillea, Mr. Molyneux being an exceedingly close second with a noble plant of Begonia Emperor, and Mr. Wills third with a good Begonia. In the corresponding class for foliage plants Mr. Wills was first with a healthy Cocos, and Mr. Hillier second with Cycas revoluta.

**EFFECT GROUPS.**—Although there was quite an imposing row of these in the form of a long sloping bank, with no division between each exhibit, we are bound to say that the effect was not satisfactory. Had the groups been semicircular in form and isolated, each backing against the sides of the marquee with specimen plants down the centre, not only would a better general effect have been produced, but the competitors could have associated their plants to better advantage in the classes under notice. Almost without exception the groups were too crowded and formal, there was a want of lightness and relief as a rule, and in some cases the packing was very pronounced. By far the best arrangement was that with which Mr. Wills secured the first prize in the open class. Though the plants were small they were in the best of health, and agreeably disposed. At the back was an excellent plant of Areca lutescens; then the groundwork of the space was formed with small plants of Caladiums, Coleuses, a few Cypripediums, Gloxinias, and small Zonal Pelargoniums, healthy young Cocoses rising above them, and here and there a Dracena, the front being margined chiefly with variegated Panicum. Mr. Hillier had the second prize in this class with a much more imposing group, the plants being altogether larger, but simply crowded together to form a heavy bank of flowers and foliage. In the class excluding nurserymen there was severe competition, and the Judges had a difficult task in determining the relative merits of the several groups. J. W. Flight, Esq., Cornstiles, Twyford (Mr. Neville, gardener), was placed first. This group had a good back of Palms with a good Fuchsia, prominent and not crowded, in the front of them, the rest of the arrangement consisting mainly of Maidenhair Ferns, Show and Zonal Pelargoniums, and a front of small Coleuses, Isoplepis, and Lobelias. Some of the plants were fully too large for the purpose, but they were not packed to form a smooth unbroken surface. C. W. Shipley Esq., Twyford Moors (Mr. Axford, gardener) was placed second with very neat, fresh, and healthy plants much too smoothly arranged, yet not overcrowded, this latter circumstance, we presume, giving him the preference over some of his rivals. Mr. Hunt won the third position with a low, undulated, but somewhat packed group, and a fourth prize was awarded to Mr. Astridge, the plants being too much crowded at the back, while pots were too visible in the front of the group; but for a smooth heavy formal background Mr. Gandy would have won a good position, the front part of his arrangement being one of the best. This brief critical report of what was the weak point, and might have been one of the strongest in the Show, may possibly contain a few hints that may be useful. Perfection, or anything like it, is not to be expected at a first show, and we have seen many worse "first attempts" at arranging plants effectively than those above referred to.

Ferns very well shown by Messrs. Cox, Hunt, and Astridge, who secured the prizes in the order named; Begonias from Mrs. Warner, Worthy Road, Winchester (Mr. Munt, gardener) were very fine; table plants from Messrs. Wills, Cox, and Molyneux, neat and fresh; while Gloxinias from Mr. Prouting, and Petunias from Mr. Astridge, were creditable examples of culture. Mr. Molyneux staged the best hardy cut flowers—a very excellent stand of twelve varieties.

**Roses.**—Upwards of thirty prizes were offered for these, varying in amounts from £10 to 5s. Many beautiful stands were arranged, but the effects of the hot weather were apparent in many small flowers. On the morning of the Show Mr. Charles Turner found the heat too great for him to compete. The chief prize of the Commemorative Committee was won by Mr. B. R. Cant, Colchester, with splendid examples. Messrs. Keynes, Williams & Co., Salisbury, had the second prize with good blooms. In the class for forty-eight varieties Mr. B. R. Cant was again to the fore, followed closely, however, by Mr. Frank Cant and Messrs. Keynes in the order named. Those exhibitors retained their positions in the class for twenty-four triplets, all staging admirably. Mr. Frank Cant won the premier position with twelve Teas or Noisettes with blooms of remarkable merit. Madame H. Jamain, Niphotos, Maréchal Niel, Catherine Mermet, Caroline Kuster, Souvenir d'Elise, Devoniensis, Etoile de Lyon, Adam, Jean Ducher, Marie Van Houtte, and La Boule d'Or composed the varieties in this fine stand. Mr. B. R. Cant was a close second, his blooms being a little looser and more expanded. The prizes for twelve Roses of any dark variety were won by Mr. B. R. Cant and Mr. Hillier respectively, both with Alfred K. Williams; for twelve of any light variety by Mr. Hillier with La France, followed very closely by Mr. B. R. Cant with Merveille de Lyon, wonderfully fine, but too advanced; for twelve of any Tea or Noisette by Mr. Frank Cant (first) with Souvenir d'Elise, splendid, and Mr. B. R. Cant with good examples of Devoniensis. In the local classes Mr. Flight won most of the first prizes, followed by Captain Ramsay, both of whom exhibited many excellent blooms. Mr. Hillier exhibited several plants of the small white flat-petalled cluster Rose Anna Montravel, which in 5 or 6-inch pots is admirably adapted for decorative purposes. The Messrs. Flight won most of the prizes for epergnes, baskets of flowers, and for the decoration of a dinner table; and eighty-four baskets of wild flowers were staged.

**Fruit.**—The display of this was limited. Lord Eversley (Mr. Wildsmith, gardener) sent a splendid collection, not for competition, consisting of three Pines, six bunches of Grapes, two Melons, two dishes each of Strawberries, Peaches, Nectarines, and Figs, and one dish of Cherries; a more meritorious exhibit than this is not often seen, and it was highly commended by the Judges and greatly admired by visitors. In the classes for black Grapes the first prize went to Mr. Molyneux with good large-berried, well-finished examples; equal second prizes being granted to Mr. Cox and Mr. J. Dauncey, gardener to J. B. Stane, Esq., Buckfield. Mr. Molyneux was first also for

white Grapes, with well-finished Buckland Sweetwater, Mr. Galton being second with the same variety. Mr. Molyneux was first in the scarlet-flesh Melon class with Scarlet Gem, and Hero of Lockinge in the green-flesh was the best. Mr. Molyneux secured the chief prize in the class for nine dishes of vegetables with superior produce, followed by Mr. Dauncey, who also exhibited well. Messrs. Elcomb & Son, Romsey, were highly commended for a splendid collection of Zonal Pelargoniums in 5-inch pots. The Show was admirably managed by Messrs. Porter and Colson, the Honorary Secretaries, assisted by members of the Committee; and in connection with it was the exhibition of the Hants and Isle of Wight Beekeepers' Associations, which was largely attended.

## ANEMONES.

(Continued from page 399, last vol.)

**A. PALMATA, L. (The Cyclamen Windflower).**—One of the most distinct members of the genus, and to those fond of curious flowers one of the most attractive, and is really worth a little extra care in the selection of soil and position, which should be a mixture of equal parts of sandy loam and peat in a moderately shady and damp position on the flanks of the rockwork. It is a native of most of the countries bordering on the Mediterranean, and was originally introduced into this country from Portugal about 1597. It is well figured in "Botanical Register," 200. The leaves are cordate, blunt, three to five-lobed, slightly toothed, and somewhat hairy, arising from an elongated tuberous rootstock. The flowers, which appear in May and June, are solitary on stems 6 inches in height, bright yellow, and remaining closed during dull weather, flower stems having trifid sessile bracts. It may be easily raised from seed, which is, however, not often ripened in this country, at least such is the writer's experience.

**A. PALMATA ALBA.**—A curious whitish variety, of no merit except for its rarity. It is now, however, much more easily procurable than formerly.

**A. PALMATA FL.-PL.**—An exceedingly rare and choice form, only once seen by the writer in an old private garden in North Wales, and were it diligently sought after would no doubt be found in various similar places. It was described by Sweet, but the reference cannot be given at present, and is figured in "Omnium Stirpium Sciagraphia," 461, 2, by Dominic Chabrey, 1677.

**A. PAVONINA, Dec. (Peacock Anemone).**—A native of the South of France, closely allied to A. stellata, from which it mainly differs by its petals being much more acute. Several of the plants now cultivated as A. stellata fulgens fl.-pl., duplex, &c., would no doubt if investigated be referred to this species rather than to A. stellata.

**A. RANUNCULOIDES, L.**—One of the prettiest and most interesting of the smaller species, closely allied to the Wood Anemone; indeed, although really distinct, it might be readily described as a yellow form of that plant. It is found in a quasi-wild state in several localities in the south and east of England, but is usually regarded as a doubtful native. Its flowers are produced in March and April, and are of a clear, bright, golden yellow, usually solitary, but occasionally in pairs, about the same size as A. nemorosa. In cultivation this plant thrives in a good calcareous loam, either in the herbaceous border or on the lower slopes of the rockwork in association with dwarf shrubs, &c.

**A. STELLATA, DC.; hortensis, L.; versicolor Salisbury (Star Anemone).**—The parent of the other race of florists' Windflowers, chiefly mentioned here on account of its most beautiful and useful variety fulgens, of which it can only be said that it is by far the finest red spring-flowering hardy plant, conspicuous both by the peculiarly dignified pose of its blossoms, and also by the striking contrast of its brilliant vermilion sepals and the jet black of the stamens and pistils. It is tolerably common in a wild state both in Italy and Greece, and is now so common in this country that tubers may be procured in autumn from almost any seedsman. As to soil or position it is not at all fastidious, and if preferring those of a light and dry nature it will not refuse to grow even in the most cold and tenacious soils; it is in short, a plant that ought to be planted not by ones or twos, but in hundreds and thousands everywhere—on the rock garden, in the herbaceous border, the reserve ground, on the semi-wild shrubbery, bearing in mind that its flowering season may be greatly prolonged by successional planting from October to May.

**A. TRIFOLIA, L.**—A dwarf-growing plant resembling the Wood Anemone, and found in sub-alpine forests from France to Siberia. The leaves are, as the specific name implies, very distinctly trifoliate. Flowers white, solitary, on stems about 6 inches in height, from March to June; prefers a half-shady position, but will grow freely in any soil. There are two very pretty varieties, both at present rather uncommon, differing only from the type in colour, to which the names—viz., cœrulea and rosea, will give a sufficient clue.

## NARCISSIFLORA SECTION.

This division is perhaps, as a whole, less known than any of the others, and also, it must be said, somewhat less deserving of notice, but still containing at least two species widely known, and both very beautiful—viz., A. sylvestris and A. narcissiflora. This group may be distinguished by their fibrous roots; seeds tailless, ovoid, or compressed, and enveloped in a mass of down, causing them to adhere to each other. Their geographical range is great, being from central Europe through Asia and to the eastern coast of America. Their culture may be very briefly mentioned here, because, excepting A. narcissiflora, they will thrive and hold their own in any position or soil short of that of the very driest nature.

**A. NARCISSIFLORA, L.**—A most distinct and handsome species, found



usually in Siberia, from whence it was brought to this country about 1773. It is figured in "Bot. Mag." 1120. The leaves are deeply divided in a palmate manner, and are somewhat hairy, the lobes being toothed. The flowers, which are borne in simple umbels, are creamy white, about an inch in diameter, and appear in June. The whole plant when doing well attains a height of from a foot to 15 inches. It seems to prefer an open sunny spot in a good loamy soil containing a considerable quantity of chalk or limestone, but often does well in ordinary garden soil.

**A. PENNSYLVANICA, L.**—As the specific name implies, this is a native of North America, and was first cultivated in this country in 1766. This plant is also of an erect habit, with rather coarsely palmately divided leaves; the flowers, which are white, rather smaller than those of *A. narcissiflora*, are freely produced in June, and are very pleasing, although this species, in common with *A. rivularis* and *virginiana*, does not, by reason of the shortness of the pedicels, raise its flowers sufficiently above the foliage to be as showy as many others.

**A. RIVULARIS.**—Another American species very similar to the last, differing principally by its larger flowers, which are also produced about a month or six weeks earlier.

**A. SYLVESTRIS, L.** (The Snowdrop Windflower).—Certainly a very distinct and ornamental species, well known and appreciated, as it has been an inhabitant of our gardens since the closing years of the sixteenth century. The leaves are usually ternate, with deeply toothed segments slightly hirsute. Those of the involucre, unlike the rest of this section, are stalked; as for the flowers which are borne on stems  $1\frac{1}{2}$  to 2 feet in height. It will thrive under the shade of trees nearly as well as in the most select border.

**A. VIRGINIANA, L.**—An American species, figured in Paul Hermann's "Paradisus Batavus," 18, 1798, but it had been cultivated in England for nearly fifty years previous to the publication of that work. It much resembles *A. rivularis*, but is considerably smaller in all its parts, flowering at the same time, but preferring a soil containing a fair amount of peat and sand.—G. GUTHRIE.

(To be continued.)

## TUNBRIDGE WELLS.

JULY 4TH.

ADMIRABLE as the Tunbridge Wells Shows invariably are, that held on Friday last has considerably increased their horticultural fame, for the exhibits throughout were more thoroughly satisfactory than we have seen this season. Every class contained entries of a highly meritorious character, and there was a notable absence of weak specimens, which imparted to the Show a neatness and finish that was most pleasing. The plants in particular were distinguished by a fresh appearance, which is very unusual in July, flowers being abundant and bright, the foliage plants strong and handsome. The Society was also favoured by the weather, which was exceedingly fine though hot, and during the afternoon and evening a large number of visitors assembled, completing the success of one of the best exhibitions of the year.

**Stove and Greenhouse Plants.**—Several classes were devoted to these, the competition being close and the exhibits of considerable merit. Four collections of eight plants were staged, Mr. Gilbert Hastings winning first honours with well-grown examples of *Kalosanthes coccinea superba*, grandly flowered; *Statice profusa*, fresh and healthy; *Aphelaxis macrantha rosea*, neat and well flowered; *Allamanda Hendersoni*, handsome; and *Dipladenia amabilis*. Mr. Tudgey followed closely with *Erica obbata*, *Clerodendron Balfourianum*, and *Allamanda nobilis* in fine condition. J. Warren, Esq., Handcross Park, Crawley (gardener, Mr. Rann), took the third place, showing *Hedera tulipifera*, *Erica depressa*, and *Kalosanthes coccinea* in admirable condition. The same number of competitors entered with four specimens, and in that class also the exhibits were of nearly equal merit. T. W. Temple, Esq., Leyswood, Groombridge (gardener, Mr. J. Moorhouse), secured the chief position with *Allamanda Hendersoni*, *Erica obbata*, *Stephanotis floribunda*, and *Kalosanthes coccinea*, fresh beautiful plants, flowering most profusely. Mrs. Spottiswoode, Coombe Bank, Sevenoaks (gardener, Mr. Bolton), won second honours with praiseworthy specimens of *Clerodendron fallax*, which Mr. Bolton grows extremely well; *Statice imbricata*, and *Anthurium Schertzerianum*. Mr. Gilbert was third with less fresh but fairly good plants. The best six specimens were from F. F. Barrow, Esq., Holmewood Park (gardener, Mr. S. Pope), who contributed *Ixora Griffithii*, *Allamanda Hendersonii*, and *Clerodendron Balfourianum* in first-rate condition. Mr. Bolton was a very good second, his plants including *Clerodendron fallax*, *Statice profusa*, *Kalosanthes*, and *Bougainvillea glabra* in perfect health. The Marchioness of Camden, Bayham Abbey (gardener, Mr. Johnston) followed, his most noteworthy plant being *Dipladenia boliviensis*. There was also a class for four plants, and again four competitors entered. Mr. Cooke was first with *Epidendrum prismatocarpum*, *Disa grandiflora*, *Cattleya gigas*, and *Anguloa Ruckeri sanguinea*, all very healthy and bearing numerous flowers. Mr. Pope followed with *Allamanda Hendersoni* in capital form, Mr. Aylwood taking the third position, one of his best specimens being *Plumbago capensis*.

Pelargoniums formed a bright portion of the display, the plants being well grown, healthy, and profusely flowered. Mr. J. Wilkins, Shirley, Croydon, led with six Show varieties, his plants being very creditable examples about 3 feet in diameter, but they were not quite forward enough. Mr. Shoobridge, The Gardens, Fern Bank, and F. R. Lachem, Esq., The Wilderness, Tunbridge Wells (gardener, Mr. Turner), was third. Mr. Wilkins was also first with six Fancy varieties, neat beautiful plants, Ellen Beck and Madame Sainton-Dolby being uncommonly good. Mr. Allan was second with similar plants. The best six double Zonal Pelargoniums were staged by Mr. Wilkins, excellent specimens of The Rover, Madame Baltet, and Madame Thibaut being notable, Mr. Allan taking the second place with good plants in that class and the first with six single Zonals, Apple Blossom being very prominent in his collection.

Fuchsias were well represented by vigorous freely grown plants bearing

abundance of flowers after the style of the west of England specimens. Mr. Turner won first honours with bushy plants, Arabella and Mont Blanc being the two best. Mr. Shoobridge followed, showing Rose of Castile and Venus de Medici in capital condition; Mr. Bilby taking the third place. Tuberous Begonias were uncommonly fine for a provincial show, as very rarely are such strong handsome plants seen out of the metropolis. Mr. J. Allan was awarded the first prize for grandly flowered plants, the blooms of great size and substance, and very rich in colour. Admiration well merited its name, for it was extremely prominent owing to the size of its brilliant blooms. Messrs. Beilby and Bolton followed with smaller but well-grown plants. Achimenes are invariably good at Tunbridge Wells, and on this occasion they well maintained their fame. C. Reilly, Esq., Nevill Park (gardener, Mr. H. Scammell), was first with fresh, even, handsome specimens, longiflora major and Mauve Queen being the best. Mr. Moorhouse was second, having Margaretta and Ambrose Verschaffelt very good.

**Fine-foliage Plants.**—As with the flowering plants the classes for fine-foliaged plants were well filled and the plants in grand condition. Mr. Tudgey gained chief honours for eight magnificent plants, amongst which *Croton Johannis* richly coloured, a remarkably handsome globular specimen; *Cycas circinalis*, very large and healthy, and *Kentia australis*, a most graceful specimen. Mr. Rann was a very close second, his most effective plants being *Thrinax elegans*, *Dasylirocn acrotrichum*, very fine; *Phoenix tenuis*, *Croton princeps* and *C. Williamsi*, both beautifully coloured. Mr. Gilbert won the third prize, showing *Chamaerops Fortunei*, *Cycas revoluta*, *Croton Johannis*, *Kentia Fosteriana*, and *Phoenix tenuis*. With six fine-foliage plants Mr. Rann won the principal position with beautiful specimens, the best being *Todea africana*, *Croton picturatus*, *C. Challenger*, and *Phoenix reclinata*. Mr. Moorhouse was placed second, his collection being a wonderfully fine specimen of *Phormium tenax variegatum*, about 12 feet in diameter, in perfect health and well coloured; *Cycas revoluta*, *Areca sapida*, and *Croton Weismanni* being also good plants. Mr. Johnston took the third prize, *Davallia Mooreana* in fine condition, and *Latania borbonica* being unusually good.

Only one lot of eight Ferns was entered, Mr. Pope securing first honours for small but healthy plants, of which the most notable were *Adiantum concinnum* and *Onychium japonicum*. Two good collections of six Ferns were staged, Mr. Bolton leading with extremely vigorous specimens of *Adiantum cardiochlaena*, *Davallia Mooreana*, *D. bullata*, *Dicksonia antarctica*, and *Balanium culcita*. Mr. Wilkins won the second place, showing *Adiantum formosum* and *Asplenium Belangeri* fresh and healthy. For twelve hardy Ferns Mr. Allan was first with neat specimens, *Polystichum plumosum* and *Scolopendrium vulgare crispum* being especially noteworthy. Mr. Scammell, who followed, had *Osmunda gracilis*, *Onychium japonicum*, and *Polypodium maximum* in first-rate condition. Three admirable collections of six Selaginellas were entered, Mr. Scammell and Mr. Aylwood being awarded equal first prizes for extremely fresh even specimens of *Lobbi*, *Martensi*, *apus*, *Kraussiana aurea*, *Wildenowii*, and *uncinata*. Mr. Bashford secured second honours, showing *uncinata*, *formosa*, and *Martensi* in healthy condition.

Caladiums and fine-foliage Begonias contributed largely to the extent and beauty of the Show, Messrs. Allan, Bashford, Turner, Scammell, Beilby, and Johnston securing the principal awards.

**Groups.**—The competition is invariably keen in the class for a group of plants arranged for effect, and at the last Show there were no less than seven exhibitors. Premier honours were awarded to Mr. G. Fennell for a light, graceful, yet effective arrangement, in which there was a good proportion of elegant Palms of the *Areca aurea* and *Cocos Weddelliana* types, with *Aralias*, the groundwork consisting of *Caladiums*, *Crotons*, *Pelargoniums*, and *Acalyphas*, with a neat margin of *Selaginellas*. Mr. Bolton followed with a group which was as regards gracefulness equally as good as the first, though it was scarcely so well finished. *Francoa ramosa* was freely employed, and produced a pretty effect in contrast with the bright scarlet flowers of *Clerodendron fallax*, the margin being of Ferns and *Panicum variegatum*. Mr. G. Cooke was third with a pretty group, Foxgloves and *Campanulas* being tastefully employed. Mr. Wilkins was fourth, Mr. Bashford fifth, and Mr. S. Pope sixth, all with good groups but rather heavier than the three first named.

**Cut Flowers.**—There was a close competition in all the leading classes for flowers, but the Roses were the most numerous, and were generally of excellent quality, size, substance, and colour being good; but the Teas, as at other shows this season, surpassed the majority of the Hybrid Perpetuals. In the amateurs' class for twenty-four Roses T. B. Haywood, Esq., Woodhatch Lodge, Reigate (gardener Mr. Ridout), took the lead with fresh handsome blooms, being followed by Rev. R. C. Hales and Messrs. H. Saunders and Allan. Mr. Ridout was also first with twelve Roses equally as good as those in the other class, Messrs. Allan and Rev. Canon Hodgson taking the second and third places in that class. Canon Hodgson was the premier exhibitor of twelve Teas with beautiful blooms, particularly fine being Catherine Mermet, large and handsome, for which the National Rose Society's bronze medal was awarded. Messrs. Allen and Ridout were the other prize-takers. In the nurserymen's classes there were some good stands, Messrs. Bunyard & Co., Maidstone, securing the principal award with even substantial blooms, including a superb example of A. K. Williams splendidly formed, for which the National Rose Society's silver medal was awarded as the best Hybrid Perpetual Rose in the Show. This grand Rose, though exposed to the heat for nine or ten hours, appeared at the close of the Exhibition nearly as fresh as when first staged, and was certainly one of the best of the many fine examples of the variety that have been exhibited this season. Mrs. Woollard, Lewes, and Messrs. Kinmont & Kidd were second and third with good blooms remarkable for their freshness. Mr. Buston was a good first in the local classes, his Etienne Levet running very close for the silver medal. Messrs. Bunyard, Mrs. Woollard, and Mr. G. W. Piper were the prizetakers in the class for forty-eight Roses, all showing well.

Flower-stands were numerous, and the majority were very tasteful. Miss Chard, Clapham Common, who has distinguished herself at many shows by her graceful arrangements, was placed first with a pretty combination of *Bouvardias*, *Gladiolus Colvilli alba*, and single *Kalosanthes* flowers, with Grasses and Ferns. Mrs. Bishop was second with tasteful stands, in which *Rhodanthes* and *Fuchsias* with *Bouvardias* predominated, Water Lilies being employed at the base. Mrs. Fennell was third with central plants of *Cocos Weddelliana*, surrounded by fine *Allamandas* and other flowers. For one



stand Mrs. Bishop, Mrs. Gilmore, and Miss Chard were awarded the prizes in that order. Buttonholes and bouquets were very numerous, no less than twenty-two of the former being entered, Mr. G. W. Piper, Miss K. R. Ware, and Mrs. Bishop securing the chief prizes; while in the bouquet classes Mrs. Bishop and Miss Chard were the most successful. Messrs. Johnston, Bolton, and Turner won the prizes for collections of cut flowers with beautiful examples.

*Fruit.*—The principal class in this section was that for a collection of fruit, Mr. A. Waterman winning chief honours with Black Hamburg and Buckland Sweetwater Grapes, the former well coloured; a neat Queen Pine, Frogmore Early Cherries, Strawberries, Peaches, and fine Elruge Nectarines. Mr. Hopgood took the second place, his Cherries, Grapes, Peaches, and Nectarines being good; and Mr. Fennell was third with fine Peaches and well-coloured Grapes. There were eleven exhibitors of three bunches of black Grapes, Mr. Henderson leading with handsomely coloured Black Hamburg, large in bunch and berry. Mr. Moorhouse and Mr. F. Morris followed with same variety. Capt. Taylor, Glenleigh, Hastings (gardener, Mr. Gore), had the best three bunches of white Grapes, Muscat of Alexandria large in bunch and berry, but not quite perfect in colour. Mr. Waterman was second with Buckland Sweetwater, and Mr. Fry third with Muscats. Mr. Gore also won chief honours with three varieties of Grapes, having Buckland Sweetwater, Madresfield Court, and Foster's Seedling, all of good colour. Messrs. Allan and Bolton followed. Eight dishes of Peaches were staged, Mr. Bashford leading with Royal George, Mr. Fennell second with Noblesse, and Mr. J. Allan third. For a dish of Nectarines there were the same number of entries, Mr. Bashford being again first with Stanwick Elruge of fine colour; Mr. S. Pope second with Humboldt, and Mr. Allan third. Melons, Cherries, and Cucumbers were finely represented, the exhibitors already named securing most of the prizes. Mr. J. Rust, The Gardens, Eridge Castle, sent a collection of fruit not for competition, including four fine Pine Apples, Grapes, and Melons.

Vegetables were not in strong force as regards numbers, but the two collections from Mr. Waterman and Mr. Johnston were both of great merit and very nearly equal, though the prizes were awarded in the order they are named. Cottagers' productions had a tent devoted to them, and were of excellent quality.

### MANURES.

[AN abstract of an essay read before the Western New York Horticultural Society by Professor G. C. Caldwell.]

We can force the unwilling nitrogen of the atmosphere about us into chemical combination, so that it can be made food for the crops; we can thus supply you with all the ammonia you want, if you can afford to pay us a fair profit for our pains. We cannot, to be sure, make a particle of potash or of phosphoric acid; but there are inexhaustible stores of these plant foods in the bowels of the earth, or even at its very surface; of potash salts in the mines of Germany, and of phosphates everywhere; and these we can serve up for your crops in any forms that you may desire to present to them, if you can find out what they want, and how they want it, and can make them pay for it. All this could be easily done; and the chemists would rejoice over their prosperous factories and well-filled pockets, and the fruit-growers over their heavily laden Vines and orchards, and all be as happy as a marriage bell, were it not for those *ifs*: if you can find out just what your crops want and will pay for, and will pay for so well, and so unfailingly, that you can afford to pay the chemists their fair wages.

Everybody wants more manure now, and the scramble for it is so lively around all the large towns and cities, that even those living close by cannot get enough, and those living in the country are left entirely out in the cold. Now, what can we do about this matter? I am not a manufacturer of manures, and as I have no desire to engage in that business, it is fair for me to infer that I might, perhaps, be able to suggest some method which would enable you to provide yourselves with it, without ransacking all the city stables and scraping up eagerly the last portions of that mixture of much straw and little excrement that goes by the name of manure, but is often worth more for a mulch than for plant food. But all that I can really do is, perhaps, to help you to lay out some course of action, to be both based upon and tested by reason, experiment, and experience. My first step should be to find out whether there is any solid foundation of facts upon which to lay such a course of action. Let me state what appear to me to be such indisputable facts.

As my first, bottom fact of all, I would give this. Supposing that a man sets out with the right kind of location, soil, markets, &c.; he can keep his fruit farm in a good condition, and make all the money that the case will admit of, provided that he can get all the stable manure that he wants, of a fair quality, and at a fair price. You will certainly admit this as a fundamental fact; if not, I might as well stop right here, for I must build the rest of my foundation on top of it. Supposing this to stand, let us inquire next, What are the materials contained in the stable manure that give it such a universal value? They are, no doubt, its nitrogen in various forms of combination, its phosphoric acid in the form of phosphates, its potash and its lime, neither of them in the forms familiar to us in the potash from ashes and quicklime, but as entirely neutral or inactive compounds; and its organic matter, as the chemists call that part of it which may be burned off by fire, and is burning up in every hot pile of fresh manure, that is becoming fire-fanged. There are other matters in the manure—sulphuric acids in the sulphates, silicic acid in the silicates, chlorine in the chlorides, and magnesia and iron in chemical combination; and they undoubtedly take more or less part in the useful effect of the manure as a whole; but there is not any accumulation of evidence, either in the results of experience or of experiment, to show that these substances take more than a very unimportant part in the work; and as we are after only well-established facts that hold good

under all general conditions, we leave these substances out of the count. Nitrogen, phosphoric acid, potash, lime, and organic matter to make vegetable mould—these five materials, if furnished to the crops in suitable forms and in suitable quantities and in a suitable manner, would, for many years at least, in the case of any soil that is in a fair condition to start with, produce all the effects of a dressing in like amount of stable manure; and to prolong the effect for a lifetime it would only be necessary to apply at intervals of a few years, or every year, a little salt for its chlorine, plaster for its sulphuric acid, and the German salt, kainit, for its magnesia, to make sure that these other necessary constituents of the food of plants do not entirely run out. Of the five materials above mentioned the lime also will, under ordinary conditions, need no looking after, partly because it is generally sufficiently abundant in the average soil to answer all the demands of the crops for many years, but more because it enters so largely into the composition of the phosphate that we should have to use more or less freely in any system of manuring without stable manure; and we need give ourselves little trouble about it, also, because if needed in extra quantity it is so easily obtained and applied as quicklime, or as ground limestone, or in plaster.

So we have, finally, only four substances that we need specially to look after—nitrogen, phosphoric acid, potash, and organic matter or vegetable or animal remains. If we can only manage the supply of these four rightly all the rest may be left to take care of themselves, at least for a long while. It seems as if it should be easy to manage so small a business as that. We have brands of phosphates without number, all claiming to be of superior excellence, and supplied to us almost at our very doors. Most of them contain some of the nitrogen that we also need to make up our combination; and if they do not contain enough of this, there are nitrates or ammonia salts, sold for their nitrogen only, and of which we can have all we will buy. Of potash in suitable forms for plant food there is unlimited store in the German potash salts, where unleached wood ashes cannot be had at reasonable rates; and of organic matters—vegetable and animal remains—which make up four-fifths of that which is left after you drive all the water out of stable manure, or four-fifths of the dry substance of the manure; where can we buy that? Echo answers, Where? We may put a little on the soil in a dressing of superphosphate containing dried blood, added to the superphosphate for its nitrogen, or if we manure with bone meal; but the quantity so added is very small indeed compared with what is put on in an ordinary dressing of stable manure. Here we seem to meet our first difficulty, in the matter of getting supplies to take the place of stable manure; and perhaps it is going to be no easy matter to overcome the obstacle. It may be well to ask and answer the question whether we cannot overcome the difficulty by paying no attention to it. Is this organic matter plant food? To the best of our knowledge it is not, except in so far as it contains nitrogen, which it always does; but the nitrogen can easily be provided for otherwise; therefore, as far as direct plant food is concerned we can get along without the organic matter of the stable manure. But what farmer or fruit-grower is there that would agree with me and be willing to follow my teaching if I should say to him that his manure will do just about as much good if he should burn it, and then to replace the nitrogen that would all be driven off in the burning, add to the hundred-weight of ashes that he would get from every ton of it twenty-five pounds of sulphate of ammonia, containing about five pounds of nitrogen, as much as there is that is really assimilable in a ton of fresh manure; perhaps he could not tell why he would much rather have the whole manure.

(To be continued.)

### HULL SHOW.

JULY 2ND, 3TH, AND 5TH.

HORTICULTURAL exhibitions often advance very slowly in importance, and some of the leading shows of the present time made but moderate progress for many years until they had attracted the attention and gained the confidence of horticulturists generally. Considerable perseverance and energy are therefore required in commencing an exhibition which it is desired to raise to a prominent position, and there must be unwavering liberal support for a few years to establish it firmly, and to give exhibitors the necessary encouragement by prompt payment of prize money. By such means, with practical officials and a readiness to work in combination, there should be little difficulty in instituting a show that would be both creditable and beneficial to the district. Thus it is that there is reason to expect that the Hull Show will under good management, and with a continuance of the patronage afforded by such distinguished townsmen as the Mayor (Dr. Rollit), become one of the leading exhibitions of the north of England. Any improvement is welcome evidence of future development, and the Show opened on Wednesday last was decidedly in advance of that held last year. Plants were much more numerous; cut flowers, bouquets, and buttonholes were capitally represented; fruit and vegetables being also fairly shown, and though there is necessarily room for still further advance, the Exhibition was satisfactory in all respects.

Three large marquees, arranged in the form of three sides of a quadrangle, were devoted to the plants, groups, and flowers, two smaller tents being occupied with the fruit, vegetables, and cottagers' productions. The tents were sufficiently wide to allow abundance of space for visitors, central tables bearing the smaller plants and dishes of fruits, the others being arranged upon the ground near the sides of the tent, in which position they were seen to much better advantage than would have been the case if placed upon side stages, such as are too frequently employed. Each evening the tents were illuminated by numerous electric lamps, and the effect was extremely good, the novelty of the display attracting a large number of visitors. The Curator and Secretary, Mr. P. MacMahon, with his courteous coadjutors Mr. Edwin T. Sharp and Mr. James Dixon deserved much praise for their efforts



to render this Show a success, and it is hoped that they will each year find a satisfactory advance to reward them for their labours.

**Stove and Greenhouse Plants.**—The principal portion of the display in these classes was formed by the plants contributed by Mr. Cypher, Cheltenham, who secured leading honours with sixteen, ten, and four specimens, these thirty beautifully grown plants constituting an exhibition of considerable beauty. All were in fine condition, but the following were especially worthy of notice: *Clerodendron Balfourianum*, globular, even, and finely flowered; *Erica depressa*, in vigorous health; *Anthurium Schertzerianum* Wardi, with very handsome spathes; *A. S. Cypheri*, a variety with very long brilliant spathes, a most handsome form, which was certificated; *Erica ventricosa* Botwelliana, profusely flowered and fresh; *Ixora Regina*, flowering well; *Dracophyllum gracile*, in handsome condition; *Croton Warroni*, finely coloured; *Cycas revoluta*, *Seaforthia elegans*, both of great size, but in perfect health; *Dasyllirion acrotrichum*, *Dicksonia antarctica*, *Erica Parmenteriana rosea*, grandly flowered; *Bougainvillea glabra*, fresh and healthy; *Allamanda Hendersoni*, *Aphelaxis macrantha rosea*, *Latania borbonica*, *Stephanotis floribunda*, and others, forming together one of the most handsome groups of stove and greenhouse plants that have ever been exhibited. In the class for four specimens Arthur Wilson, Esq., Tranby Croft, Yorksire (gardener, Mr. Cartwright), took the second place with smaller plants, several healthy *Ericas* being included. The finest single specimen stove or greenhouse plant in flower was a magnificent example of *Erica Cavendishiana*, 6 feet high and as much in diameter, healthy and profusely flowered. This was shown by Dr. A. K. Rollet, Cottingham, and well deserved the first honours awarded for it. Mr. Cypher was placed second with an *Erica Shannoni*, of globular form and flowering freely. Mrs. Ross, Elloughton Lodge, Hull, was third with *Allamanda Hendersoni* in moderately good condition. Two collections of Orchids were entered, the first from Mr. Cypher, comprising *Dendrochilum glumaceum*, *Cattleya Gaskelliana*, and *Dendrobium Bensoni* in good condition; Mr. Cartwright securing the second place with healthy plants, of which *Aerides Lobbi* and *Odontoglossum vexillarium* were the most notable.

*Pelargoniums* were provided for in several classes, Show and Fancy, single and double Zonals, bronze and tricolors, but the exhibits were not very numerous. The principal prizes were secured by Miss Steward, Bishopsthorpe; the Rev. H. Newton, Beechwood House, Driffield; Mr. R. Simpson, Selby; Mr. W. Barnes, Pocklington; and Col. Brooshoof, Kirkellar. Two collections of Tuberous Begonias were shown in the class for six of the newest and best varieties; neither, however, were first-rate, and there appears to be room for great improvement amongst these useful plants in the district. Mrs. Ross was first with dwarf plants, bearing large flowers; Mr. G. Cottam, who was placed second, showing tall specimens, much stronger than the others, but nearly all of one colour, and with their flowers of the old type, now completely out of favour as compared with the varieties obtained in recent years. *Fuchsias* were mostly small, but healthy and fairly well flowered. *Calceolarias* were quite second-rate, but the bedding plants from Mr. R. Simpson and Mr. G. Cottam were bright and pretty.

**Fine-foliage Plants.**—About one-half of the large tent already noticed as containing the groups of stove and greenhouse plants, was occupied with the fine-foliage plants, which were shown in excellent condition, and added greatly to the beauty of the Exhibition. The leading class was that for ten specimens, in which Mr. Cypher carried off the principal prize for the enormous, but fresh and healthy plants which have figured so conspicuously at several shows this year. Very prominent was *Croton Johannis*, 5 feet in height and diameter, and grandly coloured; *Kentia australis*, *Cycas circinalis*, *Latania borbonica*, and *Cycas revoluta* were other notable specimens, and altogether they formed admirable examples of what can be effected by careful and skilled culture. Mr. Cartwright followed in this class, showing, amongst other healthy plants, well-grown specimens of *Kentia Fosteriana*, *Latania borbonica*, and *Cycas circinalis*. Dr. Rollet had, in his third-prize collection, a handsome *Phormium tenax variegatum* and a large *Latania borbonica*. Mr. Cypher also had the best trio of foliage plants, *Dasyllirion acrotrichum*, *Kentia Canterburyana*, and *Croton Williamsi*, the latter finely coloured, and the two former in superb health. Mr. R. Simpson was second, his best plant being a large *Cycas circinalis*; and Mr. J. C. Padman, Boston Spa, was third with a large and well-grown *Stevensonia grandifolia* and an *Astrocaryum mexicanum*. A beautiful healthy *Dasyllirion acrotrichum* from Mr. Cypher was placed first in the class for a specimen foliage plant; *Latania borbonica* from the Rev. Newton and a Palm from Dr. Rollet being placed second and third. Dr. Rollet's extensive and interesting collection of economic plants deserves special mention, for it formed an important group at one end of the large tent, and attracted much attention.

Ferns were admirably represented, all the exhibits being distinguished by a most creditable fresh healthy appearance. Mr. Cartwright won first honours in the class for six Ferns, showing a wonderful example of *Adiantum cardiochloa* about 8 feet in diameter, *Davallia Mooreana* vigorous and beautiful, *Pteris scaberula*, and *Gleichenia rupestris*. Messrs. W. & J. Birkenhead, Sale, were second with healthy plants. Messrs. Birkenhead staged the best specimen Fern, *Davallia fijiensis plumosa*, 4 feet in diameter, and as fresh and neat as could be desired. Mr. R. Simpson's *Davallia bullata*, a pretty specimen, was placed second, and B. West, Esq., was third for *Adiantum cuneatum*. Tree Ferns were shown by Messrs. R. Simpson, W. & J. Birkenhead, and J. C. Padman, all having *Dicksonia antarctica*. The Rev. H. Newton won first honours for six *Selaginellas*, showing *formosa*, *Kraussiana aurea*, and *apus* in capital condition. Mr. J. C. Padman following with neat but smaller examples. Hardy Ferns were excellent, especially the premier collection of twelve from Messrs. Birkenhead, which included some of the most useful and effective of the hardy forms. Mr. J. W. Backhouse, Beverley, was second with but slightly inferior plants, and Mr. R. Simpson took third place with neat little specimens.

**Groups.**—Two classes were provided for these, one for a group to occupy a space not exceeding 200 square feet, and the other of half that size. In the first-named class four beautiful groups were entered, Mr. Cartwright securing the leading prize with a tasteful combination of flowering and fine-foliage plants freely arranged, yet without any approach to thinness. *Campanulas*, *Lilies*, *Gladiolus Colvilli alba* were the most conspicuous

amongst the flowering plants, *Croton* and *Caladium argyrites* being employed chiefly near the margin. Mr. R. Simpson was second with a good proportion of flowering and fine-foliage plants, but not quite so neat in arrangement. Dr. Rollet was awarded the third prize for an effective and bright collection, among which *Pelargoniums* were prominent. A most graceful group of Ferns from Messrs. Birkenhead was highly commended, but scarcely sufficient material had been employed to complete it satisfactorily. In the smaller class Mr. G. Cottam was adjudged first honours for a pleasing group, in which Ferns, *Gloxinias*, and *Pelargoniums* predominated, the margin of *Selaginellas* and *Isolepis* having a neat appearance.

Cut flowers, especially Roses, were capitally shown in the most important classes, bouquets and stands of Grasses and flowers being similarly well represented. There were two competitors with dinner tables, Miss MacMahon securing first honours with a light and graceful arrangement, comprising a few *Pelargonium* flowers, *Fuchsias*, *Lapagerias*, and *Gloriosas* with suitable foliage and Grasses. Mr. J. Burdall, Charlotte Street, Hull, was second with a much heavier arrangement rather overloaded with fruit.

**Fruit.**—Several good fruit-growers competed in the fruit classes, but nothing of an unusual character was staged. Mr. Cartwright was first with a collection which included good white and black Grapes, Strawberries, Peaches, and Nectarines. Black Grapes were well shown, Mr. G. H. Shaw, Howden, being first with finely coloured Black Hamburg. Mr. B. Whittaker, Hessle, followed with large bunches of the same variety. White Grapes were of indifferent quality, those from Mrs. E. Smith, North Ferriby, being the best. Mr. Shaw was first with eight bunches of Grapes, Black Hamburg being large in bunch and berry, Buckland Sweetwater fine, and Muscat of Alexandria rather green. Melons, Peaches, Cherries, and Strawberries were fairly represented; Mr. Cartwright, The Marquis of Ripon, Nocton Hall (gardener, Mr. Ridsdale), Mr. Whittaker, and Mr. King securing the principal prizes.

Vegetables were shown in moderate numbers, but of excellent quality, Mr. Cartwright leading with a fine clear lot, followed by Mr. Ridsdale with a similar collection but a few points behind.

Two handsome groups of plants not for competition were exhibited by Mr. B. S. Williams, Upper Holloway, London, and Mr. E. P. Dixon, Hull, the former having a choice collection of Orchids and new plants, tastefully arranged; and Mr. Dixon contributed a handsome collection of Conifers and miscellaneous evergreens.

#### ALEYRODES VAPORARIORUM.

THIS little pest is not got rid of quite so easily as "*Justitia*" would have us believe. There is no doubt about fumigating the house with tobacco being the only safe and effective remedy in the case of Tomatoes affected by this tiny fly, but in the case of other plants infested by it sponging the under side of the leaves should also be resorted to. Fumigating for two or three nights consecutively will destroy all the insects, but will not injure the eggs deposited on the under side of the leaves, and consequently several fumigations, say at weekly intervals, are necessary before the plants can be really said to be clean. So difficult are they to eradicate that I have known gardeners discontinue the house culture of Tomatoes owing to their prevalence, and others wish they had never commenced Tomato culture.—W. IGGULDEN.

#### WIMBLEDON SHOW.

THE twelfth annual Exhibition was held on Wednesday, the 2nd inst., in the grounds of Wimbledon House, by kind permission of Sir H. W. Peek, Bart., J.P., and was from many points of view the most successful yet held by the Society, nearly 5000 persons visiting the Show. The splendid grounds of Wimbledon House, so admirably kept by the head gardener, Mr. J. Ollerhead, were thrown open all day, and were a source of great attraction.

**GROUPS.**—There were seven groups staged for competition. Mr. Wilkinson, gardener to Madame Schuster, Cannizaro, took highest honours with a graceful and not too crowded arrangement of plants. Mr. D. Bridger, gardener to Laundry Walters, Esq., Woodhays, came in second, and Mr. W. Smith, gardener to J. F. Schwann, Esq., Oakfield, third, there being little to choose between these latter competitors in regard to merit. For a smaller group (50 square feet) Mr. Bentley, gardener to Sir Thos. Gabriel, Bart., Edgecombe Hall, was an easy first, the only other exhibitor, Mr. Stratton, gardener to Miss Forbes, Chester House, being disqualified for having exceeded the space allowed. H. J. Luff, Esq., Queen's Road, was first for the amateurs' group. Mr. G. Stevens, St. John's Nursery, Putney, sent a charmingly ranged group, not for competition, several of George's new Abutilons in it having a pleasing effect. Messrs. Laing, Forest Hill, and Mr. W. S. Thomson, Wimbledon Hill, also showed groups with which, as regards taste and quality, no fault could be found. A grand collection of pot Roses came from Messrs. Veitch, and a well-flowered lot of Zonals from Mr. Legg, Worple Nursery.

**STOVE AND GREENHOUSE PLANTS.**—Mr. Bentley was very successful in this division. He took the premier award for four stove or greenhouse plants (a *Eucharis* with over ninety expanded blooms being much admired) and four exotic Ferns. He was also first for *Gloxinias*, *Lycopodiums*, and specimen foliage plant. Mr. Law, gardener to R. S. Dean, Esq., The Priory, and Mr. Bridger, were also prizetakers. Mr. Law showing some of the finest *Caladiums* which have been seen at Wimbledon exhibitions. Mr. Wilkinson was first for six miscellaneous foliage or flowering plants, 9-inch pots, and *Achimenes*, first for a single specimen plant in flower, and second for a single specimen foliage plant. Mr. Stratton came out second for *Lycopodiums* and third for specimen flowering plant. Mr. Stratton also exhibited some excellent *Fuchsias*, over 7 feet high and well flowered. *Begonias* were in good condition, Mr. Law and Mr. H. Alderman, gardener to Miss Hatfield, Morden Hall, being the chief prizetakers. For Zonals Messrs. Bridger, Law, and Stratton were awarded the greater number of prizes.

**FRUIT.**—Considering the season fruit was well represented. Mr. Gibson, gardener to J. Wormald, Esq., Morden Park, had three grand bunches of



Black Hamburg Grapes, and a similar number of Alicantes, taking the highest awards in each class. Mr. Harding, gardener to T. D. Galpin, Esq., Putney Heath, was second for black Grapes, and first for a dish of six Nectarines. Mr. Davis, gardener to Rev. E. Morris, Roehampton, was first for a dish of Peaches, and took the minor prizes in the classes for a Melon and six Nectarines. Mr. A. Alderman was second for white Grapes, and third for Peaches. Mr. H. Alderman being second for the latter, and first for Strawberries. Mr. Newell, gardener to Sir E. Saunders, Fairlawn, had a well-grown specimen of Hero of Lockinge Melon and carried off first honours. Mr. A. Alderman was first for a collection of fruit (six kinds), Mr. Davis taking the next place. He also took the chief position for the special prize for nine Peaches, Mr. A. Alderman and Mr. H. Alderman following in the order named.

CUT FLOWERS.—The bad season had evidently affected Roses, which were not of the usual quality seen at Wimbledon shows. In the all-comers' class Mr. C. Gibson beat so redoubtable a grower as Mr. J. W. Moorman, gardener to Miss Christy, Coombe Bank, who was relegated to second place. In the class for twelve Mr. Moorman had again to give way in favour of Ernest Wilkins, Esq., Sutton. Mr. Moorman, however, secured the special prize for twelve blooms, and was second for twelve Roses, four varieties, three of a sort. Among amateurs J. E. Coleby, Esq., Warple Road, J. MacFarlon, Esq., Inverary, J. T. Hunter, Esq., Artenberry Road, and W. Northover, Esq., Queen's Road, were most successful.

MISCELLANEOUS.—Mr. Bentley, Mr. Smith, and Mr. Law took the prizes for twelve table plants in the order their names are given, Mr. Law also standing first for the special prize for six, given by Sir Trevor Lawrence, Bart., M.P., Mr. Bentley being second. Twelve bunches of Gloxinias, three blooms to form a bunch, and arranged with Fern, a class introduced this season, only brought forward two competitors, Mr. Newell and Mr. Gibson, who took first and second prizes respectively. There were many interesting special prizes, the chief winners being the following:—Dr. Walker (honey), Mr. Law (cut blooms of herbaceous plants), Mr. A. Alderman (buttonholes), J. T. Hunter, Esq. (Pansies), Mr. Gibson (annuals in pots), Mrs. J. Attridge (named wild flowers), Mr. Gibson (Antirrhinums), H. J. Luff, Esq. (plants for room decoration), Miss Tymons (table decorations), Miss Callaway (hand-basket of flowers), and Mr. H. A. Rolt (Abutilons). There was an admirable display by cottagers, and over 200 exhibits by the Holy Trinity Window Flower Garden Society for Girls. The bee tent, under Dr. Walker, was largely patronised. The amount taken at the gates was larger by far than the receipts at any previous exhibition of the Society.

#### ROSES FOR BUTTONHOLES.

WILLIAM ALLEN RICHARDSON.—This is one of the most useful Roses in cultivation for "buttonholes." The colour of its flowers, which are small, is deep orange-yellow with a light centre. It is classed as a Noisette, and is a strong grower, so it would be useful for training to pillars or trelliswork. I should have mentioned that the edge of the petals are shaded off to a lighter colour.

MA CAPUCINE.—This is a very small floriferous Rose. Like the above it is not a show Rose, but very useful for growing where button-hole flowers are in demand. Its colour is bronzy yellow and very distinct. It is classed as a Tea Rose.—S. W.

#### PENTSTEMONS.

(Continued from page 303.)

*P. confertus*, Dougl.—A pretty dwarf-growing species, found in moist ground at great altitudes on the Sierra Nevada, extending northwards to Washington Territory and the Eastern Rocky Mountains. It grows from 6 to 12 inches high, tufted, with lanceolate leaves of a pale green colour and quite smooth. Flowers numerous, shortly stalked in whorled spikes; corolla about half an inch long, of a pale blue violet colour, with gaping lips; flowering in July and August. It is a very charming and quite hardy little plant, growing freely on the rockery or in the border.

*P. cordifolius*, Benth.—This is a very striking and rare species under cultivation, although by no means difficult to increase; flowering during August and September or even later. It has a woody rootstock, from which long, loose, leafy shoots are sent up terminated by cymose panicles of flowers. Corolla from 1 to 1½ inch long, tubular, but very narrow; two-lipped, the upper one erect, lower one spreading, of a dull scarlet colour; leaves small, cordate, distinctly serrate, bright shining green. I like this species very much.

*P. deustus*, Dougl.—This is a rare little tufted species with a sub-woody rootstock, found on dry nooks and banks on the eastern side of the Sierra Nevada. Leaves sessile, from 1 to 2 inches long, ovate or narrow oblong, sharply serrate. Flower stems from 6 to 10 inches high, narrow, with many-flowered clusters; corolla about half an inch long, cream-coloured, tinged with rose, slightly dilated above with spreading lobes. This is a very pretty little species, for some years lost to cultivation, although it was formerly known, as a good figure of it is given in "Lindl. Bot. Reg." t. 1318. I raised a batch of seedlings last season, but only three turned out true, most of the others turning out to be *P. cruleus purpureus*, Gray, which perhaps is but a variety of *P. confertus*, Dougl.

*P. diffusus*, Dougl.—This has also been known for many years in our collections, and I think it has been wisely kept. It is found

in Oregon and in the contiguous portion of California, and grows from 1½ to 2½ feet high, with copiously branching and paniculate flower stems. Corolla about three-quarters of an inch long, pale purple with a white throat. Leaves ovate lanceolate, distinctly serrated. It is hardy, and flowers very freely during July and August.

*P. Eatonii*, Gray.—A dwarf-growing species, with ovate or lanceolate smooth leaves, and narrow panicles of bright scarlet flowers about an inch long, the corolla lobes being small and slightly spreading. A slender-growing and modest beauty, found in the southern part of California extending to Utah, flowering with us from July to September, but it requires protection during winter.

*P. glaber*, Pursh.—This is a very well known and greatly appreciated kind, having been introduced as early as 1811, and figured in the "Bot. Mag." t. 1672, under the name of *P. glabra*, and later on it appears in the "Bot. Reg." t. 1720, under the name of *P. speciosus*, but *P. glaber* is now its recognised name. It grows from 1 to 2 feet high, smooth throughout, sometimes slightly glaucous. Leaves lanceolate or oblong spatulate, entire. Flowers numerous, in a narrow panicle. Corolla about an inch long, half bell-shaped, dilated above the tube, violet-blue varying to purple. Very showy, appearing from July to September, and most freely produced. Indeed it will flower itself to death if not checked. Although hardy in most places it is needful to keep duplicate stock to make good any loss.

*P. heterophyllus*, Lindl.—A handsome species, the last being frequently substituted for it, this plant growing much taller as a rule. It has a sub-woody rootstock. Leaves pale green, sometimes glaucous, lanceolate, linear, or oblong-lanceolate. Flower stems narrow, from 2 to 4 feet high, very leafy, with many flowers. Corolla an inch or rather more long, broadly funnel-shaped, of a pale purple colour as a rule, but varying greatly in colour. Native of Western Australia, growing on the dry banks of streams. I think this is quite hardy, and it is a charming feature when in flower from June to September. Introduced about 1830, and figured in "Lindl. Bot. Reg." t. 1899.

*P. humilis*.—A little tufted free-growing species, which was, I believe, first distributed by Mr. Whitaker of Morby in Derbyshire, but I know nothing of the name. It is very near *P. confertus*, and may be only a form of it. It has oblong-spatulate leaves from 1 to 2 inches long, smooth and quite entire. Flowers in erect clustered panicles; the corolla about half an inch long, of a rich blue-purple, very bright. Indeed it is one of the best for the rockery, being quite hardy and flowering from July to September, forming dwarf cushions of great beauty.

*P. Jaffrayanus*, Hook ("Bot. Mag." t. 5045).—This is perhaps nothing more than a variety of *P. azureus*, as leading American botanists thus regard it; but it is a lovely plant, not quite hardy, but so bright and showy that it is worth a little care to maintain it in good state. It grows from 12 to 18 inches high, with broadly lanceolate glaucous foliage, and erect panicles of deep blue flowers, funnel-shaped and much dilated, having a very conspicuous appearance; indeed none are more showy from July to September. Where it will stand it forms quite a shrubby evergreen plant. Native of the Sierra Nevada, very abundant.

*P. latus*, Gray.—A pretty but scarce plant, growing from 1 to 2 feet high, very finely pubescent throughout; leaves linear lanceolate entire; flowers in many-flowered panicles; corolla about an inch long, rich blue, much dilated, with broad gaping lips and slightly spreading lobes. It is of comparatively recent introduction from the Sierra Nevada, and is hardy, flowering in July and August.

*P. Lemmonii*, Gray (sometimes erroneously rendered *P. Lemmonii*).—A rather more interesting than showy species in the way of *P. antirrhinoides*, but the flowers are of a rosy purple colour, and not more than half an inch long, produced at the ends of very leafy branches; leaves about an inch long, ovate-lanceolate, very finely toothed. The flowers are said to vary very much in colour, from flesh to purple, and I think there was at Kew some few years since a variety with pale rose-coloured flowers.

*P. Menziesii*, Hook.—An extremely pretty and quite hardy little species, known also under the name of *P. Newberryi*, Gray. It grows from 9 to 12 inches high on rocky slopes of the Sierra Nevada up to a height of 12,000 feet, extending to the Northern Rocky Mountains. Leaves about an inch long, oval or oblong, the margins set with rigid teeth. Flowers in erect racemes; corolla an inch or so long, rich rose-red with a narrow tube, gradually expanding from the base upwards, with short spreading lobes. Flowering from June to August, and well suited for the rockery.

*P. Murrayanus*, Hook ("Bot. Mag." 3472).—This is another showy scarlet-flowered species in the way of *P. barbatus*, very



bright from August to October, and was introduced about 1835, and was named in honour of Mr. Murray, who was at that time curator of the Glasgow Botanic Gardens, and first reared flowering plants. It grows from 2 to 3 feet high, with tall narrow virgate panicles of tubular flowers, with short and but slightly spreading corolla lobes.

*P. ovatus*, Dougl.—This has been known a long time under cultivation, having been figured in the "Bot. Mag." t. 2903, introduced from the north-western States of America. It grows from 1 to 2 feet high, tufted at the base and sub-woody, with rather large ovate-cordate leaves, variously serrated and bright green. The panicle is rather lax, with numerous flowers; corolla bell-shaped, with very open mouth 1 to 1½ inch long, of a blue-purple colour with a white throat, appearing during July and August. It is a pretty kind and quite hardy, well able to look after itself.

*P. Palmeri*, Gray.—This is a handsome species, flowering, I believe, for the first time in this country a few years since at the Royal Gardens, Kew, a figure of it appearing in the "Bot. Mag." t. 6064. It grows from 1½ to 3 feet high, and is more or less glaucous throughout, with oblong-lanceolate leaves below, the upper ones united by their broad bases. Flowers numerous, in open cymose panicles; corolla 1½ to 2 inches long, broadly bell-shaped, with a broad spreading mouth of a pale cream colour tinged with rose, more especially rosy at the base, appearing in August and September. Native of Arizona, Utah, and Nevada, extending to California, often met with on very high altitudes. It is surprising this is not more often seen in our hardy plant collections.

*P. procerus*, Dougl.—A well-known and dwarf species, well adapted for furnishing the rockery with cushions of deep green oblong-lanceolate leaves, about an inch long, on creeping shoots from which are sent up numerous clustered erect panicles of small purple flowers during June and July, lasting into August, forming a very charming tuft. It is very free-growing and perfectly hardy. A figure of it was given in the "Bot. Mag." t. 2954, and it was also figured in the "Bot. Reg." t. 1260, under the name of *P. confertus*, to which it is closely related; indeed it may only be a variety of it.

*P. pubescens*, Hook.—An old-fashioned flower, having been introduced from the United States as early as 1758, and figured in the "Bot. Mag." t. 1424. It grows from 12 to 18 inches high, tufted at the base, with ovate-lanceolate deep green leaves. Flowers in lax panicles; corolla about an inch long, bell-shaped, light purple, white inside, with spreading lobes, appearing in August and September. This is not so showy as most of the others, but it is very free and quite hardy.

*P. spectabilis*, Thurber.—A very lovely species, native of dry open plains and hills from Ventura to San Diego counties in California, extending northward to Arizona, and has been under cultivation many years, being well figured in the "Bot. Mag." t. 5260. It grows from 1½ to 3 feet high, with ovate-oblong, acuminate, sharply serrated leaves. Flowers very numerous, in lax panicles; corolla about 1½ inch long, bell-shaped, rich blue-purple inside, and the spreading lobes lighter in colour, usually blue; but it is rather variable in colour, but very floriferous, constituting one of the showiest border flowers possible to possess, extending from the end of July to October in beauty. I like it very much.

*P. ternatus*, Torrey.—Closely related to *P. cordifolius*, and I have frequently met with the latter under the name of *P. ternatus*; indeed I raised a packet of seed last April, supposed to have been *P. ternatus*, and I am sure they are all *P. cordifolius*, although not one of them has yet flowered. *P. ternatus* grows from 2 to 4 feet high, with narrow-lanceolate, sharply serrated leaves, nearly all of which are in whorls of three. Flowers in a naked narrow panicle; corolla about an inch long, tubular, with gaping lips, the upper one erect, of a pale scarlet colour, appearing in August and September; native of northern California. It is as tender as *P. cordifolius*, and should be treated in a similar manner.—PENTAS.

ROSE A. K. WILLIAMS.—"EMPEROR" OR "EMPRESS?"—After good-naturedly extending so much of your space to "Y. B. A. Z.," page 8, in first objecting to my figure of personification, in designation of the above glorious Rose—"an empress among Rose queens"—and then "damning it with faint praise," you will kindly allow me a line to reiterate my observations in reference thereto. If, broadly speaking, the Rose is universally admitted to be "the queen of flowers," the Rose that heads the list without reference to the gender of the surname is admitted to the higher title of "Empress." If "Y. B. A. Z." maintains it should be "Emperor" in common parlance, he will find himself in a "miserable minority." As to the character of A. K. Williams, I have looked hastily through your report of the National Rose Society, held since I wrote, and

find it conspicuous in every winning stand, and some of the exhibitors, I believe, from the locality of your correspondent. No further proof is necessary. With me, and those who grow it around here, no other Rose comes near it.—W. J. MURPHY, *Clonmel*.

#### JAMESIA AMERICANA.

THE *Jamesia americana* represented in the annexed figure is of only recent introduction, and although its merits as a good shrubby rockwork plant are undoubted it has not yet found its way into general cultivation. As a low-growing shrub it is unequalled in early summer, its pure white flowers having a peculiar fascination where the run on white cut flowers is large at that season. Equally useful also as a tall shrub for the background, it is exceedingly floriferous in either position, standing any amount of cutting back. It may with care be obtained of any shape desired. The flowering season extends over May and June, and the flowers are produced in profusion. Although perfectly hardy out of doors, and amongst the earliest of the North American plants, it stands forcing very well. It may be planted and lifted much in the way recommended for *Rhododendrons*, &c., or kept in pots and transferred to the greenhouse early in January. It will come in early in March, and extend over April, in mild seasons sooner. As it never fails to bloom, and



Fig. 6.—*Jamesia americana*.

seems quite indifferent to either wet or dry seasons, it promises to become a valuable acquisition.

The plant grows naturally of a rather straggling habit, but this may easily be remedied by pruning. The shoots are stout and woody. It is much branched. The flowers are in large corymbose heads, and are borne laterally, also opposite, on every joint, and smaller than the lateral ones. They are pure white and slightly fragrant, lasting a considerable time in a cut state, and promising to be a good bee plant. The leaves are borne in opposite pairs on the young shoots, stalked, oval-shaped, and evenly and sharply serrated. They are of a fine light green colour, and covered with a fine silky down, which makes them quite silvery underneath. As it rarely, if ever, ripens seed in this country, the best way to increase it is from cuttings, which should be placed in cool frames in a shady position, and watered very sparingly until rooted.—D. D.

TROPHY TOMATO.—Only a few will endorse the remarks of "J. R." respecting Trophy Tomato for outdoor work. Perhaps locality has somewhat to do with the success in the case. Trophy for indoor work is very fine. The growth being so rapid and robust there is nothing like stopping the leader when there are two or three lots of bloom to help them to set.



I always find after a few fruits are set they are pretty sure. It is a good plan also to pick out the centre flowers.—S. C.

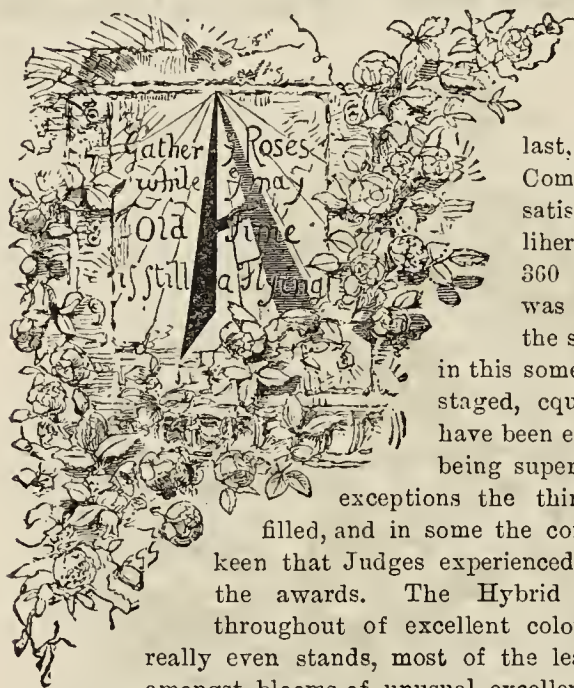
### SPECIAL SOCIETIES—EXHIBITING.

MR. DODWELL having called a meeting of the Committee of the National Carnation and Picotee Society to demand the sanction of the Committee for their approval of what he has done and what he intends to do in the matter of his threatened legal action against Dr. Hogg, the Committee met on Tuesday last at South Kensington and unanimously declined to support him in any such proceeding. Mr. Dodwell, having been asked for an explanation of the alleged instructions of the Executive Committee to Messrs. Mallam of Oxford, stated that Messrs. Mallam had misconstrued his instructions, and that he had acted only in the name of "the executive" and not of the Executive Committee.

In our opinion this Society is entirely without the organisation which enables any society to be properly administered. There is no code of rules either for its management or the regulation of its exhibitions, and we would commend this matter to the earnest attention of the members.

### ROSE SHOWS.

CRYSTAL PALACE, JULY 5TH.



DMIRABLE in every respect was the Exhibition at Sydenham on Saturday last, and the Directors of the Company must have felt fully satisfied with the result of their liberality. A huge marquee, 360 feet long and 40 feet wide, was erected upon the terrace at the south side of the Palace, and

in this some thousands of blooms were staged, equally as good as any that have been exhibited this year, the Teas being superbly represented. With few exceptions the thirty-four classes were well filled, and in some the competition was so close and keen that Judges experienced great difficulty in making the awards. The Hybrid Perpetual varieties were throughout of excellent colour, though there were few really even stands, most of the leading collections including, amongst blooms of unusual excellence, small and weak samples which, as might be imagined, did not improve in the course of the excessively hot afternoon. There was, however, a great preponderance of good blooms, and this want of regularity did not apply to the Tea classes, in which were several stands of considerable merit.

Upon the central table the larger open amateurs' classes were arranged, being separated by a median line of Palms, Ferns, and miscellaneous fine-foliage plants, the two side tables being devoted to the smaller classes in each section of the schedule. Particularly striking at the entrance were Messrs. Laing's magnificent group of Tuberous Begonias, which was undoubtedly the finest of its kind ever exhibited, and was most deservedly admired. Mr. C. Turner's corner groups of Pelargoniums also imparted some welcome diversity to the display, the whole arrangement of which was carefully and creditably superintended by Mr. W. G. Head.

#### OPEN CLASSES.

The most important of these was that for seventy-two single trusses, four collections being entered, and the premier prize was, after a close scrutiny, adjudged to Mr. B. R. Cant, Colchester, for a handsome lot, including many unusually fine blooms, though some were rather weak. The varieties were as follows:—Marie Rady, Anna Ollivier, Le Havre, Elie Morel, Ferdinand Chaffolt, Niphotos, Xavier Olibo, La Boule d'Or, Sénateur Vaisse, Souvenir d'Elise, Horace Vernet, Antoine Ducher, François Michelin, Alfred Colomb, Marie Van Houtte, Exposition de Brie, Ulrich Brunner, Innocente Pirola, Madame Charles Wood, Souvenir d'un Ami, Dupuy Jamain, Dr. Andry, Madame Isaac Perrière, Fisher Holmes, Boieldieu, Madame Ducher, Madame Gabriel Luizet, Etienne Levet, Maréchal Niel, Eugène Fürst, Merveille de Lyon, Reynolds Hole, Mdle. Marie Cointet, Duke of Edinburgh, Madame Marie Verdier, Chas. Lefebvre, Marguerite de St. Amand, Alfred K. Williams, Beauty of Waltham, Duchesse de Morny, Lord Macaulay, Madame Angèle Jacquier, Auguste Buchner, Duke of Connaught, Madame Caroline Kuster, Ville de Lyon, Dr. Sewell, Comtesse de Paris, Madame Prosper Langier, Countess of Roschery, Duchesse de Vallombrosa, Madame Hippolyte Jamain, Prince Arthur, Mons. E. Y. Teas, Annie Laxton, Auguste Rigotard, Baronne de Rothschild, Marie Baumann (handsome), Devonensis, Duke of Wellington, Moiré, Marquise de Castellane, Souvenir de Paul Neyron, Duchesse de Caylus, Comtesse de Naidailac, Lady Sheffield, Catherine Mermet (grand), John Hopper, Madame Welch, Duke of Teck, Madame Lacharme, Abel Carrière. Messrs. Paul & Son, Cheshunt, were awarded second honours for smaller, but bright and fresh, blooms, amongst which Catherine Mermet, Ulrich Brunner, Duchesse de Morny, Souvenir d'Elise Varden, Comte Raimhaud, La France, Duke of Connaught, and Madame Maria Le Grange were very notable. Messrs. Cranston & Co., Hereford, securing the third place.

For forty-eight varieties, three trusses of each, there was the same

number of competitors, Mr. B. R. Cant again taking the lead with blooms of fine substance and colour, the varieties being Prince de Portia, Madame Lacharme, La France, Dupuy Jamain, Duke of Teck, Devonensis, Marquise de Castellane, Annie Laxton, Exposition de Brie, Souvenir d'un Ami, Marguerite de St. Amand, A. K. Williams, Madame Charles Wood, Niphotos, John Hopper, Marie Rady, Antoine Ducher, Mons. E. Y. Teas, Prince Arthur, Mdle. Marie Cointet, Madame Caroline Kuster, Boieldieu, Sénateur Vaisse, Mdle. Bonnaire, François Michelin, Catherine Mermet, Comtesse de Serenyi, Duke of Edinburgh, Alfred Colomb, Souvenir d'Elise, Ville de Lyon, Xavier Olibo, Madame Eugénie Verdier, Penelope Mayo, Maréchal Niel, Reynolds Hole, Horace Vernet, Boule d'Or, Souvenir de la Malmaison, Le Havre, Fisher Holmes, Marie Van Houtte, Innocente Pirola, Etienne Levet, Marie Baumann, Merveille de Lyon, Countess of Rosebery, and Dr. Andry. Messrs. Paul & Son were a close second, showing fine blooms of Horace Vernet, Madame Maria Le Grange, Reynolds Hole, A. K. Williams, Capitaine Christy, Charles Lefebvre, Duchesse de Morny, and Beauty of Waltham. Messrs. Cranston & Co. secured the third place, a trio of blooms of Sénateur Vaisse, Duchesse de Morny, and Rosieriste Jacobs being very notable in their stands.

The competition was keen in the class for twenty-four triplets, Hybrid Perpetuals, nine collections being entered. A little confusion, however, occurred, as exhibitors in Classes 1 and 2 were prohibited from showing in 3 and 4 and some others, and as Mr. B. R. Cant was placed first in this before this rule was discovered the awards had to be altered, Messrs. J. Jeffries and Son being awarded the premier prize, followed by Mr. F. Cant, Colchester, and Messrs. G. Bunyard & Co., Maidstone, several other stands being excluded owing to their including Tea varieties, amongst them being a stand from Mr. J. House of Peterborough.

Twelve stands of twenty-four single trusses were entered, all being of very good quality. Mr. F. Cant took the lead with fresh even blooms of Madame Gabriel Luizet, Madame Charles Wood, Jean Ducher, Duke of Teck, Madame Lacharme, A. K. Williams, Madame C. Kuster, Horace Vernet (large), Madame H. Jamain, Duke of Wellington, Souvenir de Paul Neyron, Constantine Tretiakoff, Maréchal Niel, Reynolds Hole, Catherine Mermet, Comtesse d'Oxford, Souvenir d'Elise, Abel Carrière, Duke of Edinburgh, Marie Baumann, La Boule d'Or, Dr. Andry (fine), Mons. Noman (good), and Black Prince. Messrs. J. Burrell & Co., Cambridge, followed, showing handsome blooms of Nardy Frères, Souvenir d'Elise Vardon, Duc de Wellington, and Princess of Wales (grand); Messrs. G. Cooling & Son, Bath, gaining the third place with smaller examples, but Duke of Wellington, Charles Lefebvre, Marie Baumann, and Xavier Olibo were substantial and of good colour.

The Tea Roses in Class 5 for eighteen varieties, three trusses of each, were uncommonly fine, and following up his former success Mr. B. R. Cant was again the premier exhibitor with fresh and fine blooms of Adam, Madame Welch, Marie Van Houtte, Catherine Mermet, Maréchal Niel, Anna Ollivier, Devonensis, Comtesse de Naidailac, Souvenir de Paul Neyron, Moiré, Madame Bravy, Boule d'Or, Souvenir d'un Ami, Jean Ducher, President, Madame Caroline Kuster, Madame Angèle Jacquier, and Madame H. Jamain. Mr. F. Cant was second with a very slightly inferior collection—Souvenir d'un Ami, La Boule d'Or, Marie Van Houtte, and Madame Willermoz being especially noteworthy. Messrs. Paul & Son were third with a stand only a few points behind the others.

A highly interesting feature of the Exhibition was formed by the classes for Roses in their respective colours, and the competition being keen a good display was produced. For a collection of yellow Roses Mr. B. R. Cant was first with beautiful blooms of Etoile de Lyon, Maréchal Niel, Madame Hippolyte Jamain, Madame Margottin, Jean Ducher, Madame Welch, Marie Van Houtte, and La Boule d'Or. Messrs. J. Burrell & Co. following, and their best blooms were Perle des Jardins, Madame Van Houtte, Jean Ducher, and Gloire de Dijon; and Messrs. Paul & Son were third, having Boule d'Or and Comtesse de Naidailac very handsome. There were five competitors.

In the class for a collection of white Roses there were six entries, Mr. B. R. Cant again taking the lead with beautiful clean examples of Merveille de Lyon, really magnificent blooms, which attracted much admiration; Rubens, Madame Bravy, Niphotos, Innocente Pirola, and Devonensis (fine). Messrs. Burrell & Co., Cambridge, were second, their best blooms being Niphotos, Anna Ollivier, Rubens, Devonensis, Innocente Pirola, Madame H. Jamain, and Marie Guillot. Equal third prizes were awarded to Messrs. Cranston & Co., who had Mons. Noman and Violette Bouyer very fine; and to Messrs. Paul & Son, who showed Merveille de Lyon, Violette Bouyer, and Madame Lacharme clean, fresh, and substantial.

The best of the seven stands of pink Roses were staged by Messrs. Paul and Son, who showed good blooms of H. Schultheis, Marie Finger, La France, Abel Grand, Marguerite de St. Amand, Lady M. Fitzwilliam, Capitaine Christy, Madame Gabriel Luizet, Capitaine Christy, Mdle. Thérèse Levet, Madame Melanie Vigneron, Madame Hippolyte, Pride of Waltham, Boieldieu, Catherine Mermet, Comtesse de Serenyi, and Countess of Pembroke. The second place was accorded to Mr. J. Mattock, New Headington, Oxford, his best blooms being Marquise de Castellane, Marie Cointet, and Mons. Noman; while the third prize was secured by Messrs. Cranston & Co. for Mad. Marie Cointet, Marguerite de St. Amand, La France, Marquise de Castellane, and others.

Though the crimson Roses were not quite so good as the others fine fair stands were entered, Mr. B. R. Cant winning the first place with blooms of fine colour and substance, representing Horace Vernet, Xavier Olibo, A. K. Williams, Beauty of Waltham, Charles Lefebvre, and Duke of Wellington. Messrs. Paul & Son and Messrs. Cranston & Co. were second and third.

Only one collection of velvety crimson Roses was entered, for which Mr. B. R. Cant was awarded the first prize, large richly coloured blooms of Abel Carrière, Prince Canille de Rohan, Prince Arthur, Reynolds Hole, Horace Vernet, Madame Charles Maurice, Sultan of Zanzibar, and Duke of Wellington.

In the single variety classes some very handsome blooms were staged, and were quite as interesting a feature as the preceding. Eight boxes of any Tea Rose were staged, Mr. B. R. Cant securing first honours for Souvenir d'Elise, grand blooms of great size and fine form. The Rev. Page Roberts and Mr. G. W. Piper were second and third with the same variety, but less substantial. There were two boxes in the Camille de Rohan class, but only a second prize was awarded—i.e., to Messrs. Paul & Son for Abel Carrière.



rich in colour, but a little rough. Five stands were contributed in the François Michelin class, Mr. Grant, Ledbury, being awarded first honours for Marquise de Castellane, fresh handsome blooms, extremely handsome; Mr. B. R. Cant followed with Madame Marie Verdier, and Messrs. Bunyard were third with François Michelin bright and clean.

The Capitaine Christy class was an extremely good one, eight boxes being entered, all containing blooms of more than ordinary merit. Mr. H. Bennett, Shepperton, achieved a great success, securing first honours with magnificent blooms of Lady Mary Fitzwilliam, unquestionably one of the finest stands in the Show, and proving by the substance and splendid form the admirable qualities of this beautiful variety. Messrs. Paul & Son followed with Capitaine Christy, and Messrs. Cooling & Son were third with La France. Mr. B. R. Cant had the best blooms of A. K. Williams, Messrs. Paul & Son and House of Peterborough following with slightly smaller blooms of the same variety. Mr. House was the only exhibitor of W. A. Richardson, and was adjudged the first prize for neat blooms and buds of a fine orange colour. Mr. B. R. Cant, Messrs. G. Bunyard & Co., and Messrs. H. Low & Co., Enfield, were the prizetakers in the class for Marie Baumann, all showing that variety in good condition.

Moss Roses were not shown in large numbers, but Messrs. Paul & Son had a pretty collection with which they won the first prize. The varieties chiefly represented were White Bath, Little Gem, Salet, Madame E. Ory, Cristata, Lanei, Comtesse de Murinais, and Gloire de Mousseuses. Messrs. Cranston and Bunyard were second and third respectively. Three excellent collections of Niphetos were contributed by Messrs. B. R. Cant, Keynes. Williams & Co., and G. W. Piper, who won the prizes in that order. Messrs. Paul & Son had the only entry in the class for eighteen bunches of Rosa polyantha, being awarded the second prize for pretty blooms of Anna Maria de Montravail, Mignonette, and Parqueritte.

#### AMATEURS' CLASSES.

For forty-eight varieties, single trusses, there were eight competitors. Mr. J. Grant, Hope End, Ledbury, was first with neat fresh blooms of Comtesse de Serenye, La Havre, Marquise de Castellane, John Stuart Mill, Caroline Kuster, A. K. Williams, Jean Ducher, Beauty of Waltham, Victor Verdier, Marie Baumann, Marie Van Houtte, Senateur Vaisse, François Michelin, Louis Van Houtte, Capitaine Christy, Baronne de Bonstettin, Anna Ollivier, Perle de Lyon, Madame Gabriel Luizet, Fisher Holmes, Marie Verdier, Charles Darwin, Pride of Waltham, Duc de Montpensier, Morel, Etienne Levet, Madame H. Jamain, Mons. Victor Verdier, Marguerite de St. Amand, Horace Vernet, Mons. Woolfield, Dupuy-Jamain, Marie Rady, Madame S. Fropot, Exposition de Brie, Innocente Pirola, Duke of Edinburgh, Ulrich Brunner, Comtesse d'Oxford, Baronne de Rothschild, Duc de Rohan, George Moreau, Hippolyte Jamain, and Duchesse de Vallombrosa. T. B. Haywood, Esq., Woodhatch Lodge, Reigate (gardener, Mr. J. Ridout), was a very close second with fine blooms; the Rev. H. Pemberton, Romford, was third, an extra prize being awarded to the Rev. H. Berners, Harkstead Rectory, Ipswich.

Mr. S. W. Budd, 8, Gay Street, Bath, had the best twenty-four H.P.'s, showing good blooms of Louis Van Houtte, Marquise de Castellane, Duke of Wellington, Capitaine Christy, Fisher Holmes, Violette Bouyer, Horace Vernet, François Michelin, Duke of Connaught, Lady Sheffield, A. K. Williams, Heinrich Schultheis, Duke of Edinburgh, Pride of Waltham, Le Havre, La France, Alfred Colomb, Comtesse de Serenye, Xavier Olibo, May Quennell, Comtesse d'Oxford, Sir Garnet Wolseley, Madame Gabriel Luizet, and Prince Arthur, very beautiful. Mr. G. Christy, Blackhurst Lodge, Westerham, was second with fine blooms; Earl Stanhope, Chevening, Sevenoaks (gardener, Mr. Gray), being third.

Six boxes of twenty-four triplets were entered, Mr. J. Davis, The Square, Salisbury, leading with Duke of Edinburgh, Marquise de Castellane, Horace Vernet, Madame Lacharme, Marie Baumann, Cheshunt Hybrid, Madame Sophie Fropot, Charles Darwin, Marguerite de St. Amand, Innocente Pirola, Perle des Jardins, Maréchal Niel, Madame Bravy, Comtesse de Nadaillac, Boule d'Or, Niphetos, Jean Ducher, Caroline Kuster, Catherine Mermet, Madame Margottin, Madame H. Jamain, Prince Camille de Rohan, Princess Beatrice, and Duchess of Bedford. A. J. Waterlow, Esq., Great Doods, Reigate (gardener, Mr. Brown), was second with fresh but rather small blooms; Mr. Grant being third. Mr. J. Brown was first with twelve varieties, bright and handsome, the best being A. K. Williams, Xavier Olibo, La France, Dr. Andry, Louise Corbic, Marie Rady, and Eugène Fürst. Mr. C. Taylor, Headington, Oxford, and the Rev. Fellowes, Royston, followed closely.

There were ten competitors in the class for twelve Teas, the Rev. Page Roberts, Scole, Norfolk, taking first honours for a grand lot, comprising the following varieties:—Mons. E. Y. Teas, Madame Caroline Kuster, Mrs. Laxton, Madame Thérèse Levet, A. K. Williams, Lady Mary Fitzwilliam, Mons. Noman, Beauty of Waltham, Alfred Colomb, La France, Lord Macaulay, Duchesse de Vallombrosa. The Rev. Fellowes was second, his best blooms being Anna Ollivier, Souvenir d'Elise, and Madame Bravy. The Rev. H. Berners was third, also with an even and creditable collection.

Classes were provided for Tuberous Begonias, Lilium auratum, Carnations, Picotees, and Pinks, but the first-named was the most important. Messrs. J. Laing & Co., which has been mentioned was adjudged first honours, contained a number of handsome varieties distinguished by the great size, handsome form, and brilliant colours of the blooms, several new varieties being certificated. The arrangement was also very tasteful, forming a fine gradually sloping bank, with a few Palms of the Cocos type judiciously introduced, and four large baskets containing the drooping-flowered varieties at the angles of the group, added greatly to its beauty. Mr. J. C. Coppin, Shirley, Croydon, followed with a much less effective group, but including some good varieties. Mr. C. Turner was the only exhibitor of Lilium auratum, being first with profusely flowered plants. Mr. Turner was also the only exhibitor of Pinks and Picotees, being first in both classes. He obtained a similar position with Carnations, closely followed by Mr. J. Douglas, Great Gearies, Essex. Messrs. Sutton & Sons, Reading, offered prizes for a brace of Melons, to include Scarlet Invincible, Masterpiece, or Hero of Lockinge, but Mr. G. Steggles, Faulkner's House Gardens, Hadlow, was the only exhibitor, gaining the first prize for Hero of Lockinge well netted.

The miscellaneous exhibits comprised the following, for which extra

prizes were awarded:—A magnificent collection of cut Roses from Messrs. W. Paul & Son, Waltham Cross, including about forty boxes and baskets representing some thousands of handsome blooms of all the best varieties in cultivation; Violas and Pansies from Messrs. Harkness & Son and Mr. R. W. Proctor; group of plants from Messrs. Dick Radclyffe & Co.; Pelargoniums from Mr. C. Turner, and a superb collection of Peaches, Nectarines, and Cherries from Messrs. Rivers & Son.

First-class certificates were awarded to Messrs. J. Laing & Co., Forest Hill, for Tuberous Begonias Alba Plena, Golden Queen, Mr. A. Forbes, Rose Perfection, and White Perfection; and to Mr. C. Turner for laced Pink Captain Kennedy.

#### CARDIFF.

UNDER more favourable circumstances with respect to weather than any of the preceding shows, the fourth Exhibition of this young though flourishing Society was held in the Drill Hall on Wednesday the 2nd. The building is admirably suited for the purpose—capacious, well lighted from the roof, and airy, but the weather was almost too fine for it. The sun streamed down through the skylight and sadly interfered with the well-being of the flowers on the amateurs' side of the room, many of which under its effect developed more eye than was becoming, while it made others flaccid and unpleasant. This was so palpable that I have no doubt another year there will be some awning stretched over so as to prevent this, the truth being that the weather on which the three previous shows have been held has been gloomy and wet, and so this did not appear; but the good folk of this flourishing town are not people to let matters like this interfere with them a second time.

There has been a marked improvement year by year in the local exhibits, which is the great point at which efforts should be made. Good prizes will induce growers from a distance to come, but after all the great object is to encourage in local societies those who live in the neighbourhood. The Society does its best; it is the only Society which has regularly given two gold medals as prizes, and altogether under the entire management of Mr. Pettigrew, assisted by a good Treasurer and Committee, the Society may well claim the respect of all rosarians for the vigorous manner in which it has carried out its operations. There is still a little "wildness" in the naming of flowers amongst the local exhibitors, but nothing like what it used to be.

The character of the Exhibition was affected, as those I have as yet seen have been, by the intense heat of the weather, and where Roses have to be brought from a distance shut up in boxes it is very difficult to keep them from staring at you when they see the light of day. "Spares" are sadly in request, and many a Rose which promised well in the morning is good for nothing when the time for judging arrives, and has to be hurriedly replaced by another, and so even those who carried off the honours were free to confess that they would like to have shown better.

The Cranston Co., as usual, swept the board in the nurserymen's class in forty-eight singles. Their best blooms were Merveille de Lyon, a grand acquisition; Reynolds Hole, Marie Baumann, La France, Maréchal Niel, Pride of Waltham, Senateur Vaisse, Richard Laxton, Mary Pochin, Horace Vernet, Marie Verdier, Lady Mary Fitzwilliam, very fine; Mrs. Laxton, and Sir Garnet Wolseley. Mr. Tresedar was a good second, and Mr. Parker of Bristol third. In twenty-four trebles the same firm was again first, their best blooms being Merveille de Lyon, E. Y. Teas, Horace Vernet, Maurice Bernardin, Fisher Holmes, Lady Mary Fitzwilliam, Mrs. H. Turner, and Souvenir de la Malmaison. They were also first in twenty-four Teas, their best blooms being Innocente Pirola, Catherine Mermet, Marie Van Houtte, Anna Ollivier, Perle des Jardins, Jean Pernet, Madame Hippolyte Jamain, and Madame Willermoz. Again they were first in thirty-six single trusses, Hybrid Perpetuals only, with La France, Marguerite de St. Amand, Sultan of Zanzibar, Duchesse de Morny, A. K. Williams, Marie Cointet, Merveille de Lyon, Ulrich Brunner, E. Y. Teas, Sir Garnet Wolseley, Reynolds Hole, &c. They also took first for the best box of twenty-four blooms of one Rose with a fine box of La France, Messrs. Parker being second with Marie Baumann.

Amongst amateurs Mr. W. J. Grant of Ledbury took much the same position as the Cranston Co. amongst nurserymen, taking as he did the National Rose Society's gold medal and all the first prizes in the classes in which he exhibited, being, however, run very close by Mr. A. Pettigrew of Cardiff Castle. In the class for twenty-four varieties he exhibited the following:—François Michelin, Souvenir d'un Ami, A. K. Williams, Dr. Hogg, Marquise de Castellane, Marie Van Houtte, Alfred Colomb, Gabriel Luizet, Marie Verdier, Caroline Kuster, Marie Rady, La France, Dupuy Jamain, &c. In the class for twelve he was also first with François Michelin, Constantin Tretiakoff, Mons. Noman, Le Havre, Marguerite de St. Amand, Dupuy Jamain, Madame Gabriel Luizet, A. K. Williams, La France, and Annie Wood. In the class for twelve Teas he was also first with Caroline Kuster, Alba Rosea, Marie Van Houtte, Rubens, Souvenir d'un Ami, Souvenir d'Elise Vardon, Madame Lambard, Innocente Pirola, Comtesse de Nadaillac, Souvenir de Paul Neyron, and Adam. Mr. Thomas Hobbs of Bristol was second. Mr. Grant also took the prize with twelve of one sort with a fine box of Marquise de Castellane, and Mr. Hobbs second with a good box of La France. Mr. Grant also took first for a box of six Teas of one sort with Souvenir d'un Ami.

Amongst the local prizetakers Mr. Treherne secured the first prize and the N.R.S. gold medal with a very good box of blooms, amongst which were A. K. Williams, La France, Général Jacqueminot, Baronne de Rothschild, Souvenir de la Malmaison, Capt. Christy, Jules Margottin, Madame Gabriel Luizet, Marie Verdier, Pierre Notting, Horace Vernet, Marie Rady, Auguste Rigotard, Louis Van Houtte, Charles Lefebvre, Duke of Edinburgh, Marie Baumann, Crown Prince, La France, and Alfred Colomb. Mr. Forrest of St. Fagan's was second.

The Marquis of Bute's special prize for the best box of York-and-Lancaster Rose was gained by Mr. Pettigrew of the Castle Gardens with a very fine box, and that for the best box of Cabbage Roses by Mr. Corbett of Cogan Pell. Mr. Pettigrew gained both first prizes for Strawberries, dishes of four and single dish, with President and Sir Harry.

The Society gives evident proof of progress, as was to be expected under its present able management and the public spirit which characterises this flourishing town.—D., Deal.

#### HITCHIN.

THE cold piercing weather of April, followed by drought and a burning



sun in the chalky side of Hertfordshire, hardly prognosticated auspiciously for a Rose show on Thursday last; nevertheless the encouragement given by this Society to the local exhibitors during the past three or four years is evidently bearing good fruit, and not only was there an average competition in the open classes, but the district was well represented, several amateurs in the locality showing blooms worthy of the "National," notably those in the stand of Mr. E. B. Lindsell of Bearton, Hitchin, from which the best H. P. bloom in the Show in the amateurs' department—a very fine flower of *Pride of Waltham*—was selected for the National Rose Society's bronze medal, and also those from Mrs. Lawson of Lilley Manor, Hitchin, in whose stand of twelve a gorgeous guinea-coloured *Maréchal Niel* nearly 5 inches in diameter was laureated as the best Tea Rose in the same department.

In the dealers' stand the trios of blooms of A. K. Williams, Lady Mary Fitzwilliam, and Merveille de Lyon in the winning stand of Mr. J. House of Peterborough formed a matchless ternate of trebles, and it is noteworthy that all these varieties, probably the three best of recent introduction, stood well the burning heat of the afternoon sun. Mr. G. Paul, although personally at Hitchin, had sent his victorious legions under an able lieutenant to Bath; but his Hitchin flowers, which were regularly good, caused his competitors to use their spurs—the Judges in the open class for eighteen trebles placing Mr. House first; Messrs. Paul & Son, Cheshunt, second; and Messrs. E. P. Francis & Co., Hertford, third.

In the open amateurs' class for twenty-four distinct blooms the Rev. E. L. Fellowes, of Wimpole Rectory, Royston, who was in fine form, led; Mr. J. L. Curtis of Chatteris coming in a close second, and the Rev. F. Fox Lambert of Clothall third. For the class within twenty miles of Hitchin, twenty-four distinct Roses, Mr. Fellowes was again the leader, the Rev. W. H. Jackson of Stagsden Vicarage, Bedford, second; and Mr. E. B. Lindsell third. In the same district class for twelve blooms Mr. Lindsell, who was first, had some very fine blooms; Mr. Jackson was second, and Mr. Fox Lambert third. For nine Roses, the like district, Mrs. Lawson was first, Mr. Lindsell second, and the Rev. E. T. Carey, Hitchin, third. For twelve blooms, open to residents within five miles of Hitchin, Mrs. W. Lucas, Hitchin; Mrs. Lawson, and the Rev. F. H. Gall were all worthily honoured in order named.

Some fine Teas were shown, and it would seem that the delicate tints and exquisite perfumes of this class of Roses are in accordance with present tastes, and that Tea Rose culture is becoming increasingly and deservedly popular. Mr. Fellowes had a bloom of *Francisca Kruger*, which displayed a lovely combination of form and colours, with a "mermet" form; the cream ground of the petals was tinted at the base with the three primaries. This will likely become a general favourite, and if of full size an exhibitor's Rose. Mr. Fellowes was first for twelve Teas, Mr. J. L. Curtis second, and Mr. Jackson third. For nine Mr. Fellowes again first, the Rev. F. Jenyns, Knebworth, second, and Mr. Jackson third. For six Teas (local) Mrs. Lawson was first, Mr. Lindsell second, and Mr. S. Tuke, Hitchin, third.

The competition for baskets of Roses was weak. Mr. Laxton of Bedford showed a stand of seedlings containing some of promise, and of which more will likely be heard. He exhibited also his new *Invincible Carmine Sweet*, which received a first-class certificate at the Royal Horticultural Society's Chiswick trials last year. All went smoothly under the usual genial lead of the Revs. F. H. Gall and E. T. Carey, Hon. Secs., and the only want expressed or felt was that of shade for the Roses. The beautiful grounds of the Priory amply affording it for the visitors, and another year by a slight change of site a cooler atmosphere will doubtless be provided for the flowers.

#### SUTTON.

If I were asked what Society is taking the best course to popularise the Rose I should have no hesitation in naming this flourishing infant, which held only its third Show on Friday last, but which has given indication of its being an infant *Hercules*. I do not refer simply to the spirited manner in which it has organised and carried out its Exhibition, but to the really practical work that it has done in carrying out its operations. Thus it has published with its annual report an elaborate paper on Rose-growing at Sutton, taking into account the peculiarities of soil and climate, and giving such instruction as the experience of intelligent Rose-growers could bring to bear upon it. Then the Committee held classes during the winter to give instruction on Rose-growing, and although they were not numerously attended there is no doubt that they have borne fruit. What other Society has done these things? and am I not justified, then, in giving the palm to this Society for popularising Rose-growing? And although its earnest Secretary, Mr. Wilkins, was, previous to the Show, rather despondent about the results of their labours, yet I think his opinion altered when he saw the local exhibits.

The soil and situation of Sutton are both hot, and consequently a season like this told terribly upon the well-being of the Roses. Rain is wanted on such a soil nearly every day, and when weeks and weeks pass away without any one can readily imagine what a labour Rose-growing has been. No amount of watering supplies the place, and then when blooms seem to be just ready the hot blazing sun on a hot dry soil soon overpowers them, and they are nowhere. Thus in one instance every Rose cut the night before had to be discarded. The truth is that the sun drives them into flower so rapidly that they have no time to get any substance, and consequently fade rapidly. This has been the case in most places during the present season, and is especially true of Sutton.

Not that I think there was much need to make allowances, for the character of the Exhibition was decidedly in advance of that of last year. Perhaps in one or two cases of outsiders, notably Mr. Slaughter, the blooms were not as good; but the local exhibitors showed a decided advance, Mr. Wilkins winning in the large class; and in all the local classes a marked improvement was manifested. The blooms were better, were better staged, and the naming was not so wild. I rather mention these things because the point really to be aimed at in these shows is the encouragement of growers in the locality. Good prizes will always attract those from a distance, but local exhibits are the most interesting.

In the class for twenty-four varieties, not less than twelve varieties, Mr. Ernest Wilkins was first with an excellent stand containing the following varieties—*Capitaine Christy*, *Charles Lefebvre*, *Madame Gabriel Luizet*, *Duchess of Vallombrosa*, *Star of Waltham*, *Victor Verdier*, *Lady Mary Keith*, *La France*, *Paul Neyron*, *Emily Laxton*, *Madame Hippolyte Jamain*,

and *Madame Charles Wood*. In Class 2, for twenty-four varieties, Mr. Slaughter was first with a good stand, but not equal to that of last year, containing *Duchesse of Vallombrosa*, *Anna Ollivier*, *Duke of Edinburgh*, *Madame Eugénie Verdier*, *Jean Ducher*, *Crown Prince*, *Charles Lefebvre*, *François Michelon*, *A. K. Williams*, *Marie Baumann*, *E. Y. Teas*, *Marie Verdier*, *Le Havre*, *La France*, *Duke of Wellington*, *Madame Isaac Pereire*, *Dr. Hogg*, *Mons. Noman*, *Marie Van Houtte*, *Rubens*, and *Antoine Ducher*. In Class 3, twelve varieties, Mrs. Betham, Horsham, was first with *Duchesse of Vallombrosa*, *Edouard Morren*, *A. K. Williams*, *Lord Macaulay*, *Madame Gabriel Luizet*, *La France*, *Xavier Olibo*, *Jean Ducher*, *Capitaine Christy*, *Fisher Holmes*, *Marie Baumann*, *Mons. Noman*. In Class 4, for nine blooms, Mr. F. C. Pawle of Reigate was first with excellent blooms of *Star of Waltham*, *Capitaine Christy*, *Le Havre*, *Eugène Fürst*, *Camille Bernardin*, *Madame Gabriel Luizet*, *Alfred Colomb*, *La France*, and *Gabriel Fournier*. In Class 5, for six blooms, Mr. E. Mawley, Hon. Sec. of the N.R.S., had first prize with an excellent stand of *Baronne de Rothschild*, *Dr. Andry*, *Ulrich Brunner*, *Marquise de Castellane*, *Charles Lefebvre*, and *La France*. Class 6, for three, was not very remarkable. In Class 7 the contest was very close between Mrs. Betham and Mr. Slaughter, eventually the first prize going to the former; an unopen bloom of *Devoniensis* in Mr. Slaughter's stand turned the scale against him. Mrs. Betham's lot were *Madame Willermoz*, *Marie Van Houtte*, *Anna Ollivier*, *Souvenir de Paul Neyron*, *Caroline Kuster*, *Perle des Jardins*, *Madame Bravy*, *Madame de Tastes*, *Niphetos*, *Jean Ducher*, *Rubens*, and *Madame H. Jamain*. In the local classes the chief success was gained by Mr. Barrett, who won the ladies' challenge trophy, the silver medal of the National Rose Society for the best box in the local classes, and the bronze medal for the best bloom in the same division.

In the nurserymen's class there were three competitors—Messrs. Paul and Son, Mr. Rumsey of Waltham, and Mr. Piper of Uckfield, the prizes for thirty-six going in the order named. Messrs. Paul's box contained *Sultan of Zanzibar*, *Alfred Colomb*, *Jean Ducher*, *Charles Lefebvre*, *Madame Gabriel Luizet*, *Comte Raimbaud*, *Henri Ledechaux*, *Duchesse de Vallombrosa*, *Prince Arthur*, *Centifolia Rosea*, *Mons. Noman*, *Abel Carrière*, *Capitaine Christy*, *A. K. Williams*, *Horace Vernet*, *Niphetos*, *Madame Charles Wood*, *La France*, *Marie Baumann*, *Souvenir de la Malmaison*, *Antoine Ducher*, *Dr. Andry*, *Queen of Queens*, *Duke of Teck*, *Abel Grand*, *Madame Prosper Laugier*, *Merveille de Lyon*, *Souvenir de Paul Neyron*, *Comtesse de Serenyi*, *Duke of Edinburgh*, *Madame Eugénie Verdier*, and *Eugène Delaine*. They were also first in Teas with the Hon. Edith Gifford, a good new flower; *Caroline Kuster*, *Catherine Mermet*, *Devoniensis*, *Jean Ducher*, *Perle des Jardins*, *Madame Cusin*, a good Rose in the way of *David Pradel*; *Francisca Kruger*, another good new Rose; *Etoile de Lyon*, very fine; *Innocente Pirola*, *Souvenir d'un Ami*, and *May Paul*.

The decorations at Sutton are always a special feature, and this year there were classes for children under ten, which did them a great deal of credit. In the other classes, table decorations, stands, and brackets, Mrs. Ernest Williams was the most successful exhibitor. It is impossible to describe stands of flowers, so one can only say that they all exhibited considerable taste, making it a difficult matter to decide which were best.

The Exhibition was held in the public hall, and at the end, where there is a sort of theatre, the stage was very prettily arranged by one of the local nurserymen (I omitted to take his name), and much increased the good effect of the Exhibition. Altogether the Exhibition was in every respect a success, and if, with so much against them, this was the case now, may the promoters of it not reasonably expect that each season they will still do better? They deserve success, and it ought to be the wish of every Rose-grower and Rose-lover that they may attain it.—D., Deal.

#### BATH.

MANY interested in the success of this the first independent attempt to hold a Rose Show at Bath were under the impression that, owing to the backwardness of the season, the fixture would be too early. To a certain extent such proved to be the case, as there is no doubt that, grand as the display proved to be, there would have been a still better competition a week later. Many of those who depended solely on standards were "out of it," as these at the above date were not sufficiently advanced to cut from.

#### NURSERYMEN'S CLASSES.

Several noted Rose-growers entered in the two largest classes provided, but only two put in an appearance. With seventy-two blooms Messrs. Paul & Son, Cheshunt, took the lead, being closely followed by the Messrs. Cranston & Co., Hereford. Messrs. Paul's best blooms were *Marie Baumann*, *Mons. Noman*, *Abel Carrière*, *Maréchal Niel*, *Etienne Levet*, *Duke of Edinburgh*, *Souvenir de la Malmaison*, *A. K. Williams*, *Lady Mary Fitzwilliam*, *Madame Cusin*, *Xavier Olibo*, *Charles Darwin*, *Niphetos*, *Capitaine Christy*, *Maurice Bernardin*, *Emily Laxton*, *Souvenir d'un Ami*, *Annie Laxton*, *Etoile de Lyon*, and *Madame Prosper Laugier*. In Messrs. Cranston's stands were good blooms of *Mons. E. Y. Teas*, *Horace Vernet*, *Jean Cherpin*, *Chloris*, *Reynolds Hole*, *A. Colomb*, *Mons. Gabriel Tournier*, *Gabriel Luizet*, *Penelope Mayo*, *Senateur Vaisse*, *Marie Rady*, *Sultan of Zanzibar*, *Marquise de Castellane*, and *Mdlle. Marguerite Manoine*. Messrs. Paul & Son were again first in the class for thirty-six triplets, staging many of the above-mentioned sorts in good condition, also *Niphetos*, *Pride of Waltham*, *Souvenir d'Elise Vardon*, and *Catherine Mermet*. Messrs. Cranston & Co. were second with, among others, good examples of *Horace Vernet*, *Maurice Bernardin*, *Marguerite Brassac*, *La France*, and *Mary Pochin*. Messrs. Curtis, Sanford & Co., Torquay, had the best twenty-four triplets, many of their blooms being fine and fresh, notably *Star of Waltham*, *Duchess of Bedford*, *Lady Sheffield*, *Fisher Holmes*, *Alfred Colomb*, *Capitaine Christy*, *Barthelemy Joubert*, *Charles Darwin*, *Countess of Oxford*, and *Duke of Edinburgh*. Messrs. J. Jeffries & Sons, Cirencester, followed with a very creditable lot of blooms, among which the best were *Ferdinand de Lesseps*, *Louis Van Houtte*, *Marguerite de St. Amand*, *A. K. Williams*, *La France*, and *Général Jacqueminot*. The third prize was awarded to Messrs. Cranston & Co.

The competition was much stronger in the next class, that for twenty-four single blooms. Here Messrs. G. Cooling & Son, Bath, easily won first honours with, perhaps, the best exhibit of the day. All the blooms were remarkably fresh and fine, not a poor specimen being included, and con-



isted of Marie Baumann, Charles Lefebvre, La France, Le Havre, Louis Van Houtte, Mons. Levett, A. K. Williams, Comtesse de Serenyi, May Quennel, Capitaine Christy, Duke of Wellington, Star of Waltham, Madame Rady, Madame Gabriel Luizet, Charles Lee, Marie Verdier, Fisher Holmes, François Michelin, Constantin Tretiakoff, Horace Vernet (extra fine), Abel Carrière, and Senateur Vaisse. The second prize was awarded to Mr. J. Mattock, Oxford, and the third to Mr. A. A. Tanner, Bath, these and four others staging creditably. There were four exhibitors of eighteen Teas or Noisettes, Messrs. Paul & Son taking the lead with an excellent display, among which were good blooms of Catherine Mermet, Madame Margottin, Souvenir d'un Ami, Madame Villermoz, Francisca Kruger, Alba Rosea, Rubens, Madame Welch, Etoile de Lyon, Devoniensis, Niphotos, Madame Welch, Etoile de Lyon, Devoniensis, Niphotos, Madame Cusin, and fairly good Perle des Jardins, Marie Van Houtte, Comtesse de Nadaillac, Madame Lambard, Jean Ducher, and Innocenta Pirola. Mr. J. Mattock was second with a fresh and even lot, including several of the above sorts and Madame Hippolyte Jamain, Amazon, and Belle Lyonnaise. Messrs. J. Jeffries and Son were placed third with rather full blooms, but otherwise good lot of blooms.

#### AMATEURS' CLASSES.

There were six exhibits of thirty-six blooms, the Rev. J. H. Pemberton, Romford, gaining first honours—a silver cup valued at £5—with a generally excellent exhibit, the most noteworthy blooms being of Charles Lefebvre, François Michelin, Exposition de Brie, Duchesse de Vallombrosa, Thérèse Levett, Pride of Waltham, A. K. Williams, Marquise de Castellane, La France, Dr. Andry, Louis Van Houtte, Etienne Levett, Annie Laxton, and William Warden. Mr. T. B. Hall, Bath, was second, and Mr. W. J. Grant third, both collections containing several meritorious blooms. With twenty-four blooms Captaine Christy, Sidmouth, took the lead, his stands including capital examples of Marie Baumann, Dr. Andry, Star of Waltham, A. K. Williams, Camille Bernardin, Abel Carrière, and Charles Lefebvre. S. P. Budd, Esq., Bath (gardener, G. Campbell) was a close second, and the third prize was won by Mr. C. Taylor, Oxford. Mr. W. J. Grant, Hereford, staged the best twelve triplets, these comprising Etienne Levett, Marquise de Castellane, A. K. Williams, and Marie Baumann in good condition. Miss Watson Taylor (gardener, F. Gurdon) followed closely, equal thirds being awarded to Mr. T. B. Hall and the Rev. J. H. Pemberton.

There were nine lots of six triplets staged, Mr. S. P. Budd taking first prize with Capitaine Christy, Alfred Colomb, La France, Xavier Olibo, Madame Gabriel Luizet, and François Michelin, all fresh and of good form and substance. The remaining prizes were well won by Messrs. A. Evans and H. Catley, and there were six other creditable exhibits. There were nine competitors with six blooms, and here Mr. G. Tanner won, his stand including fine blooms of A. K. Williams, La France, and Madame Gabriel Luizet. Messrs. H. Ball and F. Hooper were the other prizewinners.

The best twelve Teas or Noisettes were staged by Miss Watson Taylor, and consisted of fresh examples of Jean Ducher, Comtesse de Nadaillac, Catherine Mermet, Souvenir d'Elise Vardon, Perle des Jardins, Niphotos, La Boule d'Or, Devoniensis, David Pradel, and Souvenir d'un Ami. Mr. W. J. Grant was a good second with somewhat similar varieties, and was followed by Mr. T. B. Hall. In the corresponding class for six varieties Mr. J. Tanner had the best stand, this containing fine fresh blooms of Marie Van Houtte, Jean Ducher, Alba Rosea, Niphotos, Souvenir de Madame Pernet, and Comtesse de Nadaillac. Captain Christy was a good second, his best blooms being Madame Hippolyte Jamain, Bouquet d'Or, and Catherine Mermet. Mr. W. Narroay, Oxford, and Mr. C. Taylor were placed equal third, both staging very creditably.

#### OPEN CLASSES.

With twelve blooms of any Rose Messrs. Curtis, Sanford & Co. were first, having Merveille de Lyon in excellent condition, and this fine variety may safely be said to be one of the best Roses sent out during the last four years. Mr. W. J. Grant followed with Marquise de Castellane in good condition; and Miss Watson Taylor was third with La France. Messrs. Paul and Son were first with twelve blooms of any yellow variety, having the lovely and invaluable Tea Etoile de Lyon in good condition. Mr. J. Mattock was second with a good stand of Marie Van Houtte; and Messrs. Curtis, Sanford & Co. third with richly coloured Maréchal Niel. The latter firm were first with any crimson variety, staging A. K. Williams in perfect condition. Messrs. J. Cooling & Son followed with a good stand of Alfred Colomb; an equal second being awarded to Messrs. Paul & Son for a good box of A. K. Williams. For a stand of any pink variety Mr. S. P. Budd had the pleasure of defeating several formidable opponents, and this Bath amateur must be congratulated upon the successes attending his comparative short career as a Rose-grower. Mr. Budd had a very fine stand of La France, and was followed by G. Paul & Son with Capitaine Christy in good condition, the third prize going to Messrs. Curtis, Sanford & Co. for a good stand of Marie Verdier. The last-mentioned firm were also first for six blooms of any new Rose of 1882 or 1883, winning with fine examples of Merveille de Lyon. Messrs. Cooling & Son and A. A. Walters were awarded equal thirds, the former having Violet Bowyer and the latter Merveille de Lyon in fairly good condition. There was an immense number of bouquets of Roses for the hand staged in the two classes devoted to them. The best twelve were staged by Messrs. Cooling & Son, the Cranston Nursery Company being second, Mr. J. Mattock third, and Mr. W. Smith highly commended. The best six bouquets were arranged by Mr. J. Lovibond, Mr. W. Pethick (gardener, E. S. Cole) being second, Mr. H. Catley third, and Mr. W. Meddick highly commended. The best basket of Roses, charmingly filled with Teas and foliage, came from Mr. J. Mattock, the second prize being well won by G. Cooling & Son, and the third by Mr. A. A. Walters.

The silver medal of the National Rose Society, offered for the best Hybrid Perpetual, was awarded to Messrs. Curtis, Sanford & Co. for a perfect specimen of A. K. Williams, and a similar award was made to Messrs. G. Paul & Son for the best Tea or Noisette in the Show, who won with a lovely bloom of Madame d'Elise Vardon.

#### LOCAL CLASSES.

The prizewinners with twenty-four blooms were Messrs. S. P. Budd, R. B. Cater, H. Catley. The exhibits generally were highly meritorious. The

Rev. J. E. Gardiner, Box, had the best twelve blooms, these including Senateur Vaisse, Prince Arthur, Cheshunt Hybrid, E. Y. Teas, and Countess of Oxford, fresh and good. Mrs. Home (gardener, F. Rice) was a good second, and Mr. H. S. Dutton third. Mr. Landsdowne Daubency (gardener, H. Gay), had the best six blooms, the Rev. C. C. Layard (gardener, J. Weston) being a good second, the third prize going to Mr. F. Hooper. The prizewinners with nine Teas or Noisettes were Mr. S. P. Budd first, Mr. H. Catley second, and Mr. W. Meddick third.

#### BROCKHAM.

THE Brockham Rose Association was exceedingly fortunate in holding its nineteenth Show on a perfect day in a perfect place, on Monday last, July 7th. Broome Park, Betchworth, where Mr. and Mrs. Dopson invited the Committee to hold their Show, was looking at its very best with its beautifully kept garden and its really grand trees. With perfect freedom to go anywhere, and the opportunity of listening to a military band, and invited by the host and hostess to partake of a generous hospitality (the invariable custom, by the way, at the Brockham Rose Show), it is not surprising that the day was one of real pleasure. The Rose Show, held in a large tent in a field adjoining the garden (considering that the season for Rose-growing has been so unsatisfactory) may be called a fairly good one. But it was certainly not up to the usual Brockham mark either as to quality or quantity.

The keenest competition was in the class for twenty-four Roses, in which there were four exhibitors. Mr. G. G. Stone of Red Hill just defeated Rev. Alan Cheales by one point. His box of Roses contained the best Rose in the Show (Annie Wood), besides fine blooms of Pierre Notting, Lord Beaconsfield, and Général Jacqueminot. Mr. Cheales's box was really excellent, but the Roses did not show themselves off as well as they might, being too near the moss. He had in this box good blooms of Charles Lefebvre, Prince Leopold, Duke of Connaught, and Jean Ducher. In Mr. Cuthell's box, which was highly commended, there was a very fine bloom of Abel Carrière, which was the second best Rose in the Show. The class for twelve was exceedingly poor. Mr. Horne was first with a fair box, containing Abel Carrière, Chas. Lefebvre, and François Fontaine. Lady Mary Legge was second. The Prince Arthur in her box was a splendid bloom. In the "six distinct" class, Mr. Leopold Seymour was first with a bright and even lot, and Dr. Parr second. There were seven entries for the four triplets, but the whole were rather weak. Mr. Mortimer, Mr. Leopold Seymour, Mr. G. G. Stone were the three winners. Mr. Cheales won the National Rose Society's gold medal with six fresh and even blooms of La France, but they were not up to the mark of his twenty-fours. Indeed, the soul of the Hon. Treasurer, Captain Lang, was much distressed that the medal should be so feebly won. Mr. Stone and Mr. Cuthell were second and third.

The twelve Teas were somewhat disappointing for Brockham; but Mr. Cuthell and Mr. Wollaston well deserved first and second honours; while in the "six Tea" class Mr. Leopold Seymour with a delightful Jean Sisley, Caroline Kuster, and Climbing Devoniensis, and Mr. Horne with a monstrous Marcelin Roda, fairly ran away from their competitors. The "six of any one kind of Tea" brought out two really good boxes of Marie Van Houtte, shown by Mr. Cuthell and Mr. Wollaston respectively, and Dr. Parr carried off the National Rose Society's silver medal for the best Tea in the Show (a very excellent bloom of Madame Berard).

Of the table decorations little can be said. These, in days gone by, used to be worth inspection. The Committee only allow Roses and foliage to be used. Why they should refuse to let ladies do as they like and employ all kinds of flowers with Roses it is not easy to explain. At any rate the decorations at the last two shows were exceedingly disappointing. Mrs. Cuthell and Mrs. Benecke won the two prizes in the dining-room decorations. (There were only two entries), and Mrs. Cuthell and Lady Anne Legge were the winners in the drawing-room decorations. Miss Cheales, Miss Brodie, and Miss Horne won the buttonhole prizes.

Mr. George Paul helped the Show by bringing a really lovely box of twelve Merveille de Lyon (a dead white Rose, shaded with pink and very large), and also a grand box of twenty-four Roses, more or less new, containing amongst others H. Schultheis (Bennett), Earl of Pembroke, Queen of Queens, Pride of Reigate (a striped sport of Countess of Oxford), Comtesse de Paris, Francisca Kruger (Tea), Madame Cusin (Tea), Lady M. Fitzwilliam (Bennett), and Lady Sheffield.

Mr. Appleby of Dorking also greatly helped the Show by exhibiting plants of Pelargoniums, Ferns, &c., and also a basket of seventeen fine Xavier Olibos; another basket of fourteen Comtesse Nadaillac (Tea), very good and fresh, and a twenty-four box containing some specially fine blooms of Perle de Lyon, Souvenir d'Elise, Anna Ollivier, Madame C. Crapelet, Reynolds Hole, and Madame Margottin. To sum up—

The Exhibition was quite up to the level of other Exhibitions held on a larger scale. The Judges were unanimous in all their decisions.

The enthusiasm of the Committee, especially of the Treasurer (Capt. Lang), and Secretary (Mr. Cheales), was greater than ever, the attendance larger than ever, the luncheon to the Committee and Judges as bountiful as ever, and there is every prospect that the Brockham Rose Association will live for ever.—A. B. ALEXANDER, *Shedfield Vicarage*.

#### FUNGUS ON GOOSEBERRIES.

A CORRESPONDENT, in forwarding us examples of Gooseberries affected with Fungus, desires to have particulars of the enemy and best method of eradicating it. We have no better information to offer than the experience of Mr. John Graham, who described the Fungus and his method of extirpating it as follows:—

"This Fungus consists of small membranous sacs or protuberances, which are found parasitic on the leaves, bark, fruit, &c., of several plants, such as the Fir, Violet, Berberry, Hawthorn, Primrose, Nettle, &c. The membrane forming the sac has received the name of peridium. It pierces the bark or epidermis of the leaves, and encloses very minute dust-like seeds or spores, which are ultimately discharged by an opening in its side or summit. In consequence of the seeds being contained in a membrane, the genus has been referred to a division of Fungi that has been



denominated *Angioearpi*. There are upwards of thirty known species of the genus, and they receive their names from the plants on which they are found. Link has divided this genus into three sub-genera—the *Æcidium* properly so called, the *Ræstelia*, and *Peridermium*. The *Æ. cancellatum* represented (fig. 7) belongs to the second of those divisions. It is often found on the leaves of Pear trees. To the third division belongs the *Æ. Pini*, remarkable for being the largest species, and for growing not upon the leaves but upon the bark of the Pine tree. They vary in colour. The species that grow on the Gooseberry and Barberry leaves are red; that found on the Scotch Fir is yellow, and that on the Meadow Rue bright orange. The *Æcidia* cause considerable deformities in the plants on which they grow, and some of them are decidedly injurious and poisonous. The Gooseberry *Æcidium* is said frequently to destroy the young fruit of that plant, which we are quite satisfied to believe; the species found on the Barberry has been stated, though perhaps erroneously, to be hurtful to corn growing near it; but as some of our horticultural friends may be desirous to know how to subdue this pest, and eradicate it from their Gooseberry plantations, I will give my experience on this point, and how I have gained a perfect cure. In 1868 and 1869 about one-third of the fruit became blotched very much by this Fungus. I gave the ground amongst the bushes a liberal dressing with lime in the autumn, and syringed them over with a compound of alum 1 drachm, tobacco essence 2 ditto, flowers of sulphur  $\frac{1}{2}$  oz., common salt  $\frac{3}{4}$  oz., all mixed in 3 gallons of rain water; this was done twice before the expanding of the leaf, and again as soon as the fruit appeared fairly set. This first destroyed the mycelium in the soil, and the syringing cleared the bark of its sporules; and my Gooseberry bushes are now free from all trace of Fungus."

### ROYAL HORTICULTURAL SOCIETY.

JULY 8TH.

JAPANESE Irises from Chelsea, Roses from Waltham Cross, and hardy herbaceous flowers from Tottenham constituted a trio of attractions at Kensington on Tuesday, which were admired by all who saw them, and each exhibit was in its way unique. The Clematis-like Irises were especially remarkable, the collection of varieties being unrivalled in numbers, diversity of tints, and general beauty. The Roses formed a



Fig. 7.—*Æcidium cancellatum*—a, a berry upon which it is seen growing in its natural size; b, leaf cut showing the part where the peridia are magnified; c, a full-sized leaf affected as the berry, appearing like a drop of red paint at a distance.

beautiful exhibition alone, the thousands of blooms staged being remarkable throughout for their freshness and rich colours. Mr. Ware's hardy flowers have been repeatedly noted before, but the arrangement was even more tasteful than usual, and afforded an excellent example of what admirable displays can be produced with attention to the distinctive characters of the plants employed. Some noteworthy Orchids and several new plants were exhibited, but these were not very numerous.

**FRUIT COMMITTEE.**—Present—Harry J. Veitch, Esq., in the chair; Messrs. James Smith, W. Paul, G. F. Miles, G. Bunyard, J. Willard, and Phillip Crowley. Very few samples of fruit and vegetables were submitted to this Committee, and their duties were soon performed. Mr. J. Hudson, Gunnersbury House Gardens, Acton, exhibited a scarlet-flesh Melon, a cross between Turner's Scarlet Gem and High Cross Hybrid, very prettily netted, but of poor flavour. It is a handsome variety in appearance, and Mr. Hudson describes it as of excellent flavour when in its best condition. Mr. McIlwick, New Lodge, Windsor Forest, showed two seedling Melons of fair flavour and deep in the flesh, a letter of thanks being accorded for them.

Mr. H. Eckford, Boreatton Park Gardens, Baschurch, showed three dishes of Peas, one named Magnificent another Morning Star, which is to be tried at Chiswick, and the third was named Baroness, all with pods of moderate size well filled with peas. Mr. Wm. Horley, Toddington, Beds, sent a dish of fruit of a seedling Apple, and Messrs. Richard Smith & Co., Worcester, also sent a seedling Apple which was over-ripe, and neither sample was in good condition. Mr. J. House, Peterborough, showed samples of his Perfect Marrow Pea, grown in the open field without sticks. It is a short-podded variety, very prolific, strong, and dwarf. The Committee expressed much satisfaction with its appearance, and it is to be tried at Chiswick.

**FLORAL COMMITTEE.**—Section A.—Present—Thos. Moore, Esq., in the chair; Messrs. J. Laing, H. Herbst, J. Hudson, G. Henslow, J. Dominy, E. Hill, and Dr. Masters. Section B.—Present—Shirley Hibberd, Esq., in the chair; Messrs. H. Bennett, W. Bealby; J. T. D. Llewelyn; G. Duffield, and J. Douglas.

A magnificent collection of varieties of *Iris Kämpferi* was exhibited by Messrs. J. Veitch & Sons, Chelsea, a large number of handsome varieties being represented, several of which were certificated. In addition to those so honoured the following were remarkable:—Rob Roy, rich violet-purple; Henry Irving, white with violet pencillings; The Czar, beautifully streaked and freckled with rosy purple on a light ground; General Gordon, light ground with violet and blue pencillings and streaks; Duchess of Albany, rosy purple, yellow blotch at the base of the divisions; Ambassador, rich crimson veining on a rosy ground; Princess Beatrice, white; and Crimson King, deep crimson, with a gold blotch at the base of the petals. There were also many unnamed seedlings of great merit and varied colours. A box of handsome Carnation blooms was also staged by Messrs. Veitch, and six boxes of large substantial and richly coloured Rose blooms, together with a number of *Campanula Media calycanthema*, and a choice collection of new plants, several of which were honoured with certificates. Prominent amongst these plants were the following:—*Andromeda speciosa cussiniifolia*, for which a vote of thanks was accorded, with pure white bell-shaped flowers in abundance, was very handsome; *Escallonia Philipiana* had numerous small white flowers on short branchlets from the main stem; *Rosa rugosa purpurea* had larger, more richly coloured flowers than the ordinary variety; and *Genista tinctoria fl.-pl.*, with double bright yellow flowers in dense heads. The Council recognised the merits of these valuable exhibits by awarding a silver Banksian medal for them.

Sir Trevor Lawrence, Bart., M.P., Burford Lodge, Dorking (gardener Mr. Baxter), exhibited a choice collection of new Orchids, several of which were certificated. One remarkable plant not recognised was *Dendrobium erythroxanthum*, with clusters of a dozen or more small almost tubular orange-coloured flowers, veined with red, parallel with the edges of the sepals and petals. A vote of thanks was accorded to W. Vanner, Esq., Camden Wood, Chislehurst, for a healthy plant of *Vanda Sanderiana*, bearing a spike of handsome flowers. It showed the characters of this distinct and beautiful species to the best advantage, the peculiar colours and veining being finely developed. Mr. D. B. Crawshaw, Sevenoaks, showed a plant of *Cattleya Sanderiana* with two grand flowers, the lip of great size, and of a most intensely rich crimson colour. H. J. Buchan, Esq., Wilton House, Southampton (gardener, Mr. Osborne), contributed a plant of *Odontoglossum mirandum* with a spike of eleven of its curious yellow-margined flowers. This is a pretty and quite distinct Orchid, the sepals and petals being narrow acute, with a central band of dull brown, and a clearly defined margin of pale yellow.

A grand bank of Rose blooms extending half the length of the conservatory was formed by the collection from Messrs. Paul & Son, Waltham Cross, which comprised twenty-three baskets and twenty boxes, the majority of the former filled with blooms of one variety each, and the others contained general collections representing scores of the best varieties. The Tea Roses were uncommonly fine, and many of the Hybrid Perpetuals were similarly noteworthy for their substance. Particularly good were the following:—*La France*, *Général Jacqueminot*, *Capitaine Christy*, A. K. Williams, *Homere*, *Gloire de Dijon*, *Catherine Mermet*, *Pride of Waltham*, *Madame Ducher*, *Perle des Jardins*, *Souvenir de la Malmaison*, *Duchess of Bedford*, *Lady Mary Fitzwilliam*, *Marie Van Houtte*, *Niphetos*, *Marie Baumann*, *Xavier Olibo*, and *Madame Falcot*. Associated as they were with plenty of foliage the effect was beautiful in the extreme. A silver-gilt medal was awarded to Mr. Paul.

The hardy flowers staged by Mr. T. S. Ware of Tottenham were exceedingly handsome, the arrangement having been conducted most skilfully, and the numerous choice and effective flowers employed produced a highly attractive display. A large number of Lilies were introduced, probably about twenty-five species and varieties. *Campanulas*, *Pinks*, *Carnations*, and a multitude of useful and choice plants were represented. A silver-gilt medal was awarded for this group by the Council. Messrs. Kelway & Son, Langport, exhibited three boxes of herbaceous plants, including many rarities, several named varieties of *Gaillardias*, a box of Tea Roses, and three boxes of single and double *Pyrethrums*, a silver medal being accorded for them.

Mr. C. Turner, Slough, was awarded a bronze medal for four boxes of Carnation and Picotee blooms in splendid condition, fresh, clean, and beautiful. Messrs. W. Paul & Son also sent a box of crimson seedling Roses from *Gloire de Dijon* and blooms of a new Hybrid Perpetual named *Garden Favourite*, of a clear pink colour with large shell-like petals.

Mr. T. S. Ware showed two plants of a fine Tree Carnation named *John Barnet*, large, full, and of a bright rose colour. Mr. Bealby, Roehampton, sent blooms of the white Tree Carnation *Madame Carle*, which were large, fragrant, and of good form. Mr. Urban Warren, 4, Pitville Street, Darwen, Lancashire, sent several dark-coloured dwarf *Tropæolums* named *Herbert Arthnr*. Mr. H. Eckford exhibited a collection of Sweet Peas, blue, white, deep crimson, rose, and pink, brightly and clearly coloured, and extremely fragrant. Messrs. J. Laing & Co., Forest Hill, showed a plant of *Tuberous Begonia Madame Arnolt*, a handsome double pink variety with enormous blooms.

First-class certificates were awarded for the following plants:—

*Aerides illustre* (Sir Trevor Lawrence).—A very handsome Orchid, with a spike of twenty-eight large flowers. The sepals and petals are white with a slight tint of crimson and a few dots; the lip is large, triangular in form, and rich rosy crimson. It appears to be a strong and good-habited plant.



*Cattleya Gaskelliana alba* (D. B. Crawshaw, Esq., Rosefield, Sevenoaks).—A lovely variety with large handsomely formed flowers, pure white except for the yellow throat and a tinge of purple in the centre of the lip.

*Cattleya calummata* (Sir Trevor Lawrence).—One of the *C. Acklandiae* type; sepals and petals narrow spotted with crimson, the lip with pale wings and an intensely rich crimson central lobe.

*Cypripedium Curtisii* (Sir Trevor Lawrence).—A handsome species, which has been previously described.

*Medinilla Teysmanniana* (Veitch).—A bold plant with fine leaves like *M. magnifica*; the flowers are 1 inch across in a conical head, bright rose, anthers mauve.

*Indigofera floribunda alba* (Veitch).—A pure white variety of this well-known shrub, the flowers in slender racemes 6 or 8 inches long.

*Carnation Celia* (Veitch).—A bright clear pink self, full, and of good form. Free and vigorous in habit.

*Iris Kämpferi Earl Granville* (Veitch).—A grand flower, 8 inches in diameter, rich violet-purple with darker veins.

*Iris Kämpferi Princess Maude* (Veitch).—Flower large, white, with yellow blotches at the base.

*Iris Kämpferi Mary Anderson* (Veitch).—A charming variety; white, h purple pencilling, petals equal in size and rounded.

*Spiraea purpurea* (Veitch).—A Japanese species somewhat like *S. palmata* but with cymes of delicate rosy flowers, and neat five-lobed bronzy green leaves. Very dwarf and free.

*Perpetua? Carnation Martha* (Duffield).—A very free and pretty variety. Yellow ground, with crimson and scarlet streaks.

*Delphinium Gloire de Nancy* (Bealhy).—A pretty double variety, with neatly formed flowers, mauve edged with pale blue. Very distinct and attractive.

SCIENTIFIC COMMITTEE.—Professor M. Foster in the chair. *Lansia tibetica*; *Hk. f. and T.*—Mr. Loder exhibited this plant, figured in "Hooker's Journal," 1857, but which does not appear to have flowered in England before. *Ranunculus cortusifolius*.—He also showed this fine species ("Bot. Mag.," 4625), and a white *Orchis* resembling *O. pyramidalis* in form. It was referred to Mr. Ridley for examination; it came from Rev. H. Crewe's collection; also *Gentiana havarica*, finely grown plants with deep violet-blue blossoms, and he also brought specimens of *Plantago major* and *lanceolata* with foliaceous bracts, a well-known monstrosity.

*Monstrous Geum rivale*.—Mr. Boulger described a form of this plant with a foliaceous calyx, corolla of three rows of petals, stamens reduced in number and proliferous; instead of a pistil the prolonged axis bearing a normal flower. This form was described by Dr. Hill in 1758.

*Chlora perfoliata*.—Mr. Boulger noticed that this plant opens its flowers at 9 A.M. and closes them about 4.30 P.M., and a specimen which was placed in his vasculum with closed blossoms was found to be opened at the usual hour, though in the dark.

*Acidium Euphorbiae*.—Dr. Masters exhibited a specimen of *E. cyparissias* from Zermatt, the leaves of which were increased in dimension in consequence of the attack of this fungus.

Report on Potato Culture at Chiswick.—Dr. Masters reported that the second visit to Chiswick of the Sub-Committee had been made, and that, though the disease was present in the gardens, it had not yet reached the experimental plot. The second series were earthed-up in the manner as directed by Mr. Plowright.

*Puccinia Vincæ*.—Mr. W. G. Smith exhibited plants of *Periwinkle* attacked by this fungus, which does not as a rule appear to be very common.

*Honeydew*.—Mr. Bennett called attention to the fact that the Limes are very abundant in honeydew, and the question was again raised as to the part aphides play in its production. The general opinion (as expressed previously when the question was raised) was that it is more due to the intense heat causing an alteration in the starch into a sugary substance.

*Indigofera floribunda alba*.—This plant was exhibited by Mr. Veitch, but as it had not the peculiar irritability of the stamens characteristic of species of *Indigofera* as described by the Rev. G. Henslow in the Journal of the Linnean Society, it was referred to Dr. Masters to ascertain the correct name.

*Picea Nordmanniana* Attacked by *Aphis*.—A horticulturist forwarded branches of this tree attacked by *aphis*, and which were described as committing great destruction amongst plants of this species and also of *Abies grandis*. It was referred to Mr. MacLachlan for examination and report.

*Dried Rhubarb Stalks*.—Mrs. Jones forwarded a sample of *Rhubarb* from which nearly all the juice has been expressed and dried. She recommends its use in winter as a preserve. It was referred to the Secretary for examination and report.

*Hybrid Digitalis*.—Mr. A. Dean sent specimens of a supposed hybrid between *D. purpurea* and *D. lutea*. The late Professor Henslow described a natural hybrid between these species, the blossoms of which were decidedly intermediate in colour. Those sent by Mr. Dean appear to be much yellower and with less purple. It was given to the Rev. J. Henslow for examination and report.

*Monstrous Antirrhinum*.—The seedling Snapdragon, "Rowsham Pet," forwarded to the last meeting by Mr. James King of Aylesbury, who received a certificate for it, appears to have a tendency to the "peloric" or regular condition. The calyx is quite normal. The corolla has the two lateral petals developing small labial yellow ridges, thereby imitating the anterior or lip petal. Each of the two posterior petals constituting the hood are bifurcated above, while the corolla, instead of being personate and closed, is widely expanded, the lobes forming an irregular corrugated rim. The four stamens are abnormally twisted, and bear contabescent anthers. The position of the normally absent fifth stamen on the posterior side is occupied by two staminodia with petaloid crozier-shaped structures, somewhat resembling the petals of *Aconitum*, together with a short filiform structure between them; the pistil is normal.

## THE GUM DISEASE IN PLANTS.

SIR JAMES PAGET, Bart., communicated to the *Medical Times* recently the outline of some researches in connection with the contagion of gum-disease in plants undertaken by Dr. Beijerinck and lately published in the

Royal Academy of Sciences at Amsterdam. The matter is of much interest and the substance is given as follows:—

"The gum-disease (gummosis, gum-flux) is only too well known to all who grow Peaches, Apricots, Plums, Cherries, or other stone fruits. A similar disease produces gum arabic, gum tragacanth, and probably many resins and gum-resins. It shows itself openly in the exudation of thick and sticky or hard and dry lumps of gum, which cling on branches of any of these trees where they have been cracked or wounded through the bark. To any students of medicine or pathology who live within range of such trees Dr. Beijerinck's observations may suggest some interesting researches.

"Dr. Beijerinck was induced to make experimental inoculations of the gum-disease by suspicions that, like some others observed in plants, it was due to bacteria. He ascertained that it is in a high degree contagious, and can easily be produced by inserting the gum under the edge of a wound through the bark of any of the trees above named. The observation that heated or long-boiled pieces of gum lose their contagious property made it most probable that a living organism was concerned in the contagion; and he then found that only those pieces of the gum conveyed contagion in which, whether with or without bacteria, there were spores of a relatively highly organised fungus, belonging to the class of ascomycetes: and that these spores, inserted by themselves under the bark, produced the same pathological changes as did the pieces of gum.

"The fungus, thus detected, was examined by Professor Oudemans, who ascertained it to be a new species of *Coryneum*, and has named it *Coryneum Beijerinckii*. Its characters, which are minutely described, are chiefly that it has a cushion-like stroma, consisting of a bright brown parenchyma, on which numerous conidia stand on colourless, unicellular, and very slender stems, about as long as themselves. The conidia are small, cask-shaped, about one-thirtieth of a millimetre in length, and usually divided by slightly constricting septa into four cells, of which the two terminal are longer than the two middle. From these cells germinal filaments may proceed, from which are developed either yeast-cells, or brown thick-walled and many-celled mycelia.

"The inoculation experiments are best made by means of incisions through the bark of young branches of healthy Peach trees or Cherry trees, and by slightly raising the cut edge of the bark and putting under it little bits of gum from a diseased tree of the same kind. In nearly every instance these wounds become the seats of acute gum-disease, while similar wounds in the same or other branches of the same tree, into which no gum is inserted, remain healthy, unless by chance gum be washed into them during rain. The inoculation fails only when the inserted pieces of gum contain no *coryneum*.

"By similar inoculations similar diseases can be produced in Plum, Almond, and Apricot trees, and with the gum of any one of these trees any other can be infected; but of many other substances which Beijerinck tried not one produced any similar disease.

"The inoculation with the gum is commonly followed by the death of more or less of the adjacent structures; first of the bark, then of the wood. Small branches or leafstalks thus infected in winter, or in many places at the same time, may be completely killed; but, in the more instructive experiments the first symptom of the gum-disease is the appearance of a beautiful red colour around the wound. It comes out in spots like those which often appear spontaneously on the green young branches of Peach trees that have gum-disease; and in these spots it is usual to find *coryneum*-stromata, or mycelium-filaments. The colour is due to the formation of a red pigment in one or more of the layers of the cells of the bark.

"But in its further progress the disease extends beyond the parts at which the *coryneum* or any structures derived from it, can be found; and this extension, Beijerinck believes, is due to the production of a fluid, of the nature of a ferment, produced by the *coryneum*, and penetrating the adjacent structures. This, acting on the cell-walls, the starch granules, and other constituents of the cells, transforms them into gum, and even changes into gum the *coryneum* itself, reminding the observer of the self-digestion of a stomach.

"In the cells of the cambium, the same fluid penetrating unites with the protoplasm, and so alters it that the cells produced from it form, not good normal wood, but a morbid parenchymatous structure. The cells of this parenchyma, well known among the features of gum-disease, are cubical or polyhedral, thin-walled, and rich in protoplasm. This, in its turn, is transformed into gum, such as fills the gum channels and other cavities found in wood, and sometimes regarded as gum glands. And from this also the new ferment-fluid constantly produced, and tracking along the tissues of the branches, conveys the *coryneum* infection beyond the places in which its mycelium can be found."

## SPORTS PHYSIOLOGICALLY CONSIDERED.

(Continued from page 371, last vol.)

AN interesting discussion followed the reading of Mr. Talbot's paper on this subject, in the course of which many important facts were enumerated.

The Hon. Marshall P. Wilder said that Mr. Talbot had so systematised his facts in regard to physiology, and stated them in such a sensible way, as to make his paper a remarkable one. His method of accounting for the production of four different kinds of wood in the Pear tree, by the cell being matured in the wood formed, the speaker thought correct. We all know how cells are produced and conjoined, but he had not so well understood the process by which sports are produced, and that whether they are called hybrids or sports, the process is the same. He had had much experience in producing new varieties, and some sports which he has fixed may have come from such a union of cells as the essayist had described.

D. W. Lothrop said that he had been exceedingly interested in the paper. The subject is very complicated—as much so as anything in science, except that of soils. Many German writers seem to be trying to explain old mysteries by new phrases. The moment you can produce a sport, you show that you understand the laws which govern it. If we cannot get positive evidence on the subject, we may get negative. There is no certainty in regard to sports: when we arrive at certainty regarding them,



they cease to be sports. It makes no difference what name is given to them. He has a grafted tree, on which all the grafts have shown themselves the same as he put in, except one branch, which has not yet borne, is different in leaf, and will probably prove a sport, or what Professor Gray would call a bud variety. But such phenomena cannot be produced at will. The cell process does not make it clear how the sweet and sour Apple was produced. Mr. Meehan's process, by splitting the graft through the bud, is legitimate and natural, and can be effected, as is known. Mr. Cox says he has seen an Apple in which the properties of the Newtown Pippin and a Russeting were mixed by the accidental intermingling of the branches of two trees growing in an orchard at Trenton, N.J.; one end of each Apple was strongly marked externally by the character of the Russet parent; the other equally resembled the Pippin, and the flavour and juice of each end corresponded exactly with its external appearance. Here is an extraneous influence, from pollen or otherwise, affecting the fruit, and it seems to be accidental or abnormal in nature, and could not be produced at will. We sometimes see an Apple shaped like a Pear; this is a sport not explained by the cell process, and which nobody can produce. It may be that where two branches from two trees come together, the pollen may have fructified and affected the shape of the fruit (not the seed) the same year.

Mr. Talbot did not believe in accidents in nature. When we understand the laws which govern variations, it is not proper to call them sports. The best authorities speak of species hybrids, or mules, or variety hybrids or crosses. He did not believe in bud variations; a bud is a cell with other appendages, and the vital part is a single cell, which divides in the spring and carries on growth. He could not see how the Pear-shaped Apple could be produced by pollen, but by combining one cell with another it could be produced. Hybridising was formerly looked upon as being as mysterious as things are thought now. He brought up the subject to call attention to facts recorded from twenty to forty years ago.

C. Terry asked how a bud could be split without destroying it.

Mr. Talbot said that he split twelve buds, and that in three cases they united, and are now living. In two cases where he joined halves of buds on a scion, and inserted the scion in another stock, they did not live. The foliage produced by the split buds is slightly different from that of the stock. The contents of the buds have united.

Charles M. Hovey denied that all sports are hybrids, and said that it is folly to assert it. If a bud is cut in the germ, it will be destroyed. The flowers now in the fruit buds were formed last summer, and the wood buds the same. There is an infinitesimal point in a seed—of a Cucumber, for instance—which, if cut through, the germ will be destroyed. The difference between a hybrid and a cross is that, in the former, two species are united, and in the latter, two varieties. The product of the former is termed a mule, but sometimes it will produce seed. When we cross-fertilise a Camellia or a Strawberry we get something between the two varieties crossed. An Oak throws out a variegated leaf: where did it get the white leaf? A Chrysanthemum may be propagated for ten years by cuttings, and not by seed, and by-and-by a yellow-flowered plant produces a white one, and the two come out simultaneously. The Browallia will sometimes produce a branch with white flowers. These are all things of which we know not how they are done, but the speaker hoped we might find out. Some things are yet unfathomable; we cannot find out the law by which a wild stock, when grafted, produces eight or ten varieties of fruit, and all distinct. Van Mons did not believe in hybridising; why did his seedlings vary?

Mr. Talbot replied to Mr. Hovey's last query, that Van Mons planted the trees which produced his seeds alongside other varieties.

Mr. Wilder agreed with Mr. Talbot that Van Mons must have planted his trees in his garden with other varieties.

Mr. Hovey said that Geraniums and other plants grown in green-houses where there are no other varieties, will vary when grown from seed. Nature has provided against the chance of flowers not being fertilised, by a surplus of stamens, as in all the Rosaceae, and there is no need of foreign fertilisation; three-quarters of them do their own fertilisation. Variations take place without regard to their hybridisation, not only in the vegetable world, but throughout creation.

William C. Strong was called on, and said that he was not inclined to speak, because he felt the danger of expressing crude opinions. He felt under obligations to the essayist for his paper, but was not ready to follow it. As regards hybridisation by different kinds of protoplasm producing the different varieties in seed, we may, perhaps, agree; but to divide, and afterwards to cross in an artificial way, admits of very grave doubts. To split a single cell would destroy it.

Mr. Talbot said that Mr. Strong did not make the distinction between protoplasm and the beginning of a cell. One single cell divides and makes other cells, called the parent cell. If we can divide that and unite another half cell with it, it makes but a single cell.

### COMING FLOWER SHOWS.

EXHIBITIONS are as numerous as ever, the following being those for July, August, and September, of which we have received any notification at present:—

- July 10th.—Oxford (Roses).
- " 14th.—Wolverhampton (three days).
- " 16th.—Bedford.
- " 17th.—Carlisle (two days). Warkworth (Roses). Newport.
- " 19th.—Manchester (Roses).
- " 22nd.—Royal Horticultural Society, Fruit and Floral Committees; Fruit and Vegetable Show; Carnation and Picotee Show.
- " 23rd.—Newcastle-on-Tyne (three days). Feltham.
- " 24th.—Sheffield (two days).
- " 30th.—Warwick.
- August 2nd.—Liverpool (two days). Southampton (two days).
- " 12th.—Royal Horticultural Society, Fruit and Floral Committees; Cottagers' Show.
- " 14th.—Maidenhead.
- " 15th, 16th.—Chesham, Chesham.
- " 20th.—Shrewsbury (two days).
- " 21st.—Reading.
- " 26th.—Royal Horticultural Society, Fruit and Floral Committees; Fruit and Vegetable Show. Banbury.

- September 2nd.—Stratford-on-Avon (two days).
- " 3rd.—Glasgow. Bath (two days).
- " 5th.—Crystal Palace Fruit and Dahlias (two days).
- " 9th.—Royal Horticultural Society, Fruit and Floral Committees.
- " 11th.—Bury St. Edmunds (two days). Dundee International (three days).
- " 17th.—Edinburgh (two days).
- " 23rd.—Royal Horticultural Society, Fruit and Floral Committees; Fruit and Vegetable Show.



### HARDY FRUIT GARDEN.

*Strawberries.*—Now is the time when Strawberries are in full perfection, and the earliest runners are induced to emit roots strongly by pegging each one separately upon the middle of a 3-inch potful of rich soil, each pot being plunged to the rim to check evaporation or save very frequent watering. Those gardeners who add new sorts to their collection as they are offered for sale are able to compare sort with sort and judge for themselves which are worthy of being increased and which to discard. For the special benefit of beginners and owners of small gardens we have again made a careful comparison of the best sorts now in cultivation, and this is the result. For large gardens where only an abundant crop of good-flavoured fruit is required take for a succession Black Prince, Early Prolific, Keen's Seedling, Lucas, Sir Joseph Paxton, Bicton Pine, James Veitch, Sir Charles Napier, Dr. Hogg, The Countess, Frogmore Late Pine, Helena Gloede, and Loxford Hall Seedling. These are named in the order of ripening, and are all sorts of proved merit, each having distinct characteristics, and all of them affording bountiful crops of fruit under good cultivation. For small gardens Black Prince, James Veitch, Sir Joseph Paxton, Helena Gloede, and Loxford Hall Seedling are the best selection for a succession. Where only one sort is wanted plant Helena Gloede, because it is hardy, robust, very vigorous, ripening the first of its heavy crop of large fruit with mid-season kinds, and the last with the later sorts. There is no finer sight in Strawberry culture than a two-year-old plant of Helena Gloede in full bearing; so fine is it that, although we usually recommend beds generally to have the rows 2 feet apart and the plants 1 foot apart in the rows, yet for this fine sort we in our thin light soil afford 2 feet from plant to plant, and in deeper richer soil 3 feet would not be too much. Sir Joseph Paxton and James Veitch are both sorts of high excellence, worthy of a place in every garden. In new gardens it is unwise to confine the planting to one sort, but rather to select one or two early, midseason, and late kinds for trial. To those who prefer a large early sort in preference to Black Prince and Early Prolific, and are not particular about nice points of flavour, Marguerite may be recommended as a heavy cropper with very large fruit, but so soft that it requires great care if packed for sending by rail. Vicomtesse Héricarte de Thury deserves mention as an excellent early variety, a heavy cropper, bearing a lot of medium-sized fruit, firm, high coloured and well flavoured. It is an excellent variety for preserving, its only fault being its tendency in some soils to produce an excessive quantity of leaves at the expense of fruit. For this reason preference is usually given to Keen's Seedling. The Vicomtesse in our garden has an abundant crop of fruit this year; we value it so highly as to grow about a thousand plants of it. Bicton Pine is the best white sort, having large well-flavoured fruit. Loxford Hall Seedling is the latest of all, of compact growth, bearing a heavy crop of large, handsome, highly flavoured fruit, quite an indispensable variety. In addition to the foregoing sorts, others worthy of culture by the connoisseur are Anna de Rothschild, La Grosse Sucrée, Duc de Magenta, Auguste Nicaise, Bonle d'Or, President, Triomphe de Paris, Harmonia, Samuel Bradley, and Traveller. Harmonia is worthy of especial notice, having plants of medium growth bearing large crops of its large firm fruit, of fine flavour, with a pleasant brisk acidity.

*The Soil.*—Good drainage, thorough mechanical division, with plenty of manure and deep stirring, will render any garden soil suitable for the growth of good Strawberries. An extra quantity of coal ashes will correct heaviness or tenacity; rich dung and lime will sweeten and enrich; drain pipes will not only keep the soil sound, sweet, and free from an accumulation of water, but will draw the air into it with its fertilising gases and warmth. See to the careful preparation of the soil forthwith, so as to be ready for the planting during the present month. The position of the new beds should be carefully considered; for very early fruit a sloping bank or warm sunny corner is best; for the general crop any part of the garden that is well open to the sun; for very late fruit a north border, or beneath old standard fruit trees, where it is obvious the soil cannot be much disturbed, but it may be managed so as to obtain fair crops of fruit in August by means of surface dressings of rich manure.

### FRUIT FORCING.

*Figs.*—*Earliest-forced Trees in Pots.*—When the second crop has been gathered forcing should be discontinued, and the young growths should be allowed to draw up to the light or glass, where they will ripen the wood quite up to the points and set embryo fruit at every joint, but care must be taken that the fruit does not become too far advanced to stand over the autumn. Sometimes a third crop is taken, but it is had



at the expense of the next early crop, and this is of far greater value when forced fruit is most wanted, and on that account it is the soundest practice to secure two crops, and then gradually inure the trees to a lower temperature, so as to enable them to bear full exposure in August and September. A liberal supply of water is, of course, necessary, and the trees will require good syringings and probably the application of an insecticide; and it is important the foliage be kept clean and healthy to the last, and when it shows signs of ripening a gradual reduction both of the water supply to the roots and foliage will tend to ripen the wood and roots.

*Fig Trees Permanently Planted out.*—Trees in succession houses will require similar treatment to the Fig trees in pots with regard to cropping and ripening, allowing the points of the shoots to ascend. Under the long-rod system of training, which is the best for trees trained to trellises, less stopping or pinching is required; many fruit trees, and especially Fig trees, are injured by being pinched late in the season, and it ought not to be practised after the beginning of July. Pinching is a poor remedy for over-luxuriance. When the trees are becoming too luxuriant it is better to lift, root-prune, and replant in the autumn than by stopping cause the production of late growth and have a number of soft growths which can never ripen. When the trained trees have finished the first crop of fruit the needful cleansing of the foliage and liberal thinning of the fruit from which the second crop is to be secured must have attention, otherwise the fruit will be small and poor in quality. Figs delight in heat and moisture when growing, and require an abundance of light and air when ripening.

*Peaches and Nectarines—Succession Houses.*—Houses in which the trees have passed the stoning period should be carefully examined, and all small and badly placed fruit removed before their detention has interfered with those required for the crop. A fair average crop is better every way than a heavy one, as it means a glut of fruit one season and a scarcity the next. A full crop is a fruit to every square foot of trellis covered by the trees, and to keep them up to this frequent lifting and relaying of the roots in fresh soil, along with good feeding by means of rich mulchings and waterings with liquid manure, are absolutely necessary. Timely thinning the fruit and carefully stopping the shoots that it is intended to remove after the crop is gathered are good preventives of the trees casting the fruit in stoning, and the finest and heaviest crop of fruit is obtained without injury to the trees. Ply the syringe twice a day until the fruit begins to soften or ripen, always using clear rain water, as any sediment adheres to the woolly coat of the Peach and is a great blemish. Seek to prevent soft elongated growth by free ventilation in the early part of the day, but run up to 80°, with a free circulation of air through the house under bright sun, and close in time to keep it up to that temperature for some time afterwards.

*Late Houses.*—Keep the trees thin of wood, not laying in a single shoot that will not be required for next year's fruiting or for extending the trees. Stop all gross shoots and keep them neatly tied, not too tightly, as that is a prolific source of gumming. Water inside borders abundantly through a mulching of decayed manure, also outside borders if the rainfall be deficient, as it is in most places this season. Ventilate early, and close early unless the fruit is to be retarded, then keep the ventilators open constantly. Syringe freely as a means of keeping down red spider, but do not allow the trees to remain wet through the night.

*Early Houses.*—When the fruit is removed thoroughly cleanse the trees by washing with the garden engine, repeating as occasion requires it being important that the foliage be kept clean and healthy until they die naturally. Take out all shoots that have borne fruit and are not wanted for extension. Mulch and feed weakly trees until their buds are properly developed, moisture at the roots being of quite as much consequence if not more after the fruit is gathered as whilst the trees are carrying their crops. Trees that are too luxuriant or persist in growing when they should be ripening their wood should be marked for lifting when the proper time arrives, which is when the leaves give indications of falling.

#### PLANT HOUSES.

*Pelargoniums.*—French and Fancy varieties that have flowered should now be placed outside and kept rather dry to harden and ripen their wood previous to being pruned back; this should be done at once when the wood is hard and firm, and the plants again started into growth in a cold frame. The frame should be kept close, and the plants well syringed until they commence growth. Cuttings that were inserted from these plants some time ago are now rooted and ready for 3-inch pots. Keep them close in a frame until established, and then grow them under cool airy conditions until they have to be housed in autumn. If the points of the plants have not been pinched out it should be done directly the roots are working in the new soil. These plants, if well cared for, will come into bloom very early in the spring without much trouble. Another batch of healthy robust cuttings should be inserted, not mere flower stems as frequently inserted for cuttings, for these can never be expected to make healthy vigorous plants. It is a great mistake in the cultivation of these plants to select weak puny cuttings from plants that have been exhausted by flowering. For decorative purposes plants in 5 and 6-inch pots are the best, and young vigorous plants for this purpose are preferable to old ones. In potting, press the soil firmly, so as to induce a firm sturdy growth. Use for a compost loam, a seventh of manure, and sand.

Zonals intended for late summer and autumn flowering are much better outside, providing they have been well hardened, than under glass. Their growth will be sturdy and in the best of condition for flowering profusely when required to do so. The only attention needed is watering and feeding when their pots are full of roots, pinching the shoots, and removing the flowers. Those for winter flowering, if ready, may be

transferred to their flowering pots, and then placed in a sunny position on a bed of ashes or other material where they will be safe from worms entering their pots. It is a good plan to strike a batch of plants at the present time for flowering during winter in 3-inch pots. Strong healthy cuttings should be selected and the points taken out before insertion, which will induce the plants to branch, and no further attention in pinching them will be needed. Insert them singly in the pots in which they are intended to flower.

*Calceolarias.*—These, from the earliest sown seed, will now be ready for pricking out singly into other pans. The plants are rather small, but they are much better pricked out in this stage than left in the seed pan to draw up weakly. The pans in which they are to be pricked should be well drained and filled with light soil, consisting of fully one-half leaf mould that has been passed through a fine sieve. The pans should be kept in a cool, moist, shady position. A little more seed may, with advantage, be sown. The soil in the pan or pots being fine, the seed may be sown upon the surface, and then watered lightly with a fine-rose can. After sowing the pan or pot should be covered with a square of glass until the seed germinates. It is a good plan to cover the glass with moss, which should be kept damp to prevent evaporation as much as possible.

*Cinerarias.*—If good plants are expected, every attention must be paid to these plants. Pot-on the earliest batches from time to time as they need more root room until placed in the pots in which they are intended to flower in. If these useful plants become root-bound or suffer in the least for root room in their early stages they soon become a prey to aphides, and seldom thrive satisfactorily afterwards. Seedlings should be transplanted from the seed pan into other pans directly they are large enough, and from these to small pots. A little more seed should be sown, and the pan or pot containing it placed in a cold frame. Shade these plants from strong sun, and give abundance of air to those established both day and night. Keep the material upon which these plants stand as moist as possible. Destroy aphides by fumigating.

*Lilium candidum.*—Plants that flowered early in pots have now commenced active growth, and if repotted now into larger pots they will throw up their flower stems and bloom profusely during winter. This is one of the easiest and most useful of Liliums for pot culture either for winter or early spring flowering. If bulbs are placed into 6-inch pots as soon as they can be obtained, arranged outside until autumn, and then housed in any cool structure, they will commence during the winter to produce their flower stems. If bulbs are lifted from outside for this purpose, it should be done directly they have flowered before the old flower stems have died down, for they do much more satisfactory than if left in the ground until they have produced a few leaves. This Lilium commences growth directly it has flowered.

## THE BEE-KEEPER.

### SEASONABLE NOTES ON BEES.

IN all mundane affairs, natural and artificial, "Unity is strength," and yet through generations the habit has held sway of dividing and sub-dividing bees. In its natural state the bee inhabits the hollow trunks of trees or holes in rocks, where, comparatively speaking, when taking such places into consideration with the small skeps in general use among cottagers, bees have unlimited space at their command; therefore in their normal state they would not divide and sub-divide their strength by constant swarming. The knowledge of the better system of bee-keeping is, without doubt, rapidly flooding the land, but there is still a remarkable propensity, more especially among cottage bee-keepers, to think that the acme of success consists in the number of swarms, casts, colts, &c, they can obtain in one season. If you ask a keeper of bees in this part of the country how the bees are doing, his invariable reply is, "Oh! capital; I had two skeps, and now I've got seven!" or, "Oh, they won't do nothing this year; I have not got a swarm yet."

It is well to allow each hive to give a prime swarm every year, and the swarm often proves much more profitable than its parent. But the stock hive gets a young queen and new vitality, and next season it is as powerful as ever; but when two or three swarms are taken from one hive none do well that year. Much time is lost by many bee-keepers, and often the whole profits of the season allowed to slip through their fingers, through their neglect to feed swarms. Some feed only when the weather is rough or showery after swarming time. It is well-expended capital which goes to purchase sugar for feeding all swarms. The free use of foundation and syrup soon puts a swarm on an equal footing with a stock hive. Day and night is employed in the building of combs, and that at a time when the honey season is fast gliding away. The cost of sugar and foundation is repaid with high interest when part of this precious honey season is gained, during which the bees can store in their new combs, and often give a number of well-filled sections to their owner. Late swarms put into a hive, whether skep or bar-frame, with nothing but guides to commence upon, seldom give any surplus honey. Sugar is



cheap, foundation easily obtained, and we would advise all to make free use of both.

A few words will here be in season respecting the exhibits in connection with bees and bee-keeping at the Health Exhibition. All those interested in honey and bees should not neglect to pay a visit to this department. The second turning to the right after entering the Exhibition at the main entrances in Exhibition Road brought us into the midst of a very good collection of appliances and products in the shape of honey, wax, &c. The first thing to attract attention is a capital model of a swarm of bees. It is so good that at a little distance it is like a real cluster suspended from a branch. There is a very fair display of honey, both in the comb and in bottles. The extracted honey is nicely put up, and we must hope that the public will learn to appreciate pure English honey, and to cease to countenance the importation of adulterated foreign stuff.

Messrs. Huntley & Palmer, the famous Reading firm, have lately brought out some exceedingly nice biscuits, called "Honey Drops." Visitors must not fail to taste them, and they will certainly appreciate this new biscuit. Immense quantities of honey are now purchased by this firm for the manufacture of this pleasant food, and this will help to provide a market for English produce. Honey is largely employed in other manufactures, and we should have liked to have seen more exhibits showing the utility of honey in foods and medicines, and so how it is conducive to health. Among the many interesting exhibits is one which, although in its present state most instructive, might be much enlarged and improved. We refer to Mr. Abbott's case of various natural objects explanatory of the science of bee-keeping. The various queens, workers, and drones are preserved and thrown together with the varieties of comb, queen-cells, &c. The depredators of the hive are shown in the shape of the wax moth and its grubs, and the damage done by these loathsome maggots is shown by a piece of comb tunnelled by the moth grubs and covered with their spider-like web. Much of the natural economy of the bee hive can be gathered by a careful inspection of this case. With this class of instructive exhibits must be connected the magic lantern slides shown by Mr. A. Watkins of Wilcroft, Hereford. These are most instructive, and some of them as amusing as they are interesting. The queen, worker, and drone are capital photographic slides, and vivid recollections of various cottage apiaries come to the mind when looking at the amusing picture of "All Dead but One." By the use of such slides a lecture on bee-keeping is made doubly interesting, and such illustrations enlarged on the sheet are highly appreciated. We have ourselves when lecturing on bee-keeping used such slides, copied from the appearances under the microscope, but these photographic slides are a great improvement on pen-and-ink sketches. We must not neglect to give the due meed of praise to those who, at much expenditure of time and trouble, have placed such good collections of bee furniture on the stages. Messrs. Neighbour, Abbott, Overton, Baldwin, and others have such good exhibits, that the various schools of bee-keepers must find sufficient to appease any amount of longing for what is good and substantial. Smokers, feeders, extractors, hives, supers, and a host of other necessities and luxuries are all there represented. Among the new hives we saw a square straw one, exhibited by Mr. Stonhill, price 7s. 6d. Of this we do not see the utility. If we are to have a hive without frames, it is far better to keep to the form the bees certainly themselves point out as the best—that is, the round-shaped skep. If we can have a good well-shaped bar-frame hive made of straw, this will be a great acquisition. In the hive exhibited there would be the same closed book system, the same difficulty of fixing the guide sheets, as with the old-fashioned skep, without its many advantages, and then the price, 7s. 6d., would be a high one to pay for such an article.—P. H. P.



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Books (W. D.).**—The "Rose Garden" is an illustrated and comprehensive work on the Rose. We do not remember the price, but it can be obtained from the author, Mr. William Paul, Waltham Cross, or his publishers, Messrs. Kent & Co., Paternoster Row, London.

**Showing Vegetables (P. H. W.).**—We should be guided entirely by the merits of the dishes. If both were in high-class condition the Mushrooms would probably have the greatest weight. We do not think the two Potatoes you name are identical.

**Grapes Splitting (J. C.).**—In all probability the variety to which you refer is Madresfield Court, the skin of which appears to be less elastic than others, and hence the berries crack. A sudden change from a moist to a dry atmosphere which is often, and, as we believe, erroneously, permitted when the Grapes commence colouring, has a tendency to cause them to split. Removing a considerable number of laterals at the same stage, which is also a common mistake, has the same effect. Allowing the border to get too dry, then watering heavily as if to compensate for the previous drought, often results disastrously. Again, light cropping has been found by some cultivators to result in the berries splitting more seriously than if the crop had been heavy, because the fewer the berries against which the pressure of sap is directed the greater is that pressure. We have pointed out some of the predisposing causes of Grapes splitting, and if after avoiding them your Vine is still unsatisfactory we should inarch another variety on it that is not prone to cracking. Some persons have found that cutting a notch in the lateral to check the flow of sap has a beneficial effect, others finding it of no advantage. You can try the plan if you like, it will do no harm.

**Ripe Grapes (J. G.).**—At no time should the border be allowed to get really dry, but water should be given occasionally to keep the roots and foliage fresh and healthy; nor should the atmosphere of the house be kept perfectly dry, as in such a case the Vines would be enervated in hot weather by excessive transpiration, and thrips or red spider almost certainly take possession of them. A fresh buoyant atmosphere should be maintained, but it should not be harsh and dry like that of a desert. We sprinkle the paths once or twice a day in very hot weather when the Grapes are ripe, and we also keep the border moist, but not always wet on the surface. On dull days no sprinkling is needed. It is impossible to lay down a hard-and-fast rule on this matter, as action must be governed by the weather; neither the border nor the house, however, must be kept "perfectly dry."

**Pear Tree Diseased (T. F. C.).**—Owing to the very hot weather the spray arrived very much withered. Can you oblige us with more specimens for further examination? In the meantime you cannot do better than scrape the affected parts and dress the wood, not the foliage, with a solution of softsoap and petroleum. Dissolve 2 ozs. of softsoap and a lump of soda as large as a walnut in a gallon of soft water, then well stir in a small wineglassful of petroleum and apply with a small brush, keeping the mixture constantly stirred during use. We have not been able to quite satisfy ourselves as to the species of the pest that is infesting the tree, and should like more specimens for investigation before you destroy them all.

**Oxalises (Oxalis).**—All the species mentioned and many more may be grown with ease in such a border as described by you, provided they can be kept a little dry during the season of rest, which is rather difficult unless some artificial means be resorted to, as they rest a time when we cannot always depend on dry weather. They require rich soil, and will be all the better for deep planting, say 6 inches, and as close to the wall as possible. Your failure may be attributed both to poor soil and shallow planting, with bulbs or tubers that are impatient of damp. It is a good plan to place a piece of slate 6 inches square and 6 inches deep slantingly, so as to give a good fall to the water or moisture, and place a few rough stones at the lowest edge. All the species mentioned along with O. Deppei, O. Grahami, O. Smithii, O. floribunda, O. corymbosa, O. Cervantesii, &c., we have had growing outside for some time with a fair amount of success. You may add a good mixture of sand to your soil, so as to lighten and insure quick drainage, a stagnant soil being the most unsuitable for this class of plants.

**Pruning Melons (M. T. C. B.).**—The growths may be thinned out from your overcrowded plants, proceeding, however, very cautiously, as if a large quantity is cut out at once the plants may receive such a check that the fruit will not swell freely. We once saw twenty lights of Melons quite spoiled by a young gardener who took charge of them, and cut out at once three or four barrowfuls of growths. If you prune your Melons slightly every evening when watering and closing the frames the growths will be sufficiently thin in a week for the fruits to swell freely, but if you were to complete the work at one operation you would probably do more harm than good. Woodwardia radicans is a native of Madeira, and is consequently not eligible for exhibition in a class for British Ferns. The insect you have sent is the destructive weevil Otiohynchus sulcatus. If you examine the plants at night with the aid of a lantern you will find that the best method of securing the insects. There is no quick and easy method of destroying them.

**Grapes Shank (Bucks).**—If all the leaves, or many of them, are like the one you have sent there is no wonder the Grapes have shanked, as the leaf is seriously scorched, and if this is a fair sample of their condition the Vines must have received a serious check at a critical period. The portion not injured, and that is very small, is extremely dark in colour, and conveys a suspicion that you have been over-feeding with liquid manure. It is just possible that you have applied too much liquid inside, and thus checked the free extension of the roots there, while outside, where the roots are amongst the Strawberries and Raspberries, they have been too dry, and two such checks would certainly result in shanking. Had you given more water outside and less in we think you would have done better. It is certain there is something radically wrong with the Vines. The too dry outside border has probably driven some strong roots deep down into



nert subsoil, where they cannot find what is needed for perfecting the cr p. The length of the footstalk of the leaf and its peculiar colour and texture indicate this, and we suspect also that the wood is long-jointed. Let the young canes have abundance of light and air, encourage by every possible means the extension of roots in the inside border, and when these are established lift the roots outside, shorten them, and place them in fresh soil. What your Vines need is a mass of fibres working in good soil as near the surface as possible, both outside the house and in. These provided and well fed, also otherwise good treatment given, you will have no more shanked Grapes. At present the root-action of your Vines is no doubt defective. We must inform you that although the leaves are large we do not consider the Vines are in a really healthy condition.

**Grapes Scalded (An Anxious One).**—Judging both by the appearance of the leaves and the fruit you have sent we think your vinery has been kept very moist at night and too long closed on some particular morning, then the lights thrown open suddenly to bring down the too high temperature. One of the leaves is scorched near the edge, and this we attribute to excessive evaporation and the consequent chill and shrinkage of the tissue. Precisely the same effect is shown by the fruit, and by the same cause. Open the ventilators very early indeed, and, if necessary, sprinkle the glass with white-wash to subdue the rays of the sun if excessively hot weather prevails. The system of management that has answered in other years has broken down during this hot summer, or there has been an accident of the nature indicated. We can only repeat, ventilate very early and eventually very freely; also, do not use so much moisture in the house, and especially late in the afternoon. The top ventilators ought to be left slightly open all night.

**Nectarines Shrivelling (W. H. D.).**—We shall not be surprised if your trees are infested with red spider or some other insects that are extracting the juices that should go to the sustenance of the fruit. If this is not so, then the root-action of the trees is defective or the nourishment in the borders inadequate for the requirements of the crop. The trees would in all probability be much improved if the roots were raised out of the inert soil in which they are probably ramifying, and placed in turfy loam 5 or 6 inches below the surface. A skilful gardener would do this as soon as the fruit was gathered, syringing and shading the trees to maintain the freshness of the leaves. In the absence of competent assistance it would be safer to defer this work till October. In the meantime examine the soil 18 inches or more below the surface, and if it is at all dry pour on water repeatedly till it passes quite through to the drains. A want of water may be the cause of the fruit shrivelling. Your letter is singularly devoid of data for enabling us to form an opinion of the actual condition of your trees.

**Names of Plants (Miss L. S.).**—The small Lily from which all the petals had fallen appears to be a pale variety of *Lilium Martagon*; the large flower is *L. umbellatum*. (D. Mackay).—1, *Deutzia scabra*; 2, *Calycanthus præcox*; 3, *Epimedium alpinum*; 4, a *Euphorbia*; 5, *Hemerocallis disticha*. (J. A., Gainsborough).—Your Orchid is *Stanhoepia tigrina major*—a very fine variety. (Reader).—The Lily is *Lilium Martagon album*, the other plant *Oxalis corniculata rubra*.

#### COVENT GARDEN MARKET.—JULY 9TH.

HEAVY supplies of soft fruit now reaching us, but prices are not good, Cherries alone maintaining fair value.

##### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. .. .	½ sieve	1 6 to 5 0	Oranges .. .. .	100	6 0 to 10 0
Cherries .. .. .	½ sieve	10 0 15 0	Peaches .. .. .	per doz.	4 0 12 0
Chestnuts .. .. .	bushel	0 0 0 0	Pears, kitchen ..	dozen	1 0 1 6
Currants, Red ..	½ sieve	4 0 5 0	„ dessert .. ..	dozen	1 0 5 0
„ Black .. .. .	½ sieve	4 6 6 0	Pine Apples English	lb.	2 0 5 0
Figs .. .. .	dozen	2 0 4 0	Raspberries .. ..	per lb.	0 3 0 4
Grapes .. .. .	lb.	2 0 5 0	Strawberries .. ..	lb.	0 2 0 9
Lemons .. .. .	case	15 0 21 0	St. Michael Pines ..	each	2 0 6 0

##### VEGETABLES

	s. d.	s. d.		s. d.	s. d.
Artichokes .. ..	dozen	2 0 to 4 0	Mushrooms .. ..	punct	0 0 to 1 6
Beans, Kidney ..	lb.	0 9 0 0	Mustard and Cress	punct	0 2 0 0
Beet, Red .. ..	dozen	1 0 2 0	Onions .. .. .	bushel	2 6 3 0
Broccoli .. .. .	bundle	0 9 1 0	Parsley .. .. .	dozen bunches	2 0 3 0
Brussels Sprouts ..	½ sieve	0 0 0 0	Parsnips .. .. .	dozen	1 0 2 0
Cabbage .. .. .	dozen	0 6 1 0	Potatoes .. .. .	cwt.	4 0 5 0
Capsicums .. ..	100	1 6 2 0	„ Kidney .. ..	cwt.	4 0 5 0
Carrots .. .. .	bunch	0 3 0 4	„ New .. .. .	cwt.	5 0 9 0
Cauliflowers .. ..	dozen	2 0 3 0	Rhubarb .. .. .	bundle	0 4 0 0
Celery .. .. .	bundle	1 6 2 0	Salsafy .. .. .	bundle	1 0 0 6
Coleworts .. ..	doz. bunches	2 0 4 0	Scorzonera .. ..	bundle	1 6 0 6
Cucumbers .. ..	each	0 3 0 6	Shallots .. .. .	lb.	0 3 0 6
Endive .. .. .	dozen	1 0 2 0	Spinach .. .. .	bushel	1 0 2 0
Herbs .. .. .	bunch	0 2 0 0	Tomatoes .. ..	lb.	0 0 0 9
Leeks .. .. .	bunch	0 3 0 4	Turnips .. .. .	bunch	0 3 0 0
Lettuce .. .. .	dozen	1 0 1 6	„ New .. .. .	bunch	1 0 0 0

in the Royal Agricultural Society's Journal, it will be necessary for us to make a few remarks as to their peculiarities as milkers and feeders. In so doing we will first quote a passage from the "Druid's" excellent article on Longhorns, wherein he records the following experiments:—"Mr. S. Craven Pilgrim, of Burbage near Hinckley, is a noted breeder of Shorthorns, which are of the Bates' blood, and which he cultivates for milking properties. Mr. Pilgrim selected his six best cows against a like number of Mr Chapman's [Longhorn]. The Shorthorns produced 152 lbs. of milk, and the Longhorns 135 lbs. The weight of eurd for the Longhorns was 19½ lbs., but that from the Shorthorns was only 14½ lbs. This experiment was made in June. The trial was again made in September—the whole of Mr. Pilgrim's cows, numbering thirty-six, against Mr. Chapman's thirty-two Longhorns. The Shorthorns produced 605 lbs. of milk, which only made 66½ lbs. of eurd. The Longhorns produced 553 lbs. of milk, which made 69 lbs. of eurd." These experiments give the milk-sellers' idea of value. Still it is well known and recognised amongst men of experience that when ripe they are really good butcher's beasts, and we have previously given instances that the breed was well known in Smithfield Market for affording the most valuable joints from the back and ribs, and to generally die with a large amount of internal fat. It has also been proved that they are capable of making first quality of "baby beef" at an early age, as evidenced by their having been reared and fed side by side with Shorthorns of the like age and from the best strains. We find that Mr. J. N. Fitt's concluding remarks in his essay are as follows:—"No breed could be found more suitable to adorn the park or the home pastures of hall or grange, for the long tapering horns, sometimes 8 feet in width, and tapering in spiral curves from the head, at others wreathed into the most picturesque and fantastic shapes; the true colour brindled red or fawn, with white backs, and the rough curly coats, must render them objects of admiration to all who have an eye for the beautiful, while their docile tempers peculiarly fit them for parks or much-frequented pastures. The Longhorn has endured a long eclipse, but now there seems every indication that he is about once more to emerge from obscurity and take his proper place amongst the magnificent breeds of cattle for which England is famous."

An appropriate sequel to Mr. J. N. Fitt's descriptive essay of the Longhorn cattle we find in a report by Mr. Joseph Darby on Longhorns exhibited in the same year (1876) at the R.A.S.E. meeting held at Birmingham, which states—"A leading feature was the large display of Longhorn cattle, which had never on any previous occasion presented anything like such an imposing muster. Very interesting and attractive they appeared with their long curling horns and handsomely marked colours. But however pleasing to look at, it is by no means certain that they are a sort desirable to own for grazing purposes. The handling of not a few in Aston Park was extremely indifferent, a thickness of hide responding to touch, but little understood by those whose experience lies among Shorthorn, Devon, and Hereford cattle. This was not so in the case of all—the Duke of Buckingham's animals, with the 'Conqueror' blood, in particular displaying much more softness and elasticity. No doubt the modern revival of this old-established breed will lead to a great improvement in this respect, for in these days of beef-making no sort of animals can be expected to extend themselves unless they possess thoroughly wealthy characteristics. The fact that more than sixty animals of the breed were brought together at Aston Park, and that they were from more than a dozen herds distributed all over the midland counties, and as far west as Somerset, shows that the revival movement has taken a good hold on the country. The old bull class had nine entries, with the Duke of Buckingham's 'Conqueror 3rd' to lead them. He seemed by far the best, and one of his sons, 'The Marquis,' conquered in the yearling bull class. Some of the other bulls were handsome and somewhat grandly shaped, but very few handled at all kindly. The cows looked milkers all over, and no doubt the good dairy properties of the breed, combined with great hardihood, is what recommends it so much in the midland counties. Mr. Forrest's 'Lady' and 'Bluebell,' both bred by Mr. J. H. Burberry of Kenilworth, were considered by the Judges the best specimens of the breed in the class, and certainly they were good-looking ones. In the three-year-old heifer class two daughters of the first-prize old bull from the Duke of Buckingham's herd, 'Lady Twycross' and 'Barmad,' took first and second prizes. They possessed the same kindly touch as their sire. The Longhorn and dairy cattle came to the same ring, and were judged by the same Judges, who state in their report: 'We found the classes well represented, especially the aged bulls; and the three-year-old heifers were very good. The dairy cows also were useful, and the young stock very promising.' Mr. Wells, the senior Steward, reports on Longhorns at the Royal Agricultural Society's meeting held at Kilburn in 1879: "It may be mentioned here that until quite within recent date Longhorns were not allotted separate classes at the Royal



#### THE LONGHORN BREED OF CATTLE.

(Continued from page 22.)

HAVING previously brought the history of Longhorns down to the year 1876, the year in which Mr. J. Nevill Fitt wrote his essay



shows, they simply competed in a mixed or miscellaneous class of 'crosses, or any other breed,' from which Shorthorns and the more favoured breeds were excluded. In 1862, however, at Battersea, separate classes were opened for this interesting old-established race, and the result was a display such as to convince even opponents of the breed that, far from becoming extinct, the 'curly-coats' were in the ascendant. Stimulated by their success at this, the first international gathering, and by the admiration bestowed on their exhibits by shrewd practical men, the leading breeders—to wit, His Grace the Duke of Buckingham and Chandos, and many others too numerous to mention—endeavoured, like the north-country wresler, to 'mend their hold,' and, having done this, they seem determined to keep it. At any rate it must be honestly admitted that Longhorns are extending themselves beyond their original home of Leicestershire, Warwickshire, Staffordshire, Derbyshire, and the adjacent counties; and it was plainly visible from the classes at Kilburn that in addition to the formation of a Longhorn herd-book, very great care indeed is now being bestowed on their cultivation. Great length of frame, deep ribs, well-covered backs and loins, heavy flesh, majestic carriage, and remarkable similarity are outwardly visible marks of the breed; while they enjoy a reputation for yielding, on poor herbage, a fair measure of milk, singularly rich in caseine (or cheese), and producing quite the average per-centage of butter; and when slaughtered they abound in lean flesh, and weigh well to their appearance." Report on live stock at Carlisle by Finlay Dun, 1880:—"Longhorns increase in number and popularity; a herd-book records their ancient descent; new breeders in other parts of the country are added to the ranks of their select midland counties supporters; separate classes are opened for them at many important shows; £130 offered in prizes at Carlisle called forth eighteen entries. Whilst cultivating early maturity, the economical manufacture of beef and show-yard honours, it is to be hoped that the milking capabilities of this old dairy sort will be preserved. For such purposes they are more likely to be of national value than in vainly competing more exclusively as beef-makers with Shorthorns, Herefords, and polled bree's. If they are to become a robust, hardy, milking breed the over-feeding of the heifers animadverted on by the Judges must be avoided. The most striking Longhorn was Major-General Sir Frederick Fitzwigram's 'Prince Victor,' one of the biggest and most imposing bulls at Carlisle, with capital carriage, back, loins, and hind-quarters. His half-brother, shown by Mr. Hall of Derby, was placed second; several of his progeny took prizes in the younger classes. Of the females the best-looking was the Duke of Buckingham's prize two-year-old, the massive symmetrical 'Lady Aston.'" Having made these numerous quotations from the reports of the Royal shows in several years down to 1880, we may in conclusion observe that except for its hardiness, and perhaps the making of certain kinds of cheese, the Longhorn is now so far surpassed by our more fashionable breeds; but yet no national show would be complete without some specimens of what was once the finest breed of cattle in England, and probably in the world.

#### WORK ON THE HOME FARM.

**Horse Labour.**—To be profitable this must be economised, both as to the number and power of the animals, and also through judicious management on the land, the mode of feeding, and general management in the stalls. The horses' health in the stables must be maintained by floors and stalls affording an easy bed, capable of absorbing all urine, which, with earth floors, will fix and deodorise all noxious vapours, and at the same time require less straw or peat moss for bedding, to be used only as cleanliness requires. The result, when properly managed, will lengthen the duration of life and labour of each animal (barring accidents) by three years. The mode of feeding never, either in winter or summer, should consist of dry food only. The animals should never be under 16½ hands high, stout in proportion, with clean legs and quick action. An odd horse or mule is indispensable to economy in use of the team horses. One great requirement of horse labour is following; but why are fallows on the generality of soils necessary? Simply because of the rotation of farming commonly carried out prevents the land being kept clean by hand labour only, which, in a close system of cropping, can be easily accomplished by forking out couch and other indigenous weeds. The cleanest farms we have ever seen, even on the mixed soils, have been kept so without ever making a fallow, which Sir J. B. Lawes very truly says suffer loss of fertility, and involve horse labour, which cannot be made effective in adverse seasons; but cleaning the land by hand labour is never hindered by any weather except a term of frost, the hand labour in results being effective and cheap, whereas horse labour in its results is very costly and uncertain. Horse labour, on the other hand, may be made effective by the use of the mowing and tedding machines, also by the use of horse rake and elevator for hay, corn, &c., and the reaping and tying machine proves the best substitute for insufficient and inefficient hand labour and absence of female workers, in which case Koldmoo's one-horse weed-eradicator is great economy. So it will be observed that horse labour used with proper implements saves manual labour, and *vice versa* when no fallows are required. At the same time practical farmers will be greatly benefited by the less time required to

carry out all the old operations formerly done by hand labour only; and commercially speaking, saving time by shortening the haying and harvest periods means reduction of costs and improved value of products saved.

Horse labour may now be employed in carting and laying out compost mixtures of earth and decayed vegetable substances of every kind, for we find that by laying it on the pastures as fast as the hay is cleared off it neither tracks or injures the pastures in any way, and is quite light carriage as compared with such work in the winter months, for soon after it is laid out it is chain-harrowed. In this way the earthy portions are spread on the soil, and the remains of decayed vegetation, such as couch and other weeds, are quickly drawn in by the worms. In this we are following a rule, which we have acted upon for many years, never to burn anything which will rot; for in the death and decay of all vegetable substances manure for future crops will be obtained. The same policy and advantages will be obtained by the lately revived system of green manuring. As soon as harvest commences and room is obtained for sowing green crop seeds, such as Turnips, winter Vetches, Giant Rye, Trifolium, &c., we have for the past forty years grown fine and abundant crops of Turnips, the seed being drilled every evening between the lines of sheaves of early white Oats and Wheat. Crops stolen, as we call it, in this way, are very valuable either for feeding sheep or for ploughing-in for Lent corn in the spring. In our close system of cropping with saleable produce we have for a long period kept the land clean. The constant succession of cropping on the three-course rotation not only prevents weeds and couch from obtaining any hold on the land, but also gives frequent and constant opportunities for the female workers to fork out couch and weeds at any time of the year, except in frost; and when near harvest the land is covered with abundant produce. These are a few of the commercial advantages enabling the home farmer to meet the depression of the times, and which, after so long practice on our own farms, we can recommend them to any farmer as one of the best ways of meeting the circumstances by which all cultivators are now surrounded more or less, and which seem likely to continue; for if corn is to be cheap we must grow cheap corn, which can only be done by large acreages of large and abundant crops of grain, for there is no possibility of sheep-farming being substituted for corn-farming, because sheep-fattening is not profitable for two especial reasons—that is, it renders expensive fallows and root-culture a necessity, and at the same time displaces and thus renders impossible the growth of full acreages and abundant crops of corn.

**Live Stock.**—The past winter and spring upon the whole has been favourable for dairy farming and the rearing of young horned cattle. It is in fact under ordinary circumstances the only way in which cattle can be made commercially advantageous, excepting cattle grazed and fattened on the best pastures without other feeding stuffs than grass and hay. The advantage of dairy cattle is that, unlike sheep, they displace no corn or pulse or rent-paying crops of any kind, and yet yield full profits and results either as milk, butter, cheese, or veal sold. Feeding bullocks for beef is seldom profitable under ordinary circumstances in which roots, cake, corn, and hay are used. We have often explained in this Journal that any advantage cannot be obtained except by the use of straw instead of hay in winter feeding, or otherwise by feeding with Clover and other green crops in the boxes during summer. Here, again, however, these are better than sheep, for they occupy no land either at seed time, or damage it by treading when feeding, for the roots having been stored the land can be immediately seeded for corn and rent-paying crops. In fact, if dairy farming is carried on upon the arable land it will pay as well as pasture. It may even be made more profitable if compared either with sheep fattening or cattle feeding for the butcher. Breeding and rearing of pigs does not prove profitable, except as a speciality of sort and type for sale. The fattening of pigs can be done by anybody; it is, therefore, not an actual farming requirement. The breeding and rearing of farm horses we have made to pay, especially when sold at two years of age, and never having been off the straw in yard or shed in divisions. In this way they are reared without blemish, and prove perfectly docile when carefully attended, the manure arising being an important point.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1884.  June and July.		Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.	On grass.	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday .....	29	30.011	63.2	59.0	N.E.	64.0	74.2	55.8	114.5	51.7	0.112
Monday .....	30	30.111	65.3	60.2	N.W.	62.9	77.6	51.2	120.4	46.0	—
Tuesday .....	1	30.216	68.0	61.8	S.E.	64.1	78.4	55.3	116.1	51.9	—
Wednesday ..	2	30.182	68.0	60.8	E.	64.3	79.7	52.7	117.6	48.4	—
Thursday ....	3	30.035	70.7	63.2	N.E.	65.0	82.9	52.3	106.8	48.8	—
Friday .....	4	29.922	75.1	66.6	E.	65.2	86.9	57.0	125.0	50.3	—
Saturday ....	5	29.936	69.6	63.6	E.	66.5	78.2	59.2	111.1	54.4	0.048
		30.059	68.6	62.2		64.6	79.7	54.8	115.9	50.2	0.160

#### REMARKS.

- 29th.—Sharp shower 9 to 10 A.M., increasingly dark till 0.15 P.M., then fine.  
 30th.—Very fine day; brilliant evening.  
 1st.—Dull morning; fine day and very calm.  
 2nd.—Morning very misty, afterwards fine and very calm.  
 3rd.—Almost foggy in the morning and dark, afterwards fine and hot.  
 4th.—Very fine and hot; the hottest day since July 15th, 1881; lightning from 11 P.M. till after midnight.  
 5th.—Cloudy, cooler, and slight rain in afternoon.  
 A very fine summer week, warmer than any week either in 1883 or 1882.—G. J. SYMONS.





17	TH	Carlisle (two days). Wirsoworth (Roses). Newport. Louth (two days).
18	F	
19	S	National Rose Society, Manchester.
20	SUN	6TH SUNDAY AFTER TRINITY.
21	M	[Carnation and Picotee Show.
22	TU	Royal Horticultural Society's Fruit and Floral Committees at 11 A.M.
23	W	Newcastle (three days). Feltham.

### FILMY FERNS.

**I**N the *Journal of Horticulture* of the 19th inst. there is an article headed "Notes on Kew," in which an account is given of a change which has taken place in the position of *Hymenophyllæ*. Thinking that it might be interesting to your readers to know the history of the Kew collection of this interesting family of Ferns, I submit the following.

In Hooker's and Baker's "Synopsis Filicum" 150 or more species are described. They have a wide geographical range, being found in most countries compatible to vegetable life, especially where moisture abounds; in rocky ravines and caverns; also on trees, some growing like Lichens and Mosses. Three are natives of Britain, two are recorded in Aiton's "Hortus Kewensis" as garden plants. In 1822 I found no evidence of their having been cultivated. This was, no doubt, consequent on their fugacious nature requiring special treatment. About the year 1842 one of these species, *Trichomanes brevisetum*—now known as *T. radicans*—became a subject of interest to amateur plant-cultivators, and several well-grown specimens under bellglasses were to be seen in the neighbourhood of London. At the same time a specimen raised under the same conditions was to be seen at Kew. It was not till 1844 that the first exotic species were received from Jamaica, forwarded by Mr. W. Purdie, then botanical collector for Kew. From this time the Kew collection gradually increased, and in 1864 the number of species had increased to thirty-six *Trichomanes* and twenty-six *Hymenophylla*, the names of which, synonyms, and native countries are recorded in "Ferns, British and Foreign."

With the early example of *Trichomanes radicans* it became evident that the species of *Hymenophylla* would not thrive under the ordinary conditions of pot cultivation as practised in the hothouses at Kew, the interior of the houses not being adapted for forming a small imitation rockery or other moisture-holding surfaces congenial to these plants. The Wardian case principle was therefore adopted, the cases being about 50 inches square, the framework of zinc, the sides and tops glazed, the latter moveable, and square shallow pans filled with suitable soil, in which the specimens were planted. The number of these cases gradually increased with the new species, and ultimately they numbered forty, arranged on the shelf on the north side of the Fern house, the roof above them being densely shaded. Under these conditions the plants flourished, filling the boxes. This mode of cultivation cannot, however, be considered otherwise than of an artificial character; but under the circumstances it was the best, as cultivation on a rockery or such-like moisture-retaining surfaces was not then practised either in hothouses or in the open air, all the rockery of the Aitons (of which there were about 100 loads of material) in the original Botanic Garden having been swept away. But a change of taste appears of late to have taken place, for within these few years a fine outdoor rockery has been formed, which my infirmities pre-

vent me from seeing. It is to be hoped that ere long we shall have a covered rockery for Ferns, epiphytal Aroids, Bromeliads, and similar plants. For the formation of such, some assistance may be obtained by consulting the article on natural cultivation in "Ferns, British and Foreign."—JOHN SMITH, *Ex-Curator*, Royal Gardens, Kew.

[In exquisite delicacy of form the Filmy Ferns surpass all their numerous relatives, and when growing with that freshness and freedom which so clearly indicate that their surroundings are satisfactory they are really gems. Who can fail to admire the slender hair-like *Trichomanes trichodeum* when its delicate fronds have each point terminating in a diamond-like dewdrop? or the translucent *Hymenophyllum hirsutum* or *H. ciliatum*, the fronds of which resemble some extremely thin membrane? and these are only examples of many others equally lovely. Beautiful as they all are, however, when in health, they have a correspondingly miserable appearance when their requirements are not carefully studied, and this perhaps is the reason that, except a few species, such as the Killarney Fern, the British *Hymenophyllum*, and *Todea superba*, they are seldom met with in gardens. It is true that some ardent amateurs like Dr. Cooper Foster have taken them in hand and formed good collections, with considerable satisfaction to themselves and their friends; but it is surprising that so few follow the example of the distinguished physician named above, who has made a careful study of these Ferns, and has, we believe, the largest amateur's collection in this country.

Nurserymen's collections include only the most generally grown species, though both Messrs. Veitch and Mr. B. S. Williams have many varieties; but to see Filmy Ferns in perfection we must go to the York Nurseries, where Messrs. Backhouse have an unrivalled collection as regards the number of species and varieties. In their cool, moist, shady houses, too, it is at once seen that these Ferns have what they need—an equable temperature, and an atmosphere saturated with moisture, under which conditions, being protected from droughts, the plants grow most luxuriantly without being imprisoned in Wardian cases. The fact is that to preserve the plants in health they must never be subjected to excessive heat, and any approach to that or dryness, either in the air or about their roots, must be most carefully guarded against. Their fronds are mostly extremely fragile, and the slightest injury results in a disfigurement which the best subsequent attention cannot remove until fresh fronds have been produced.

As with many other moisture-loving plants Filmy Ferns do not, however, thrive when water is permitted to stagnate around them. For this reason they appear to succeed the best when grown upon the stem of a Tree Fern, the base of which can be plunged either in fine spar or any other material that will keep it firmly in position, and yet permit the water to escape freely. It is also an advantage if the stems are tilted at a slight angle, as the Ferns can be seen to better advantage, and seem to extend better in this way. This system is principally useful for the dwarf species, as the taller and stronger forms, and the *Todeas*, succeed either in pots or beds of good peat.

Where only two or three specimens are grown the Wardian case is undoubtedly the most suitable, but for a larger collection the method now adopted at Kew, and recently described in this Journal, is much to be preferred. The moisture can then be regulated, and the larger cases, if kept closed, are not so readily affected by changes in the temperature—advantages of no mean importance. It might also be added as a hint to amateur cultivators that none of the more delicate species should have water applied direct to their fronds, as it usually results in decay or injury of some kind. The stronger forms are not so fastidious, but it is wise to exercise care in regard to all Filmy Ferns in this respect, and if the air is well charged with moisture that is far better than watering the fronds.



Mr. J. Smith's suggestion regarding a covered fernery or rockery at Kew is an excellent one, and it is surprising that something of the kind has not been constructed there ere this. It would undoubtedly furnish a great additional attraction, and would not occasion any very great expense, the only difficulty being perhaps to decide the precise form it should take. An ornamental so-called natural fernery, such as is seen occasionally in gentlemen's gardens, would probably be considered unsuitable in an establishment like Kew, but it would not be difficult to utilise it in regard to the special object of the garden.]

### THOUGHTS ON CURRENT TOPICS.

"GATHER ye Rose buds while ye may" appears to have been the motto of the Journal during the last fortnight, and this motto seems to have been acted on freely, for according to the reports of shows tens of thousands of blooms must have been "gathered" for the glorification of cultivators and the gratification of admirers at the exhibitions in question. Having had the privilege of seeing one great show, I think those who produced the magnificent blooms have good reason to be satisfied with their work, considering the extraordinary weather obstacles with which they had to contend at a critical period in the growth of the plants, and certainly they merited the honours they won and the commendations that have been so justly bestowed. We may and do admire to the full Daffodils, Auriculas, Carnations, and Orchids, but the Royal Rose is the queen of all.

AND as the head of the Roses, which of the many claimants for pre-eminence shall we place in that proud position? The Rose of which so much was heard last year and just a little this—Her Majesty—ought, I think, according to the fitness of things to occupy the throne. She was almost worshipped last July, but during the present season does not appear to have been at court at all. How is this? As a loyal subject I am disappointed. She has been sought for at the shows, and the reports have been scanned line by line, but no one appears to have seen her, and as to the chroniclers they "never mention her." Is she of a retiring disposition? Has she taken umbrage? Is she a late riser? Or is she reserving herself for the grand *finale* to come on the stage like a flash of light to retire amidst the plaudits of her courtiers? At any rate, let the reason of her absence be what it may, the cry has gone forth "Where is Her Majesty?"

CAN we place Alfred K. Williams on the giddy pinnacle? As a dark Rose I think this must now head the rich array. That other Alfred—Colomb—must stand aside; and hard as it may be to say it, so must the sweet and glowing Marie Baumann. There has been a battle over the gender of the first Alfred, but whether she is an emperor or he an empress must be left to the learned correspondents, Mr. Murphy and another "man of letters," who appears to require the head and tail of the alphabet arranged in sweet confusion to clearly express his identity. Let their researches result how they may, Alfred K. Williams must, for exhibition purposes at least, be regarded as the first dark Rose.

AND among the "lovely lights" shall the beautiful La France be dethroned? I think not, though she has powerful rivals in what looks like one of her children in Lady Mary Fitzwilliam; and a child of an older rival, La Baronne de Rothschild, to wit Merveille de Lyon. Of these two new Roses the former is shell-like—the essence of grace; the latter—well flatter, with a pallid white face. That is what I think of these stars of the season. They are acquisitions, will be largely grown and freely shown; but the reign of La France is not ended yet.

A CORRESPONDENT on page 2 says Roses like liquid manure, and he is right; but another remark on page 4 is eminently worth repeating. Were it not that I have heard that editors regard italicised sentences as an apology for weak arguments, I should ask that "A Kitchen Gardener's" remark be printed in italics. "Liquid manure," he says, "should never be used to force young plants into growth, or to make sickly plants healthy, as in nine cases out of ten it will have the opposite of the desired effect." With the one reservation that plants may be made sickly by poverty of soil and liquid manure may then assist them, I endorse emphatically the principle embodied in the sentence quoted. Liquid manure cannot be given beneficially to plants until they have become fairly established and extracted most of the virtues from the soil, and it can never be given safely

nor economically to any plants when the soil is quite dry. If dry, water them first well with pure water, then while the soil is still moist give liquid manure when a stimulant is needed. That is my thought on the subject in question, which is one of importance, and "A Kitchen Gardener's" maxim, for maxim it is, should be remembered by all, especially by very young men with very advanced notions, and inexperienced amateurs, who kill sickly plants when they think they are curing them with strong doses of liquid manure.

A "NEW DEPARTURE" in judging Melons has been recorded. Prizes have been awarded to the fruit in one case, and a certificate given in another, to Melons that have not been cut, consequently not tasted. This method of judging is occasionally adopted at local shows, but such guesswork at a Royal Horticultural Society's exhibition is, I venture to think, a step in the wrong direction. There are clever men in the world I know, and amongst the cleverest are the proverbially "clever gardeners;" but there is not one of them clever enough to determine with accuracy the relative merits of Melons without cutting them. I have grown a few hundreds, or thousands, of Melons in my time, won a few prizes and lost more, judged the fruit at some dozens of shows with colleagues of great experience, including some who boasted of their competency in judging without cutting; but on being put to the test they were wrong in their diagnoses nine times out of ten. In every important show when Melons are shown in classes the fruit should be cut, as there can be no certainty that justice will be done to exhibitors. When staged in collections including other kinds of fruit, the competition is seldom so close as to render this necessary.

I AM taking the topics at random to bestow on them a passing thought; only one or two others can be alluded to at present. I thought when I read the article on hot weather that the writer of it would feel himself a little out in his reckonings, at least if he had been with me—glad to find shelter from the drenching rain when the postman delivered the Journal last Thursday afternoon. It may not have been the same in all places. I thought, too, the picture of the drought a little overdrawn, until I saw a representation in an illustrated paper of a cricket match being played in the bed of the Thames at Twickenham, and luncheon being cooked on ground above which steamers habitually glide. That indicates a scarcity of water with a vengeance, and the advice about shading and watering, salt and dew, that did not fit in my case, might be useful to somebody, as it may be of service to me before the summer is over.

JUST one more thought—for I cannot get over it—about the conflicting paragraphs relative to the National Carnation Society. One week it is formally announced that a firm of solicitors were instructed by the "executive committee" to take legal proceedings; the week following we are told by the same authority that the "executive committee" did not give any instructions, but they were given by the "executive." The solicitors made a mistake. It is curious, and not the less so that the mistake was not discovered sooner; for instance, when the "circular" was being prepared for distribution. It is curious, too, that the Society has a committee and an "executive" as well; and it is still further singular, in fact unique, that a society so well officered with its committee and its "executive" should have no rules nor regulations. It seems, too, that the "executive" of this society and its committee have different views of things. The question then arises, Which is the controlling power? If the committee, of what use is the "executive?" if the "executive," of what use is the committee? Surely I think of all extraordinary organisations this is the most remarkable, and the anomaly is the more striking, as pertaining to a "national" society; but the greatest anomaly of all is the nameless "executive." By whom was this acting body appointed? I have been trying to think the matter out, but it is above my mental capacity.—A THINKER.

### STRAWBERRIES AND THEIR ENEMIES—MOLES.

I HAVE given the above heading, but perhaps I ought to change "their" into "our," for the birds, &c., are rather lovers of the Strawberry and enemies to us, in that they wish to eat what we desire for ourselves. This year has been a bad Strawberry year for me, for my soil being exceedingly light and gravelly, the plants have been nearly dried up, and had it not been for Forman's Excelsior I should have been without fruit. This variety I have found to succeed in my poor soil, and this year is bearing a heavy crop of fine well-flavoured fruit. The colour is hardly so good as might be wished, but the proof of the pudding is in the eating, and anyone who grows this Strawberry will not be disappointed.



Birds have been exceedingly troublesome, the blackbirds eating the fruit when quite hard and green, and the smaller birds being also greater depredators than usual. I hear that many blackbirds have been found in the woods round about dead for want of food. The drought has deprived them of slugs and worms, and this has caused them to attack the Strawberries and Cherries with quite unaccustomed boldness. After protecting a bed with netting I was surprised to find my fruit eaten. I also covered a few plants with a frame, and shut it up. Then also I found the fruit eaten, and marks of a mole. I never heard of a mole eating Strawberries before, so hardly knew whether to impute the robbery to our underground friend or not, but on calling on my neighbour, the gardener who was removing the netting from his Strawberry bed remarked that he could not keep the rats from his Strawberries. I asked him if he had any moles about, when on removing some of the litter he found the hole of a mole. This was conclusive evidence against Mr. Mole, so for the future Strawberry growers must protect their fruit from enemies above ground and below.—H. S. EASTY.

#### THE LATE MR. ALEXANDER HONEYMAN.

It will be remembered that the circumstances connected with the death of this estimable man were so distressing that they had only to be mentioned to evoke sympathetic aid. Mrs. Honeyman, acting on the advice of friends, having recently become settled, and with a fair prospect of procuring a comfortable livelihood, the time has arrived for me to return my earnest thanks to all who so generously assisted in this case. As in the great majority of letters a wish was expressed that no publicity should be given to the donors' names, I can only say that I have had the great pleasure of receiving for Mrs. Honeyman the sum of £144 5s. 4d., which amount is also recorded in the preface to the volume through which it was obtained. That what has been done was needed and is gratefully appreciated is sufficiently evident from the following letter from Mrs. Honeyman:—

"What can I say for all that has been done for me in this bitter trial? Words quite fail me to convey the gratitude I feel for the generous kindness of which I am the recipient. Helpless, almost penniless, far from home and friends, friends have been raised up for me everywhere, and help, such as I never dared to hope for, has been given bountifully. I can only try to merit what I have received by striving assiduously to bring up my children in a manner worthy of such a father as they have lost, and who called forth in such a remarkable manner the respect and aid of so many noble-minded and Christian-hearted people through the Journal which he loved, and to which and its Editors I shall ever feel profoundly indebted. The strongest words I can utter are feeble thanks, and only He who knows the secrets of all hearts can know the measure of my gratitude. The beautiful letters that have been sent will cheer me on, and will be treasured as the most prized of my possessions as long as I live. A widow's deepest thanks to all.—JANET HONEYMAN."

Mrs. Honeyman, it may be said, is now residing in Grangemouth, where she has good friends and advisers, and her frugality, prudence, and industry will, if she is vouchsafed the blessing of health, enable her with the start that has been given to carry out her cherished wish of supporting and educating her family, so that they may become industrious members of society. That was their father's wish. His books he divided amongst them, a certain number being reserved as a small library accessible to them all during their youth. The residue, placed at my disposal, have been sold, and the small proceeds added to the sum above mentioned. Helpers in this case have been very numerous, assistance having been sent from every county in England, from Ireland, Scotland, Wales, the Isle of Wight, the Isle of Man, France, Belgium, America, and Australia. To the toilers who have sent their shillings and the affluent who have sent their pounds my thanks are equally due, and are hereby gratefully recorded.—J. WRIGHT.

#### NICOTIANA AFFINIS.

It may not be generally known how easily this plant may be grown, and how fine it is for conservatory or greenhouse decoration in the summer and autumn months. It is also well adapted for culture in the open air during the same seasons, but the plants when exposed to the weather rarely produce such good results as when cultivated under glass. A rather serious drawback to the use of *Nicotiana affinis* for house decoration is that the flowers close for about eight hours in the daytime, usually opening again about 5 P.M. They are white, and when closed practically scentless; but as they open in the evening their agreeable perfume may be easily detected on entering the house. The plants grow from 2 to 3 feet high, and have a much finer appearance when arranged in small groups than when dotted about singly. If well grown a panicle with four or five branches will be produced on each plant, containing a dozen or more flowers in each, and if the plants are not tied beyond the point where the panicle branches the latter will depend gracefully with the weight of the flowers.

To obtain the best results the plants must be well treated in the early stages of growth, and not allowed to become starved. Those in flower with us for the past month or more, and are likely to remain attractive for a lengthened period, were sown in March. The seedlings of all the Tobaccos are very liable to damp off in the seed pans, consequently they should be carefully watched and pricked off as soon as large enough to handle. Grow them in heat and pot into 60's, transferring the plants again in due course into 32-sized pots, which are sufficiently large for any purpose. The soil should be rich and used broken up without sifting, as the stronger the plants become before showing the flower spikes the better. A situation in a house devoted to Fuchsias and similar plants will suit *Nicotianas* during the growing period, and they may be brought

on a few at a time or retarded as may be required. Few plants in flower withstand the heat of midsummer for so long a time as the one under notice. The only requirements when flowering are plenty of air and water and a light shading from bright sunshine. A small quantity of seed may be sown occasionally for a succession, but as the plants remain in flower so long it is not necessary to sow often.—J. G.

#### FOSTER'S PATENT ROSE-HOLDER.

IN the report of the Canterbury Rose Show in our issue of the 3rd inst. reference was made to the Rose-supports of Mr. C. Foster, instead of to Mr. R. Foster of Ashford, Kent. This extremely simple yet very efficient method of fixing Roses in tubes is shown in the engraving. The main wire, about the thickness of a knitting needle, is made to form three loops and a spring, the two former for supporting the



Fig. 8.—Foster's Rose-holder.

Rose, the latter for pressing against the side of the tube and holding the bloom of any required height. The name "holder" is fixed to the tube. The patentee describes this Rose exhibitor's aid as follows:—"The Rose-holders or supports are made so that the Rose with its name may be moved together. To put the Rose in, first put the top loop of the wire round the neck of the Rose; then put the stem in the loop in the middle or by the side; then put altogether in the inner tube, far enough for the lower end of the wire to come just below the tube. The Rose can then be set to the name by turning the lower end of the wire round to the right position. It can then be set the height required. The small wire can be used, if wanted, by just putting either end once round, which will hold the Rose quite firm."

We have only to add that we consider this the best appliance for the



purpose in question that has come under our notice, and it will doubtless be used by many exhibitors of the Rose.

### MELONS CANKERING.

THERE is no doubt that cankering is caused through insufficient air being given and looseness of soil. A great point in Melon culture is to make the soil as firm as possible over the whole surface, whether in a house or frame, and the soil should be of a very strong texture of fibry loam with a little sharp sand or old mortar rubbish added. The plants when turned out must not be planted deeply, but the collar should be quite above the surface. The bed should be covered with rough shingle or gravel, which prevents evaporation and the necessity for frequent waterings; it also keeps the fruit clean if in frames. I have found with this practice that water can be withheld three weeks at least before the fruit is fit for use, consequently there is no splitting. The fruit also is much better flavoured than when too much water is used.—J. PITHERS, *Summerhill*.



IN consequence of the great pressure on our space by reports of shows the publication of the INDEX to the volume of this Journal, ending June 30th, has been unavoidably postponed until the present issue.

— THE CRYSTAL PALACE ROSE SHOW.—A little correction is needed in our report of this Show, our reporter in transcribing his notes having accidentally inserted the names of some Hybrid Perpetuals in the first prize for twelve Teas, three blooms of each, which was won by Rev. F. Page Roberts with a superior stand.

— WE are informed that the CARNATIONS and PICOTEEs in the Royal Nurseries, Slough, are in splendid condition, and that Mr. Charles Turner invites an inspection of the flowers. The collection consists of about 8000 plants, which will remain in great beauty till the end of the month.

— DR. PATERSON, Fernfield, Bridge of Allan, N.B., sends us a flower of a handsome variety of ODONTOGLOSSUM ALEXANDRÆ. It exceeded 4 inches in diameter, the petals and sepals well proportioned, but not quite so broad as they are sometimes seen in smaller flowers. A remarkable example of a "Hen and Chickens" Marigold was also sent by the same correspondent, in which a number of smaller flower-heads were produced around the central one, like the peculiarly formed Daisy which bears the title given above. This is rarely seen, and we shall refer to it again in another issue.

— "A. O. W." writes that a HEAVY THUNDERSTORM passed over the neighbourhood of Biggleswade on the 9th inst. The lightning was unusually vivid, the peals of thunder very loud, and almost continuous for three or four hours. The rain came down in torrents. In a short space of time upwards of 1½ inch fell, and the total rainfall during the week ending July 12th was nearly 2½ inches. Most kinds of crops had suffered much from the intense heat and long drought of June and beginning of July, but now root crops are rapidly improving. A good deal of Turnip seed has been cut in the district, and bright and dry weather is now anxiously looked for to harvest it in good condition. A good breadth of Wheat and Barley is badly laid through the heavy downpour.

— WE regret to learn of the death of MR. EWING of Golden Grove, Chester, and for nearly twenty years gardener at Bodorgan. He had retired from the superintendence of Bodorgan Gardens for nearly twenty years, and had since lived at Chester, where he took an active part in all matters likely to benefit the town. He was for some time Chairman of the Hoole Local Board, and was one of the first churchwardens of All Saints' Church, in the building of which he interested himself so much. He was also one of the Ragged School Committee, and one of the River Dee Commissioners. We understand it was entirely through Mr. Ewing's influence that Lord Kilmorey gave the ground for building the new vicarage of Christ Church, Chester. In his sermon at All Saints', on Sunday, the Rev. F. Anderson, in the course of a feeling allusion which he made to the subject, said that "Not only was the deceased gentleman

one of their first churchwardens, which office he held for five years, but that he was mainly instrumental in raising a sum of £800 to clear the church from debt." At the age of 67 he has passed away, up to the time of this attack apparently in full possession of the health and vigour which he had enjoyed during the whole of his life. We understand that the cause of death was failure of the heart's action. While at Bodorgan he proved himself to be one of the most intelligent, shrewd, and successful of gardeners.

— A HOSPITAL FETE AT THE HEALTH EXHIBITION.—With the object of increasing the funds of the London hospitals, the Executive Council of the International Health Exhibition, at the instigation of the Prince of Wales, their President, have decided to hold a grand evening *fête* on Wednesday, the 23rd inst., the proceeds arising from which will be handed to the Lord Mayor, to be distributed among the various metropolitan hospitals by the organisations of the Saturday and Sunday Hospital funds. This *fête* will be under the special patronage of their Royal Highnesses the Prince and Princess of Wales, who have announced their intention to be present. The wishes of their Royal Highnesses, to whom the initiative of the fund is due, have been readily acceded to by a large number of exhibitors, many of whom have consented to place their stalls and refreshments at the service of the fund. Presents, to consist of fruit and flowers only, to be sold by ladies in aid of the fund, will be gratefully accepted, and should be sent in so as to be received on the morning of the 23rd. The Council believe that they have only to make this known to secure such presents from the large class who take a special interest in one of the most popular and useful of charities. All consignments of this nature should be addressed to the Marquis of Hamilton, Chairman of the Hospital Fête Committee, International Health Exhibition, South Kensington. The grounds will be illuminated by 20,000 variegated lamps, and special effects will be introduced in connection with the illuminated fountains. The doors will be open at 7.30, thus enabling visitors to dine at the Exhibition. The *fête* will commence at eight o'clock. Evening dress will be worn. The ordinary admission will be suspended at 5.30 p.m., and the Exhibition will be closed at 6 p.m. A special rate of 10s. will be charged for admission to the *fête*.

— ROSES AT DISS.—At the recent Show of the Diss Horticultural Society's Roses were a special feature of the Exhibition, the prizes offered by the Society being of greater value than those awarded at the county shows. The liberality of the Committee was supplemented by valuable gifts from several members, the most substantial being a silver cup of the value of ten guineas presented by Francis Taylor, Esq., to the exhibitor who twice wins the first prize for thirty-six Roses. Miss Taylor gave the first prize for twenty-four Roses, and the Rev. H. T. Frere (Burstons), the prizes for the best Hybrid Perpetual and Tea in any collection. Mr. B. R. Cant, Colchester, and Messrs. Paul & Son, Cheshunt, also gave special prizes for excellence in this department. Altogether the show of Roses was a grand display, despite the unfavourable season, and would have done credit to a much larger and more influential society. The greatest interest in the competition was centred in Class 1, especially when it became known that the Rev. H. A. Berners of Harkstead Rectory, Ipswich, who won the silver challenge cup for the first time last year, was again a competitor. Owing to the large number of Roses to be shown in this class there were only three exhibitions; such was the special merit of each that the Judges had considerable hesitation in making their award, and it was only after the most minute examination and careful comparison of each bloom that they could arrive at a decision, the result of which was that the Rev. H. A. Berners was again awarded the first prize, and having won it twice, the cup now becomes his absolute property. A splendid collection of thirty-six Roses from Drinkstone Park, which apparently were not inferior to Mr. Berners' show, secured the second prize to Mr. Palmer, and the third was given for a choice lot from Burstons Rectory. There were more entries and greater competition in the other classes, and for the best collection of twenty-four the Judges were compelled to give equal firsts for those exhibited by the Rev. J. Foster-Melliar, Tostock, and the Rev. C. J. Fellowes, Beighton, the third prize going to the Rev. P. H. Davis, Hingham, who made a most effective display. The best exhibition of the queen of English flowers was that of the Rev. F. Page Roberts in the class for twelve Teas or Noisettes, in which he secured the first prize; this collection included a beautiful specimen of Alba Rosea, and was simply superb. With blooms of this quality it is no marvel that the indefatigable Hon. Secretary of the Society is so successful at the large shows, excelling, as he has done during the past week, many noted growers at the Crystal Palace Exhibition. Near this collection was



a magnificent piece of plate which the rev. gentleman has this year taken as first prize for eighteen Teas or Noisettes at a competition at South Kensington.

— ON Wednesday Mr. T. S. Ware, Tottenham, had an unusually beautiful display of HARDY FLOWERS AT KENSINGTON, one of the most effective selections of the season. Carnations, Japan Irises, Pentstemons, Lilies, and numbers of other flowers were represented in the best condition.

#### ROOT-BOUND CHRYSANTHEMUMS.

WHEN I scanned the Journal of July 10th, and came to the note from Mr. Murphy on Chrysanthemums in 10-inch pots being root-bound at this early period, I could not help thinking how gardeners differ. There is very obviously a serious mistake somewhere in this case, and it is very apparent to me that these plants have been treated "not wisely but too well." Our stock is yet in 4-inch pots; too late in these I admit, but circumstances have prevented us from getting them transferred into their flowering pots at an earlier date. As a rule, however, I do not repot them earlier than the end of June; even now I should be inclined to back ours against those in 10-inch pots which are root-bound. The plants in question must have been kept growing too freely in spring, and in addition they have been treated to an open rich soil and not potted firmly. My experience with Chrysanthemums is this, that the cooler they are kept in spring the better; that the most suitable soil is that in which Wheat delights, the only manure required being some cow manure; that it is impossible to pot too firmly, and if once the roots begin growing a simple manure like guano is very beneficial. We only pot twice—once from the cutting pot into 4-inch pots, this in April, and again in the end of June into the flowering pots; and I am speaking from experience when I say that the conclusion Mr. Murphy arrives at has resulted from a system of treatment unsuited to Chrysanthemums and to many other decorative plants.—R. P. B.

#### BURGHLEY PET MELON.

MR. GILBERT, of Burghley, sent me some seed of this variety for trial, but, having no house, I handed a few seeds to a very able gardener, Mr. Pitcher, of Crix Park, Hatfield Peveril, who on the 9th took first prize with a fruit at the Chelmsford and Essex Show. After the Judges had done their duty I also tried it, and found it to be the most delicious and melting fruit I ever tasted. The skin was very thin, and the Melon most handsome in appearance. Mr. Pitcher stated that he considered it to be about the best Melon he ever grew, which is saying a great deal.—H. S. EASTY.

#### CATTLEYAS AT SOUTHPORT.

So large has the number of cultivated Orchids in England become in recent years that many amateur growers have gradually commenced to make specialities of particular genera, as the idea of forming a complete collection is now almost impracticable. At one time it was not a difficult matter to accommodate all the Orchids that had been brought from their native wilds to European gardens in a small house; now large houses are devoted to single genera, which even then are perhaps not half represented. There is thus what might be called a division of labour. One orchidist may have an especial liking for Masdevallias, another for Odontoglossums, a third for Dendrobiums, and a fourth for Cattleyas, and while each may have a large general collection he will pay special attention to his particular favourites. This is a double advantage; it brings a larger number of species and varieties into cultivation than would otherwise be the case, and by closer attention to the requirements of the plants which are most in favour the best modes of ensuring their success are observed, practised, and communicated to the Orchid-growing world generally. If, too, in addition to growing the plants to the best advantage the Orchid specialist turns his attention to hybridising, still more satisfactory results may be produced, and some valuable forms placed in the horticulturist's hands. Of such work an example was furnished by Mr. Robert Warner of Chelmsford, who has materially assisted in swelling the ranks of hybrid Cypripediums, while he has also given an example of special culture in the magnificent Odontoglossums, particularly *O. Alexandræ*, which have been grown and flowered at Broomfield. Mr. Philbrick of Bickley, and Mr. Bockett of Stamford Hill, have proved what can be done with Phalenopses. Mr. Peacock has also given much attention to Odontoglossums, while Mr. Lee of Leatherhead and Mr. R. P. Percival of Southport have rendered their names famous in the Orchid world for their grand collections of Cattleyas. Mr. Lee's collection is familiar to all in the south of England, but Southport is a little out of the beaten track, and comparatively few find their way there unless called to the north on business or pleasure. "Whenever you are in Manchester by all means go and see Mr. Percival's Cattleyas," was the advice given by an excellent judge of Orchid merit (Mr. Harry Williams), and after

having one's interest still further aroused by the wonderful specimens which carried off the honours at the Whitsuntide Show, there seemed to be but one course open, and that was to Southport.

Cleavelands, Mr. Percival's residence, is a short walk from the station, past the Winter Garden, within a few hundred yards of the sea, and quite unprotected in that direction. The west and south-west winds are very severe at several periods during the year, and notwithstanding that various hardy trees have been tried to break their force they have all in the most exposed portions succumbed to the salt-laden gales. Under such circumstances it would scarcely be expected to find plants of any kind in unusually good condition, and it is therefore the more surprising to the visitor who enters the well-built light and spacious houses, and sees Orchids, the reputedly difficult plants for cultivators, growing with a vigour that could scarcely be surpassed in their native homes. It has been my good fortune to see the majority of the finest collections of Orchids in this country, but I have never seen so large a stock of Cattleyas in such perfect health and so remarkably strong. All the numerous occupants of the houses are well grown, but the Cattleyas are the feature. They are simply superb—the leaves broad, clean, and leather-like in substance; the flowers of unusual size and rich in colour.

The house devoted to the Cattleyas with a few other plants is span-roofed, with a centre and two side stages, 100 feet long and 20 wide, in four divisions. *C. Trianae* is largely represented, one division being almost filled with plants of that species in several varieties, and when these are in flower the display must be grand in the extreme. Eight hundred blooms open at one time, in all the variety and richness of colour of this fine Orchid, must present a sight that could scarcely be rivalled in any private collection. The variable but beautiful *C. Percivaliana* is also grown in abundance, some of the best varieties that have yet been obtained, and the largest specimens in cultivation, one grand mass, 3 feet long by 2½ feet wide, being particularly noteworthy. The merit of this species is only just becoming known, as unfortunately the plants which first flowered were mostly of rather indifferent varieties; in its better forms it is, however, very handsome, the lip being marked with a peculiarly rich shade of crimson, quite distinct from any other Cattleya. The white variety is also a charming Orchid, and an extremely pretty companion to the ordinary type. The old but lovely Cattleya Skinneri is another favourite at Cleavelands, and well does it merit the attention it receives, for the charming rosy-tinted flowers are produced in most liberal profusion and have a grand effect. The Veitch Memorial medal was awarded for a handsome plant of this species at the Regent's Park Show this summer, but had one of Mr. Percival's specimens been there it would have had a most formidable rival. It was not, however, quite forward enough for the London Show, and at the time of my visit was in its best condition, with 360 magnificent flowers, or over fifty growths, the plant exceeding 4 feet in diameter. Such a specimen in perfect health would amply merit any honorary award. The chaste white variety is similarly well grown, though of course it is represented by smaller plants.

Cattleya Mossiæ, as might be expected, constitutes an attraction of great importance in the Cattleya house; dozens of varieties are included of the most varied shades. It is surprising what a number of distinct forms of this Orchid there are. Many have been honoured with names, but in a collection like that at Southport it would be almost impossible, and certainly unnecessary, to name them. The sepals and petals differ considerably, ranging from the palest blush to bright rosy crimson, while the lip is similarly varied, especially in the veining, some being netted with the richest gold. The flowers, too, are of great size, some reaching a diameter of 9 inches, with four or five in a spike, and their condition generally indicates the most skilful culture. The useful *C. Mendeli* and *C. aurea* are grown in similar numbers and with equal success, the latter in baskets having a most satisfactory appearance.

One of the most magnificent of these aristocrats of the Orchid family is undoubtedly the superb *C. gigas*, and its best of forms *Sanderiana*. No other Cattleya can surpass or even equal these in size of flower and richness of colour, and when grown as they are at Cleavelands their claims to high rank must be at once admitted. *C. Sanderiana* in particular, which is far superior to the ordinary forms of *C. gigas*, is a superb Orchid, and the specimen, of which an engraving is given in fig. 9, is probably the finest in cultivation. This plant was at the time of my visit placed in a little annexe to the large house, and its appearance was grand in the extreme. It had eighteen flowers, each 9 inches in diameter, the lip 3 inches across, and the colour was of the brightest rosy crimson colour imaginable, extending deep into



the throat. It had an almost dazzling effect in the bright noon-day light, and viewed from a few yards distance it seemed a mass of colour. An idea may be gained of the finely proportioned lip and the general contour of the flower from that represented of its full size in fig. 10, page 57. It is beyond all question a grand Orchid, and well merits all that has been recently said in its favour.

The principal features of the collection of Cattleyas have been briefly pointed out, and reference to the other portion of the plants must be reserved for the present. It may, however, be added that Mr. Percival's object has been throughout, with the aid of his gardener Mr. Beddoes, to simplify as much as possible the culture of Orchids. He was not content to take a

that abundance of water, liberal ventilation, a thorough ripening by exposure to the sun, and a well-defined period of rest without resort to the excessive drying system, are the chief points to ensure success, and the adoption of the practice has proved the correctness of his ideas in the astonishing vigorous growth and free flowering of the plants subjected to it.—LEWIS CASTLE.

#### A VISIT TO BELGIUM.

MR. VAN HOUTTE'S NURSERY.

AS stated in my last paper the glass department in this nursery is very extensive. The first house I entered was one of a series recently erected for Orchid-growing. This is a large span-roofed structure, and is built



Fig. 9.—MR. PERCIVAL'S CATTLEYA SANDERIANA.

series of stereotyped rules as to temperatures and other matters, but sought to ascertain for himself what are the particular requirements of each genus or species. To aid in this he has with great labour and research obtained in every possible case the precise conditions under which the plants flourish in their native habitats, and this has in many cases furnished him with clues to the culture of species that have been found rather difficult to grow satisfactorily, and which he has employed to the best advantage. It is regrettable that collectors as a rule supply so few particulars to assist cultivators, and in this respect the trade collectors of the present day are far less useful than those of twenty or thirty years ago, though many facts might be given of inestimable value that could not afford their rivals any assistance. With regard to Cattleyas Mr. Percival considers

without side-lights, somewhat similarly to the way Pine and Melon pits are built in England. There are side and middle stages, and these as near to the glass as possible, so as to give the plants the full benefit of light and air. M. Van Eechaute, the experienced manager, has adopted a very novel but rational method of ventilating the lower portion of the roof. The squares in the lowest row of glass are not "bedded in" putty, but work in grooves, and can be taken out or will slide down at will; thus air can be admitted to such individual plants as require plenty without injury to those that do not require so much.

M. Van Eechaute does not believe in high and close temperatures for growing Orchids. Abundance of air when the external temperature is high is his practice, and using as little fire heat as possible. The plants certainly testify to the soundness of his practice, for healthier or more robust examples we have never seen. There are some large specimens of choice Cattleyas in this house, many of which were in flower at the time



of my visit. Masdevallias were in splendid condition, as were also Oncidiums, Dendrobiums, Epidendrums, Dendrochilums, Cypripediums, and Phalaenopsids. The collection of Aerides, Vandas, and Saccolabiums were in the best possible condition in another house, and the cool Orchids such as Odontoglossums seemed equally at home in their quarters.

A large house is devoted to growing the deservedly popular class of Tuberous Begonias, in which over 50,000 seedlings were coming into flower. Next we come to a large house of curvilinear form, in which are growing in pots many thousands of healthy young Camellias fresh from the propagating house. These are being hardened off preparatory to being placed out of doors. It is surprising how quickly young Camellias are grown into handsome plants. The Belgian leaf mould is undoubtedly the grand secret of success with these and the Azaleas, as indeed with all other stove and greenhouse plants; indeed this is the only suitable kind of soil at command in Belgium for plant-growing purposes. M. Van Eechaute informed me that such soils as peat and loam, also silver sand, have to be procured from England. As might be expected, these are but seldom used on account of the great cost involved.

Returning to the houses we enter the large Palm stove. The most striking for size and beauty of the "Princely Palms" were *Kentia Lindenii*, *Cocos Michauxiana*, *Plectocoma elongata*, *Kentia Wendlandii*, *Carludovica macropoda*, *Livistona Jenkinsiana* (a very fine specimen), *Licuala (Pritchardia) grandis*, and others too numerous to mention in these notes. Another large stove is full of fine specimen plants, among which the following are fine examples:—*Fourcroya Lindenii*, a very large handsome plant; *Pandanus ornatus* and *Pancheri*, *Alocasia Van Houttei*, a magnificent plant, with large beautiful deep green leaves. Some idea of its beauty and rarity may be understood when we state that its lowest selling price is 100 guineas. There are a number of other stoves for producing plants in tens of thousands for trade purposes. Houses are devoted solely to the cultivation of such plants as the *Amaryllises* and *Imantophyllums*, of which there are splendid collections. Herbaceous *Calceolarias* are also grown to an enormous extent from seed. *Gloxinias* are also grown by hundreds of thousands. Advantage is taken of the greenhouses after their occupants are turned out of doors for the summer by covering the stages with leaf soil to the depth of 6 inches, and in this the young seedling *Gloxinias* are planted out. When in flower the finest types are selected for saving seed, and all those of inferior merit have their flowers removed. M. Van Houtte does a large trade in this class of plants. Such popular plants as *Pelargoniums* (Fancy and Zonal), *Fuchsias*, *Hydrangeas*, &c., are grown in enormous quantity. A large area of span-roof houses are devoted to the production of stove and greenhouse plants in quantity.

In these nurseries all the greenhouse plants are turned out of doors early in May, and arranged in order on beds of ashes. Such plants as *Metrosideros*, *Boronia*, *Pimeleas*, *Genetyllis*, *Polygalas*, *Cytisus*, *Coprosmas*, &c., were making sturdy growth, which will have an excellent opportunity of becoming thoroughly ripened. It is the practice of Belgian gardeners to prune hardwooded greenhouse plants in closely after flowering, and thus encourage fine sturdy growth and handsomely shaped plants. Not only are greenhouse plants turned out of doors, but also a great number of the hardier Palms. A large area, shaded by Poplar trees, is occupied with *Lapagerias*, *Camellias*, and *Azaleas* in pots. The *Azaleas*, for which the Belgian gardens are celebrated, are grown on a large scale; but few (except large or choice specimens) are retained in pots throughout the summer, the majority being planted out in spring in prepared beds of leaf mould, and lifted and potted in the autumn. Tens of thousands of these are grown and sold every year to purchasers in all parts of Europe. The mean temperature of Belgium is not much in excess of our own climate. Hence I do not see why we should not adopt the Belgian method of growing our *Azaleas* by planting out and lifting annually. It might be safely done in the south of England, and even 100 miles south of London we should imagine. At any rate the plan is well worthy of a trial. Heaths they cannot grow in Belgian soil, hence have to depend upon their supply of this class of plants from England.

In taking leave of the glass department I must not overlook their principle of shading the various houses. The material used for this purpose consists of lath blinds—that is, laths an inch or so wide and a quarter of an inch deep; these are connected together at distances of half an inch apart by means of small waterproof cord. The laths are made in lengths of, I believe, about 12 feet, and are rolled up and down the roof similarly to the way in which we do our blinds in England. These blinds are very durable, M. Van Eechaute telling me that they generally last twenty years in good condition. These lath blinds serve a twofold object. In Belgium they are subject to heavy hailstorms, which would commit serious havoc with the glass were it not that the blinds were let down. In the second place they answer admirably for shading the plants in hot weather, the spaces between the laths admitting more light than would be obtained by means of tiffany. Many will perhaps think that the spaces (half-inch) between the laths would admit too much of the scorching rays of the sun, and thus injure the plants. But this is not so, as owing to the slope of the roof it is impossible for the rays to descend vertically. On the contrary, the direct force of the ray is broken by contact with the edges of the laths, thus intercepting its scorching power and creating a shadow.

The outdoor departments embrace the cultivation of bulbs, herbaceous plants, evergreens, fruit trees, &c., on a large scale. The various quarters are divided by charming hedges of *Pyracantha* and *Hornbeam*. The branches of the latter are grafted together by approach when young. It

is a pity these hedges are not more generally adopted in England. The bulb farm is very interesting, thousands of bulbs of the grand *Lilium giganteum* were growing vigorously in beds of sandy soil. Acres of *Hyacinths* were just going out of bloom, also of *Tulips*, *Narcissus*, *Crocus*, *Jonquils*, and other bulbs. Then one comes upon vast tracts of *Irises*, which were in full flower, *Azalea mollis*, and *Rhododendrons* of every conceivable colour. Evergreens and deciduous shrubs are grown to a great extent, as are also fruit trees and *Roses*. The fruit crops there, as here, had suffered very much from the late spring frosts.

Before closing my notes on these vast nurseries, which, to inspect properly, would be a task of many days instead of one, as in my case, I must not omit to mention the hearty reception I received from the accomplished Mademoiselle Marie Van Houtte, who in the absence of her brother very kindly invited me to partake of my first and excellent Belgian dinner. M. Louis Van Houtte I saw later in the day, and enjoyed a pleasant converse with him on English gardening. My brief visit to their celebrated nursery was a pleasant one, and my best thanks are tendered to all.

#### M. LINDEN'S NURSERY.

The next day I paid a visit to M. Linden's (now known as the *Compagnie Continentale d'Horticulture*) celebrated nurseries. The visitor can either reach it by tram or cab; if a stranger to town and language I would recommend the latter. I fortunately had the advantage of a guide in the person of a very intelligent young Dutchman, M. Moll, who could speak several languages—French and English included, and whose services were kindly given me by M. Van Houtte, his employer. I had a letter of introduction to M. Linden, and had the pleasure of being conducted over this famous establishment for new and rare plants by Mr. Neuberry, an English member of M. Linden's staff. The plants in this establishment consist of some of the finest to be seen. In a large octagon house is one of the finest specimens of *Kentia rupicola*—a rare and beautiful Palm—in Europe. Some idea of its size may be gained when I state that the plant is nearly 16 feet high from the top of the tub in which it is growing, and the spread of its leaves considerably more in diameter. It is one of the most graceful of the *Kentia* family, and is justly prized. In the plant stoves, which are numerous, are many very strikingly beautiful new and rare plants, among which the following deserve notice:—*Friesia heliconioides*, a most graceful *Bromeliad*, with metallic purple leaves and carmine and white bracts; *Croton Osteeryeci* (rather a barbaric name for so pretty a plant), with long deep green leaves, spotted with yellow; *Dieffenbachia magnifica*, a beautiful species, with bright green leaves, diffused with white; *Dracaena madagascarensis*, a free-growing species; *Aglaonema pictum*, a charmingly variegated Aroid; *Alocasia Putzeysii*, with exquisitely marked foliage; *Heliconia triumphans*, *Dracaena Lindenii*, and others. These are only a small moiety of the grand collections to be found in this establishment. Several houses are devoted to Palms, thousands of young seedlings being planted out in prepared beds, in which they are grown rapidly for sale. New and rare Palms in pots were represented in such beautiful species as *Calamus Lindenii*, a graceful form, sent out by Mr. Linden last spring; *Calamus Kentiaeformis*, another new Palm somewhat similar in habit to *K. Fosteriana*; *K. Luciana*, *K. divaricata*, *K. robusta*, and *Licuala (Pritchardia) grandis*. The large Palm stove contains giant specimens of Palms and Tree Ferns. Fine examples of *Areca Baueri* and *sapida*, *Livistona Sieboldi*, *Pritchardia pacifica* among Palms, and *Dicksonia antarctica*, *Cyathea Dregei*, *C. medullaris*, *C. Smithi*, and others among Tree Ferns are to be met with here. A long span-roof house is filled with thousands of three-year-old seedlings of the beautiful *Friesia hieroglyphica*, a new *Bromeliad*, now being sent out by M. Linden for the first time. Orchids are a great feature here, several houses being devoted to their cultivation, also stove plants. I saw but few greenhouse plants. Amongst these I saw very fine and symmetrically trained plants of *Azalea indica*, which, although large, were planted out in beds and treated similarly to the young plants previously described. A house of fine large healthy *Camellias* completes the list of what is worthy of special note in this department.

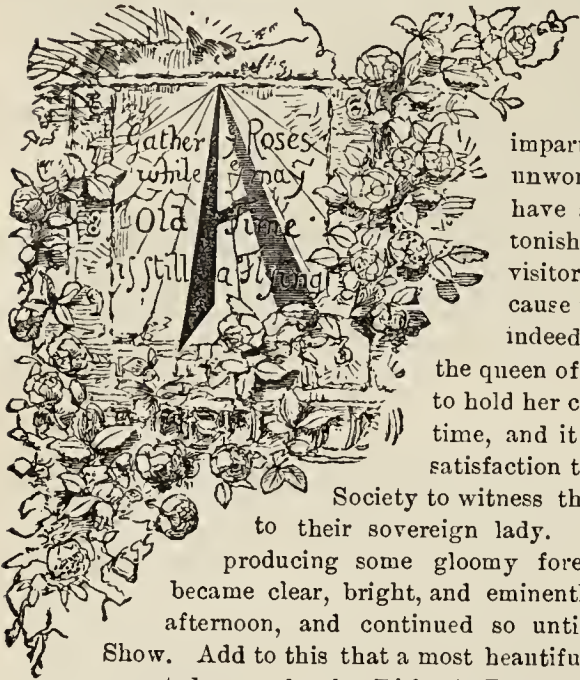
There is, strictly speaking, no outdoor department in this nursery. They have, however, a nursery of about fifty acres situated in the Isle of Levant in the Mediterranean. In concluding our brief notes on this fine establishment we must not omit to make mention of the principal entrance, which is of a very ornamental character, also the tastefully laid-out lawn, with its miniature lake and prettily and tastefully disposed groups of Palms, shrubs, and well-arranged flower beds filled with the choicest bedding plants. Everything in this establishment, plants, houses, and grounds, are in excellent condition. My best thanks are tendered to M. Lucien Linden, the Directeur-Général, and his skilled assistant, Mr. Neuberry, for their courtesy in showing and explaining everything to me.

Thus ended my visit there, and having an hour or so to spare I paid a visit to the gardens of the *Jardin Zoologique*. It is one of the leading promenades of Ghent, and a band discourses excellent music every alternate evening. A pleasant walk through shady boulevards and avenues brought us to the "people's park," the *Parc de la Porte de Courtrai*. It is situated in a very pleasant spot, and contains choice examples of the landscape gardener's art, and is planted with well-arranged and skilfully disposed clumps of trees and shrubs. There is a magnificent artificial stalactite cavern, with its curiously arranged nooks, crannies, and trickling waterfalls. Now I have come to the close of my third day, and after a Belgian supper and a good night's rest I am prepared for a visit to Brussels.—T. W. SANDERS.



## ROSE SHOWS.

SALISBURY (NATIONAL).—JULY 9TH.



LIBERAL display of flags and banners in the usually quiet streets of Salisbury imparted to that town an air of unwonted festivity, which would have awakened considerable astonishment in the mind of a visitor unacquainted with the cause for the rejoicing. It was, indeed, a fitting honour to pay to

the queen of flowers, who was that day to hold her court in Sarum for the first time, and it must have afforded great satisfaction to her nobles of the National

Society to witness the homage so willingly paid to their sovereign lady. The weather, too, though producing some gloomy forebodings in the morning became clear, bright, and eminently favourable early in the afternoon, and continued so until near the closing of the

Show. Add to this that a most beautiful site had been graciously granted—namely, the Bishop's Palace grounds, under the shadow of Salisbury's handsome Cathedral, and that exhibitors were enabled to contribute some of the finest blooms staged this season, and we have all the elements which constitute a successful exhibition. Such it undoubtedly was, for the townspeople—fully appreciating the feast provided for them—paid their admission fees with great freedom, and the respectable total of £131 was taken during the day, which may be expected to result in further efforts another season.

The Exhibition was under the management of a local Committee presided over by the Mayor, and with Mr. W. H. Williams as Hon. Secretary, a portion of the prize money being provided by the town. A number of subscriptions were obtained, and with substantial receipts at the gates it is hoped that the Committee will be enabled to institute an annual exhibition, and perhaps to resuscitate the local horticultural society, to the credit of which it is said a balance still remains. There appears to be a general desire in the district for energetic action in this matter, and after such a satisfactory experiment as the Rose Show it is probable that something will be done. Mr. Williams merits high commendation for his efforts in connection with the Show, which was thoroughly well managed throughout.

Competition was not quite so keen as might have been expected; but the classes were fairly filled, and in quality generally, size, substance, and colour of blooms the Show was one of the most even and beautiful held this year.

## NURSERYMEN'S CLASSES.

As at the other exhibitions of the National Rose Society the classes were in sections for nurserymen and amateurs, with some open classes and extras for local exhibitors. There were also subdivisions to prevent competitors entering in all the classes, thus encouraging a great number of exhibitors to stage, and giving the smaller growers a chance of success. In the nurserymen's section the most important class was for forty-eight single trusses, the leading prize being a silver cup, value five guineas, presented by the local Committee, and £5 given by the National Society. There were four competitors, and to the satisfaction of all the well-known Salisbury firm, Messrs. Keynes, Williams & Co. succeeded in winning these honours, retaining the cup for the town which presented it. The blooms were really magnificent, large, of fine substance, and remarkably rich in colour, with scarcely an exception. Particularly grand was a superb bloom of François Michelin at the corner of the stand, for which the silver medal was awarded as the best H.P. in the nurserymen's classes, and the other varieties were as follows:—Reynolds Hole, A. K. Williams, Duke of Edinburgh, Merveille de Lyon, Beauty of Waltham, Triomphe de St. Amand, Louis Van Houtte, Souvenir d'un Ami, Rosieriste Jacobs, Marie Van Houtte, Baron de Bonstettin, La France, Mad. Victor Verdier, Magna Charta, Wilhelm Köelle, Mad. Willermoz, Duchess of Connaught, Mdle. Marie Verdier, John Bright, Madame Lacharme, Marie Baumann, Edward Morren, Lord Macaulay, Paul Neyron, Charles Lefebvre, Etienne Levet, Mdle. Emilie Fontaine, Niphetos, Fisher Holmes, Archduchess d'Autriche, Duke of Teck, Alba Rosea, Senateur Vaisse, Marquise de Castellane, Barthelmy Joubert, Comtesse d'Oxford, Alfred Colomb, Madame Eugénie Verdier, Auguste Rigotard, Madame Gabriel Luizet, Ferdinand de Lesseps, Antoine Ducher, Camille Bernardin, Catherine Mermet, Xavier Olibo, Madame Nachury, and La Rosière. Messrs. Paul & Son secured the second place with very good blooms, scarcely so fresh and even as the first, but a praiseworthy exhibit. Handsome examples were staged of Reynolds Hole, Star of Waltham, Alfred Colomb, Edouard André, Le Havre, Penelope Mayo, and Fisher Holmes. Mr. B. R. Cant, Colchester, followed, his blooms being rather irregular, and some had suffered in their journey. Five good stands of twenty-four triplets were entered, Mr. G. Prince, Oxford, winning first honours with admirable fresh and beautiful blooms, Xavier Olibo being grandly represented, together with Niphetos, A. K. Williams, Mdle. Marie Finger, Horace Vernet, Innocente Pirola, Lord Macaulay, Madame Thérèse Levet, Reynolds Hole, Souvenir d'Elise Vardon, Comtesse d'Oxford, Maréchal Niel, Duke of Connaught, Marie Van Houtte, Charles Lefebvre, Madame Marie Verdier, Charles Duvivier, Jean Ducher, Prince de Rohan, Souvenir d'un Ami, Catherine Mermet, Duchesse de Morny, and Prince Arthur. Messrs. Keynes, Williams & Co. and G. Paul & Son were second and third, both showing well.

The most important class in Division B was for thirty-six single trusses,

in which there were seven entries, Messrs. Cooling & Son, Bath, securing the premier award with fine blooms of carefully selected varieties, an example of Duke of Albany meriting special notice for its great size and perfect form. Mr. F. Cant, Colchester, and Messrs. Cross & Steer, Salisbury, were the other prizetakers, each having fresh blooms, but a little wanting in evenness. Again, with eighteen single trusses, Messrs. Cooling & Son were the most successful exhibitors, staging a beautiful lot of blooms; Mr. J. House, Peterborough, following, his most notable bloom being a grand specimen of Reynolds Hole, and Mr. J. Davis, Wilton, took the third place. An extra class for twelve Teas or Noisettes was provided, and six competitors entered, Mr. G. Prince carrying off the principal prize with excellent blooms, quite in his best style. The varieties were Jean Ducher, Souvenir d'Elise Vardon, Madame A. Jacquier, Niphetos, Madame Cusin, Francisca Kruger, Souvenir d'un Ami, Comtesse de Nadaillac, Maréchal Niel, Marie Van Houtte, and Etoile de Lyon. Mr. B. R. Cant and G. Paul & Son were accorded the remaining prizes in this class for collections of good quality blooms, but not equal to the first in substance and evenness.

## AMATEURS' CLASSES.

Amateurs' Roses were better shown on this occasion than they had been at several of preceding leading exhibitions, and the general freshness was remarked by all who saw the blooms before the heat of the tent had deprived them of their chief charms. Six lots of thirty-six single blooms were staged, and the silver cup and prize of the same value as those in the nurserymen's class was won by T. B. Haywood, Esq., Woodhatch, Reigate (gardener, Mr. Ridout), with a superbly coloured collection of clean handsome blooms. The following varieties were represented:—Duchesse de Morny, Prince Arthur, Abel Carrière, Dr. Andry, Alba Rosea, Madame T. Perrière, Lady M. Fitzwilliam, Harrison Weir, Annie Wood, A. K. Williams, Marquise de Castellane, Comtesse de Nadaillac, Baronne de Rothschild, Ferdinand de Lesseps, Lady Sheffield, Charles Lefebvre, Madame Lacharme, Auguste Rigotard, La France, François Michelin, Reynolds Hole, Countess of Oxford, Le Havre, Catherine Mermet, Pierre Notting, Camille Bernardin, Duke of Wellington, Etienne Levet, Madame G. Luizet, Marie Rady, Madame H. Jamain, Madame C. Crapelet, Etoile de Lyon, Hippolyte Jamain, Horace Vernet, and Mons. E. Y. Teas. Second honours were adjudged to the Rev. J. H. Pemberton, Romford, who had fine blooms of Horace Vernet, Beauty of Waltham, Duke of Wellington, Charles Lefebvre, Exposition de Brie, Madame E. Verdier, and Marie Baumann. A. Slaughter, Esq., Steyning, was third with fresh and neat blooms. The best eighteen singles amongst five lots were those from W. J. Grant, Esq., Ledbury, who was closely followed by T. W. Girdlestone, Esq., and Miss Watson Taylor, Headington. A handsome stand of twenty-four blooms gained S. P. Budd, Esq., Bath, the premier prize in that class (Division D), his specimens of Lady Sheffield, Star of Waltham, Alfred Colomb, Harrison Weir, Madame Victor Verdier, and Hippolyte Jamain being unusually fine. Captain Christy, Sidmouth, gained the second prize for a praiseworthy stand; and T. Hobbs, Esq., Bristol, secured the third place with similar blooms. In the smaller class Mr. S. P. Budd, Mr. T. Hobbs, and the Rev. C. Eddy were awarded the prizes in that order for neat even stands of blooms.

Division E contained two classes, the first being for twelve single trusses, of which four boxes were entered. E. M. Bethune, Esq., Horsham, secured the leading position with rather small, but neat, fresh, and well-coloured blooms, the varieties being Marie Rady, Lord Macaulay, La France, Alfred Colomb, Jean Ducher, Auguste Rigotard, Abel Carrière, Souvenir de la Malmaison, Madame Gabriel Luizet, Velours Pourpre, and Capitaine Christy. The second and third prizes were awarded to J. T. Strange, Esq., Reading, and Captain J. Ramsay, Fareham, both having rather rougher examples, but the former had a remarkable bloom of Le Havre, and the latter one equally fine of Marie Baumann. E. Mawley, Esq., Lucknow House, Addiscombe, was accorded first honours with six blooms, good examples of Dr. Andry, Countess of Oxford, Pierre Notting, Etienne Levet, A. K. Williams, and Violette Bouyer. The Rev. G. Gardiner and the Rev. Alan Cheales followed in the order named with less regular blooms.

Two extra classes were devoted to Tea Roses, the competition being close, and the quality of the blooms very satisfactory throughout. With twelve, Mr. Bethune was the most successful amongst seven competitors, taking the first place with large and handsome blooms of Marie Van Houtte, Innocente Pirola, Perle des Jardins, Catherine Mermet, Anna Olivier, Souvenir de Paul Neyron, Jean Ducher, Caroline Kuster, Niphetos, Souvenir d'Elise Vardon, Madame H. Jamain, and Souvenir d'un Ami. The Rev. Pemberton took the second place, showing especially fine blooms of Souvenir d'Elise Vardon and Catherine Mermet, Mr. Ridout being third for good blooms, Catherine Mermet being particularly notable. Eight boxes of six Teas were staged, J. Smith, Esq., Warminster, leading with clean blooms of Souvenir d'Elise, Niphetos, Rubens, Perle des Jardins, Catherine Mermet, and Souvenir d'un Ami. Mr. Hobbs and Captain Christy followed, the former showing David Pradel very fine, and the latter Alba Rosea in equally good condition.

## OPEN CLASSES.

The single variety classes were well filled, and contributed greatly to the beauty of the Show. A dozen boxes of any dark Hybrid Perpetual (twelve blooms) were entered, Mr. G. Prince winning first honours with Marie Baumann, superb in size, substance, petal, and colour—a most meritorious stand in all points. Messrs. Cooling & Son followed with Alfred Colomb, wonderfully bright, and a very few points behind the first. Mr. B. R. Cant was third with Reynolds Hole, one of the best stands of this variety we have seen, which was also well shown by another exhibitor, together with Xavier Olibo, very dark in colour, clean, and well formed. In the corresponding class for any light variety there were ten competitors, Messrs. Cooling & Son leading with La France, fresh and beautiful; Messrs. Keynes, Williams & Co. were second with François Michelin in fine condition; and Messrs. Paul & Son were third with Merveille de Lyon, rather too full. For twelve blooms of any Tea or Noisette Mr. F. Cant won first honours with La Boule de Neige, charmingly fresh, clean, and beautiful blooms, which attracted much admiration. Messrs. Keynes, Williams & Co. were second with Alba Rosea, neat; Mr. G. Prince following with Comtesse de Nadaillac, fresh substantial blooms. A gold medal was as usual offered for three trusses of any new seedling Rose not in commerce or announced



but no award was made, neither the pale blush Princess of Wales shown by Mr. House, nor the striped Pride of Reigate from Messrs. Paul & Son, Cheshunt, being considered worthy of the medal.

#### DISTRICT-GROWN ROSES.

Six classes were devoted to Roses grown in the neighbourhood of Salisbury, the first two for those grown within twenty-five miles of the Council Chamber, and the remaining classes for those within a radius of ten miles of the same building. The blooms were of good quality in all the leading stands, the blooms being wonderfully clean, fresh, and of bright colour, but some were a little wanting in substance, especially in the smaller classes. For twenty-four single trusses Mr. F. Hatch, Salisbury, took the lead, showing Alfred Colomb, François Michelin, and Reynolds Hole uncommonly fine; Mr. F. W. Flight, Winchester, and Mr. J. Rawlins, Warminster, securing the other prizes with neat blooms. With twelve triplets Mr. J. Smith was the most successful, staging Charles Lefebvre, Fisher Holmes, and Xavier Olibo in first-rate condition amongst other good blooms. Phillip Grubb, Esq., Warminster, and the Rev. W. Hickman, Warminster, closely followed in the second and third places. J. R. Wigram, Esq., the Lord Bishop of Salisbury, and T. H. Staples, Esq., were the prizetakers with twelve blooms, all showing neat blooms, Mr. Wigram's being remarkably fine. Mr. F. Hatch was the premier exhibitor of six blooms, Mr. Wigram and Mr. J. Curtis securing the prizes for twelve blooms.

The premier blooms required careful adjudication, but after a prolonged examination the following were selected:—In the nurserymen's classes the Hybrid Perpetual François Michelin in Messrs. Keynes, Williams & Co.'s stand already noticed; the Tea Comtesse de Nadaillac from Mr. G. Prince, very large and handsomely formed. In the amateurs' classes H.P. Dupuy Jamain of exceedingly rich colour and fine substance from Phillip Grubb, Esq.; the premier Tea being Madame Lambard from Mr. Flight, of moderate size but very fresh and even.

Prizes were also offered for six table plants, the exhibits being very neat and well-grown specimens of Adiantums and small Palms; Capt. Wigram, the Bishop of Salisbury, and Sir F. H. Bathurst, Bart., Clarendon Park (gardener, Mr. Warden) taking their positions in the order named. The not-for-competition exhibits, which were not very numerous, comprised several boxes of fine Rose blooms from Messrs. Keynes, Williams & Co., and Messrs. Cross & Steer, Salisbury.

#### HEREFORD.

THE eighteenth anniversary of the popular West of England Rose Show took place on the 8th inst., and, favoured by genial weather, proved a great success. The entries in both the nurserymen and amateur classes were hardly this year up to the average, as was the case at other leading exhibitions which have already been held; but those who had entered kept well up to their engagements, and a grand display of Roses was the result. It need not be chronicled that the exhibits generally showed unmistakeable signs of the late thunderstorms which have passed throughout the entire kingdom, but in this respect the Rose nurseries of Mr. B. R. Cant of Colchester were singularly favoured, as, although the blooms must have been gathered early the day before for their long journey, so bravely did their freshness stand the heat of the hall that they visibly improved until far into the evening.

The exhibits of the celebrated King's Acre Nurseries (Messrs. Cranston and Co.), which carried off both the leading first prizes, were very large and level, but showed signs of suffering from the severe hailstorm which passed in that direction early on Tuesday morning.

Messrs. Curtis & Sanford showed also very finely, rivalling Mr. B. R. Cant in splendid Teas and Noisettes, which wonderfully lightened up their boxes. This firm also took first prize for new Roses (twelve) in a style which may be followed with advantage by most nurserymen, as this exhibit, perhaps the most important of all (as is well known by both rosarians and the public) is shown as a rule indifferently in every sense of the word.

It is interesting to notice that the first and second prizes for twelve trusses of any new Rose sent out by English nurserymen, and not in commerce previous to 1881, was won by H.P. Merveille de Lyon in so grand a style as to stamp this variety as one of the best Roses of late years. Mr. Cant and Messrs. Curtis & Sanford were the winners in the order named. It was the general remark that the first prize for "twenty-four blooms of any one Rose" was won by Messrs. Cranston & Co. with Marie Baumann in a style seldom witnessed, every bloom in the box being absolutely unique as an almost faultless specimen.

To sum up our general remarks. It will be beyond dispute that the present is a bad Rose year. Is it difficult to look for the reason, or, rather, succession of reasons? Surely not! Following on a mild winter, which caused Roses to be precociously early in root-growth, came a protracted drought, which is always fatally trying to so thirsty a flower as Queen Rosa. To this may be added the low night temperature at the end of May and beginning of June—frost succeeding frost in the most abnormal manner, while the rain, when at last it did set in, has been of so tempestuous and prolonged a character as, except in highly favoured situations, to damage the blooms and damp the ardour of the most enthusiastic of Rose-growers.

Thus handicapped, it must be satisfactory to find how good the leading Rose shows this year have been. The Crystal Palace, and again the West of England Rose Shows, leave really but little to be desired, while the early fixture of the National would alone account for it not quite this year coming up to its past reputation and unique position.

The following lists will give the leading varieties exhibited, these being emphasised in their place as especially worthy of public notice, with the name of the exhibitors according to the order in which the leading prizes were taken.

**NURSERYMEN** (open to the United Kingdom).—Seventy-two varieties. First prize, £8, Messrs. Cranston & Co., Hereford; second, £5, Mr. B. Cant, Colchester; third, £3, Messrs. Curtis & Sanford, Torquay. In Messrs. Cranston & Co.'s collection were the following varieties:—H.P.'s Marie Baumann, Pride of Waltham, Xavier Olibo, Edward Morren, Maréchal Vaillant, Elie Morel (grand), Charles Lefebvre, Tea Jean Ducher, H.P.'s Pierre Carnot, Marquise de Castellane, Reynolds Hole (superb), M. de

Rothschild, Horace Vernet (exquisite), Madame Montet, Louis Van Houtte (grand), M. Alfred Dumesnil, Sénateur Vaisse, Madame Cheveril, M. Bernardin, Princess Mary of Cambridge, Duke of Connaught, La France, Marie Rady (magnificent), Tea Devoniensis, H.P.'s Etienne Levet, Mdle. Eugénie Verdier, Camille de Rohan, Tea Maréchal Niel, Mrs. Laxton (exquisite), Marquise de Mortemarte, Prince Arthur, Duchesse de Morny (grand), Jean Liabaud, Star of Waltham (grand), Fisher Holmes, Madame Eugénie Verdier, Abel Carrière (fine), Magna Charta, Le Havre, Lord Bacon (poor), Ulrich Brunner (new, a great acquisition), Mdle. Mainer, Duchess of Bedford (exquisite), Tea Catherine Mermet, H.P. Lord Macaulay, Merveille de Lyon (grand), Madame C. Wood (fine), Tea Souvenir d'un Ami, Gloire de Bourg la Reine, Madame F. Bruel, Madame Ferdinand Jamin, Madame Marguerite Marroin, Penelope Mayo, Sultan of Zanzibar, Pierre Notting (fine), Victor Verdier, Duke of Edinburgh (grand), Alfred Colomb, Rosieriste Jacobs (great acquisition), Marguerite de St. Amand, Earl of Pembroke (poor), Marie Van Houtte (fine), Madame Victor Verdier (Tea), Innocente Pirola, H.P. Mdle. Annie Wood, Capitaine Christy, Crown Prince, Tea Niphotos (fine), A. K. Williams, Hippolyte Jamain, Général Jacqueminot (grand), Madame Bonnaire. In Mr. Cant's smaller but more fresh collection were, notably, the following exquisite Teas among others—Niphotos, Madame Angele Jacquier (superb), Comtesse Nadaillac, and Souvenir d'Elise (fine).

Thirty-six varieties, three trusses, first prize, £6, Messrs. Cranston & Co.; second, £4, Messrs. Curtis, Sanford & Co.; third, £2, Messrs. Davison and Co. The trebles of H.P. Reynolds Hole in one of the first-prize boxes, admirably staged for contrast, was a sight not easily forgotten. Twenty-four varieties, single trusses, first prize, £2, Messrs. Curtis, Sanford & Co.; second, £1, Mr. Cant; extra, Messrs. Cranston & Co.

Eighteen varieties, three trusses, first, Mr. Griffiths, Tollington; second, Messrs. Harkness, Betterby, Yorkshire; third, Messrs. Jefferies & Son. Twenty-four varieties, single trusses, first, Messrs. Harkness; second, Mr. Griffiths; extra, Messrs. Jefferies.

Seventy-two varieties, single trusses (open to nurserymen not residing in Herefordshire), first, £10, Mr. B. Cant; second, £6, Messrs. Curtis & Sanford.

**AMATEURS** (open to the United Kingdom).—The first prize of £5 given by Messrs. Cranston & Co., which carries with it the honour of winning the N.R.S. medal, was won by Mr. W. J. Grant with a finely set-up collection of thirty-six blooms as follows:—H.P. Sénateur Vaisse, La France, Marie Baumann, Merveille de Lyon (rightly named, grand everywhere), M. Bernardin, Victor Verdier, Louis Van Houtte, Hippolyte Jamain, Mons. E. Y. Teas, Pride of Waltham (fine), Pierre Notting (grand old favourite), Lord Bacon, Mad. Castellane, M. A. Dumesnil (fine), M. de Rothschild, Mrs. Baker (exquisite), Mdle. E. Verdier, Earl of Pembroke, Marquise de Mortemarte, Star of Waltham, Louis Van Houtte (grand), H.P. Mrs. Laxton (superb), Marguerite de St. Amand (grand), Mrs. C. Wood, Mdle. Marie Cointet, Reynolds Hole (grand), Noisette Marechal Niel, H.P. Vicomte Vigier, Mdle. Cheviot, Fisher Holmes (exquisite). Second, £4, Mrs. Bulmer, Hereford; third, £2, Mr. Tanner, Ludlow.

The classes restricted to Herefordshire were keenly contested, as also the cottager classes. If the maximum amount of prize money was restricted in the latter class to 15s., the amount of the first prize a larger and more healthy because genuine competition would be the result.

In the floral decoration division Lord Bute's two prizes of £3 and £2 for arrangements suitable for the drawing-room, were won by Miss E. M. Tomson, Hampton Court, and Miss Watkins, Wilcroft, respectively. In opera bouquets Miss Cypher was first and Messrs. Lewis & Son second. In the dinner table decoration the £5 prize given by Joseph Pulley, Esq., M.P., was won by Miss Berrow, Westhide; Miss Isabel Dew, Hereford, being second, and Miss Atlay, The Palace, highly commended.

While some of the specimens in this division were all that could be desired, we venture to suggest to the majority of the fair competitors, that while undoubtedly it is a sound technical maxim to let "art conceal art," it is quite possible for there to be no art at all to conceal. The "unstudied" result of allowing their own sweet will to purposely and wildly run riot, untrammelled by any fundamentally recognised rules, and uninspired by any ideal either original or borrowed.

It only remains to notice that the Judges in the various departments were:—In the nurserymen's classes, Rev. C. H. Bulmer, Credenhill Rectory, and Mr. Grant, Hope End, Ledbury; in the amateurs' classes, Mr. Sanford and Mr. B. Cant's foreman; in the open and decorative departments, Hon. and Rev. J. T. Boscawen and Mr. T. Jowitt, Mr. Henry Leslie, and Miss De Winton.—**HEREFORDSHIRE INCUMBENT.**

#### OXFORD.—JULY 10TH.

THE privilege was granted, by the Rev. Warden and Fellows, to this Society to hold its thirty-third annual Exhibition in the delightfully secluded gardens of the New College, which, by the way, was founded more than 500 years ago. Approaching it from a point in the High Street, a short distance above Queen's College, from whence may be beheld "the finest sweep of street architecture which Europe can exhibit," the University church of St. Mary-the-Virgin is passed, the contiguous colleges of All Souls, Brasenose, and Hertford, as well as the Radcliffe Library and the Old Schools, opposite to which a narrow street leads to the "lowly portal" of one of the grandest foundations of Oxford. Passing through the quadrangles we entered the gardens, and were at once enchanted with the picturesque surroundings. It is there that most of what remains of "the old city wall" are to be seen, and it is with satisfaction we note the evident care bestowed on its preservation. This wall forms the boundary of one side of the gardens, and shelters a tastefully planted border and a broad terrace walk. There, as in the other college gardens that we visited, and which we purpose to notice fully in the future, the lawns were in a high state of perfection, fitly demonstrating what can be achieved by application. The most interesting trees that we noticed in this garden were a very fine specimen of *Catalpa syriaca* and nine noble Limes.

During the time that the public were admitted to the Exhibition the rain fell fast and almost continuously—most refreshing to vegetation, but to the fair visitors it was a source of disappointment.

Turning to the exhibits the classes open to all first attracted attention, the leading class being that for forty-eight varieties, three trusses of each. In this Messrs. Curtis, Sanford & Co. of Torquay succeeded in gaining the



premier position, amongst their finest flowers being Merveille de Lyon, Alfred Colomb, Jean Lilievre, Reynolds Hole, Countess of Oxford, Madame Victor Verdier, Marie Baumann, A. K. Williams, Marie Verdier, Alfred Dumesnil, Duchesse de Morny, Marquise de Castellane, and Pride of Waltham. Mr. Charles Turner of Slough was second, staging fine flowers of Souvenir d'Elise, Sultan of Zanzibar, A. K. Williams, Horace Vernet, Reynolds Hole, Alfred Colomb, François Louvat, and Madame Isaac Periere, one of the first-named in this exhibit being particularly fine. In class 2, for forty-eight varieties, Messrs. Curtis, Sanford & Co. were again first, the varieties most noteworthy being those mentioned in their boxes of triplets, with the addition of Duc de Rohan, Marie Rady, Helen Paul, and Pierre Notting. Messrs. George Cooling & Son of Bath and Mr. Charles Turner were second and third in the order named. Some of the best blooms in the former exhibit included Abel Carrière, Marie Verdier, Mons. E. Y. Teas, Rev. J. B. M. Camm, Duke of Albany, Marie Baumann, Reynolds Hole, Alfred Colomb, A. K. Williams, and Pride of Waltham. In class 3, thirty-six varieties, Mr. John Mattock of New Headington, Oxford, was first with a stand of handsome fresh-looking flowers, the following examples being remarkably so—Pierre Notting, Reynolds Hole, Charles Darwin, Merveille de Lyon, Marie Baumann, Abel Carrière, Etienne Levet, Dupuy Jamain, Beauty of Waltham, Prince Camille de Rohan, A. K. Williams, Marie Verdier, Comtesse de Serenye, and Souvenir de Paul Neyron. The second prize was awarded to Messrs. Curtis, Sanford & Co., some of their best blooms being Duchesse de Morny, Maréchal Niel, Mabel Morrison, Madame Victor Verdier, Charles Lefebvre, Star of Waltham, and Marie Baumann, the third prize going to Messrs. George Cooling & Son. In Class 4, for twenty-four varieties, Mr. John Mattock was again first with a stand of flowers similar in quality to those exhibited by him in the class for thirty-six varieties, and his best examples were sorts that were conspicuous in the latter. Messrs. Curtis, Sanford & Co., and Mr. John Walker of Thame, were respectively second and third, the former staging fine flowers of Alfred Dumesnil and Annie Wood, while in the stand of the latter was a superb flower of Felix Genero.

In Class 5, for twelve of one variety, dark, H.P., Messrs. George Cooling and Son exhibited a stand of richly coloured blooms of Alfred Colomb, for which they were awarded the first prize, the second being secured by Mr. John Mattock with good specimens of Devienne Lamy, and the third by Messrs. Curtis, Sanford & Co. with fresh full-coloured blooms of Alfred Dumesnil. Mr. Charles Turner also staged in this class a box of Marie Baumann that deserves notice. In Class 6, twelve of one variety, light, H.P., Messrs. Curtis, Sanford & Co. were first with Merveille de Lyon, and their blooms of this finely formed white delicately tinted Rose excited general admiration. The second prize was awarded to Messrs. George Cooling & Son for a very good stand of La France, Mr. A. Evans of Marston, Oxford, taking third prize with the same variety. In Class 7, twelve varieties, Tea or Noisette, Mr. John Mattock was the only exhibitor, but his blooms were remarkably fresh and clean, amongst them being fine examples of Catherine Mermet, Comtesse de Nadaillac, Jean Ducher, Marie Van Houtte, Rubens, and Madame Welehe.

In the four classes open to all except "growers for sale," thirty-six distinct varieties, there was a good display, the blooms for the most part being of a high order of merit. The first prize was awarded to Miss Watson-Taylor of Headington, in whose stand were particularly fine blooms of Duke of Teck, Dr. Hogg, Alfred Colomb, A. K. Williams, Marie Baumann, Marie Van Houtte, and Pierre Notting, the second prize being won by the Rev. C. Eddy of Bramley Rectory, Hants, who staged a good specimen of Souvenir d'Elise as well as of some other varieties. In Class 9, twenty-four distinct varieties, Mr. Alfred Evans was first, in his stand being very fine blooms of Alfred Colomb, Capitaine Christy, Charles Lefebvre, Marquise de Castellane, Marie Baumann, Louis Van Houtte, Baronne de Rothschild, and Mons. E. Y. Teas. Miss Watson-Taylor and W. Wootten-Wootten, Esq., of Headington were second and third, the latter exhibiting good blooms of Dr. Andry-Mdlle. Marie Rady, Marie Baumann, and Louis Van Houtte. In Class 10, twelve distinct varieties, J. Bywater-Ward, Esq., of Headington, was first, the best blooms in this stand being Mdlle. Marie Rady, Marie Verdier, La France, and Camille Bernardin. Mr. Charles Taylor and W. Wootten, Esq., being respectively second and third. In Class 11, twelve distinct varieties, Tea or Noisette, Miss Watson-Taylor was first with a stand that included many fine blooms, particularly those of Niphetos, Catherine Mermet, Etoile de Lyon, Souvenir d'un Ami, Perle des Jardins, and Souvenir de Madame Pernet. The Rev. E. Penwarne-Wellings of Sanford Vicarage was second with a very creditable collection, the finest flowers in this stand being Madame Willermoz, Marie Van Houtte, Madame Hippolyte Jamain, Jean Ducher, and Souvenir d'Elise. Mr. Alfred Evans was a good third.

In the classes provided for amateurs (members of the Society), that of twenty-four distinct varieties, the Rev. E. Penwarne-Wellings was first, handsome blooms being staged of Auguste Rigotard, Antoine Ducher, Madame Hippolyte Jamain, Belle Lyonnaise, Alfred Colomb, Abel Carrière, Marie Baumann, and Prince Arthur. In Class 13, twenty-four distinct varieties, Mr. Charles Taylor was first. In Class 14, twelve distinct varieties, the competition was keen and the exhibits especially good, the four prizes given in this class being awarded to the exhibitors in the following order—Mr. Alfred Evans, Mr. E. Thorne, Mr. W. Narroway, and Mr. Chas. Collett. In Class 15, for nine distinct varieties, first Mr. Frederick Freeman, second Mr. John Allin, third Mr. Henry Poulter. In Class 16, for twelve varieties, three trusses of each, the Rev. E. Penwarne-Wellings was the only exhibitor, and was deservedly awarded the first prize. With six varieties, three trusses of each, Mr. Alfred Evans, Mr. W. Narroway, and Mr. E. Thorne were the prizetakers. For six trusses of one variety the Rev. E. Penwarne-Wellings again distinguished himself by securing first honours with very clean specimens of Baronne de Rothschild, the Rev. C. Eddy being placed second with the same variety, and Mr. W. Narroway was third. In Class 19, six distinct varieties, Tea or Noisette, Mr. Charles Taylor was first with Marie Van Houtte, and Mr. Charles Collett second with Niphetos.

In Class 20, a single bloom of any Hybrid Perpetual variety, Mr. Charles Collett was first with Charles Lefebvre, Mr. W. Narroway second with A. K. Williams, and Mr. Alfred Evans third. For a single bloom of Tea or Noisette Mr. Charles Taylor was first with Jean Ducher, Mr. Alfred Evans second with a beautiful flower of Marie Van Houtte, and the Rev. G. R. Downes of Begbroke third with a pale Gloire de Dijon.

The considerateness of the Committee of this Society, as shown in conveying exhibitors' productions from the railway stations to the place of exhibition, should commend itself to kindred societies who have not already adopted the same provision.—I. B. E.

#### FARNINGHAM.

ROSE shows vary in character, from the grand representative exhibition at South Kensington to the quiet provincial village. They are held in various kinds of localities. We have the conservatory at Kensington, the grand crystal house at Sydenham, the stately hall of St. George at Liverpool, and then there are private grounds open in some cases, as at Reigate, Brockham, and Salisbury; but there is hardly one more enjoyable on a bright summer's day than the quiet little Exhibition at Farningham, when the sun shines up the great room, and when all around looks bright and pleasant. Such was the case last Tuesday; indeed, the brightness was almost too much. The sun shone with a fierce heat, the air was sultry and close, and the poor Roses soon felt it; and as, owing to the peculiar character of the season Roses, especially those of amateurs, have been wanting in substance, the fading took place earlier than usual.

The nurserymen's classes were well represented, and amongst the blooms exhibited there were many of great excellence. These were in the class for thirty-six blooms. The first prize was awarded to Mr. F. Cant of Colchester with a good box of fresh blooms, containing Marie Baumann, Baroness Rothschild, Duke of Edinburgh, Mons. Noman, Horace Vernet, Duchesse de Morny, Souvenir d'un Ami, Constantine Tretiakoff, Madame Hippolyte Jamain, Reynolds Hole, Maréchal Niel, John Bright, Le Havre, Dr. Andry, Dr. Sewell, Countess of Oxford, Niphetos, Prince Arthur, Marie Finger, Madame Louis Pernet, Mr. H. Jamain (Tea), Duke of Connaught, A. K. Williams, Gabriel Luizet, Madame V. Verdier, Xavier Olibo, Souvenir d'Elise, François Louvat, Louis Van Houtte, Comtesse de Ludre, Sultan of Zanzibar, Caroline Kuster, Fisher Holmes, President, Mr. Krelle, and Boule d'Or, Mr. B. R. Cant was second, Messrs. G. Bunyard & Co. of Maidstone and Messrs. Paul & Son being third. In Class 2, for twelve Teas, Mr. F. Cant was again first with Marie Van Houtte, Niphetos, Boule d'Or, Madame Bravy, Catherine Mermet, Souvenir de Paul Neyron, Souvenir d'Elise, Maréchal Niel, Jean Ducher, Madame Margottin, and Madame Hippolyte Jamain. In Class 3, for amateurs, Mr. W. H. Wakely was first with an excellent box of twenty-four varieties with A. K. Williams, Madame Bravy, Madame Victor Verdier, Madame Hippolyte Jamain, Marie Baumann, Baroness Rothschild, Sir Garnet Wolseley, Paul Neyron, Alfred Colomb, Comtesse Riza du Parc, Fisher Holmes, Maréchal Niel (a fine bloom, which also obtained the National Rose Society's medal for the best bloom of Tea or Noisette in the amateurs' class), Duke of Connaught, Madame Lambard, Avocat Duvivier, Innocente Pirola, Marie Rady, Devoniensis, Louis Van Houtte, Laurette (Tea), Eugène Fürst, and Comtesse de Nadaillac. Mr. George Chaty of Buckhurst Lodge was second, and Mr. John Hollingworth of Turkey Court, Maidstone, third. In Class 4, for twelve entries, Mr. E. R. West of Reigate was first with a nice box of Dr. Andry, Baroness Rothschild, Alfred Colomb, Capitaine Christy, Camille de Rohan, A. K. Williams, Countess of Rosebery, Beauty of Waltham, Madame Victor Verdier, Gabriel Luizet, Marie Baumann, and Annie Wood. Mrs. Spottiswoode was second, and Mr. A. Wallis third. In Class 5, for nine varieties of Teas, Mr. N. W. Wakely was first with Marie Van Houtte, Comtesse Riza du Parc, Maréchal Niel, Madame Hippolyte Jamain, Comtesse de Nadaillac, Madame Lambard, Boule d'Or, Innocente Pirola, and Jules Finger. Mr. J. Hollingworth was second, and Mr. G. Chaty third. In class 6, for six blooms of any double Rose, Earl Stanhope was first with Horace Vernet, Mrs. Fuller second, Mr. E. R. West second with Alfred Colomb; and Mr. G. Chaty third with Camille Bernardin. In Class 7, for six blooms of any light Rose, Mr. Wakely was first with fine blooms of La Boule d'Or, Mrs. Fuller second with Capitaine Christy, and Mr. E. R. West third with Baroness Rothschild. The Roses in Class 8, in which the first prize was gained by Earl Stanhope, do not call for any particular remark. In Class 9, for twelve varieties (local prize), Mrs. Fuller was first with excellent blooms of Louis Van Houtte, Charles Lefebvre, Duchesse de Caylus, Abel Carrière, Marchionesse of Exeter, Xavier Olibo, Gabriel Luizet, Marie Van Houtte, and Comtesse d'Oxford. This box also obtained the medal for the best box in the local class. Mr. J. F. Burnaby-Atkins was second, and Mrs. Spottiswoode third. In class 10 (local), for nine varieties, Dr. Ashurst was first with excellent blooms of Reynolds Hole, A. K. Williams, Baroness Rothschild, Camille de Rohan, Comtesse d'Oxford, Madame Lacharme, Xavier Olibo, and two others. Mr. Tudd was second. In Class 11 Mr. Baker was first with good blooms of La France, Charles Lefebvre, Mrs. Baker, Marie Baumann, Catherine Mermet, and Abel Carrière. In Class 12, six Teas, Mrs. Fuller was again first with Devoniensis, Marie Van Houtte, Maréchal Niel, Souvenir d'un Ami, Madame Hippolyte Jamain, and Anna Ollivier. Mr. Wallis was second, and Dr. Ashurst third.

The table decorations, stands of flowers, and bouquets are always well done at Farningham, and this year was no exception to the rule, nor is this to be wondered. In Mrs. Seale of Sevenoaks, who again took first prize, they have had for years one of our most tasteful exhibitors, and seeing her success they must have, whether consciously or not, received many a lesson which has hindered them from running into those vulgarities which so often disfigure this class. Perhaps in one or two instances it was forgotten that one does want to see one's opposite neighbour, and that even a pretty stand of flowers is in the way; but as a general rule they were all exceedingly good. Mrs. Seale's table was light, elegant, and effective; the second was also good, but not so good; and the third, while pretty enough, was rather too ferny, *Adiantum cuneatum* being in too great profusion. The buttonholes in both divisions were exceedingly good, not overdone, as is too often the case, and on the whole I have not seen this season a more creditable shew of decorations than here.

I have attended each exhibition of the Farningham Society since its establishment, and have carefully noted from time to time the character of its local exhibits, and I feel bound to say that there is this year a vast improvement over every preceding one. The flowers are carefully put up, the names are correct, and the character of the flowers is vastly improved. I think, then, that the good people of Farningham ought to feel encouraged by their success; for if in a season like the present, which has been peculiarly trying to the small growers, they have shown this improvement, they have



every reason to expect that in the future this improvement will be still more manifest.

I should have been glad to have lingered here, and in the delightful surroundings have enjoyed, notwithstanding its heat, the summer afternoon and evening; but I had to hurry off to reach Salisbury in the evening, and very much wondered what sort of Roses could be cut in such weather for it. The next day supplied the answer in a wonderful manner, for unquestionably the Roses there were the very finest I have seen this season. Other hands will supply the account of that Show, but let me just say that

#### WIRRAL.

Of the many children of which the National Rose Society may now boast there is no more healthy and vigorous one than the Wirral Rose Society, which, from small beginnings, has now attained to a size and strength hardly equalled by any children of its age. It has long since grown out of its long clothes, and now that it is shorted (I do not mean diminished) we may well ask what it will be when it gets into knickerbockers and trousers. It has been carefully watched over by some very watchful nurses,



Fig. 10.—CATTLEYA SANDERIANA (FLOWER NATURAL SIZE). (See page 52.)

it was one of the most successful the National Rose Society has ever held, that the place for the Show—the Bishop's grounds—was most delightful, giving the visitors a fine view of the lovely spire and the chapter house, and that it was the unanimous feeling of all alike that the arrangements had been most carefully and excellently carried out; and that while much praise was due to all who had been engaged, such praise was doubly due to Mr. W. H. Williams of the firm of Keynes, Williams & Co., who acted as Secretary, and by his energy and urbanity did all that could be done to make the wheels run smoothly, and in which he was eminently successful. —D., Deal.

and is in all respects a most promising child. I have been privileged to assist at all its Shows; and although it has not had the support of the outside world, which one might have expected, yet the zeal of its members is in no wise daunted. Last year, being dissatisfied with the support it received on this side of the Mersey, it changed its venue to Liverpool, and held an exhibition in St. George's Hall, a magnificent room, but not by any means a good one as far as light is concerned for an exhibition. The result, too, was a disappointment as far as "takings" were concerned; still the Committee determined to persevere, and the Show was again held there last Friday (the 11th). The light is to some extent worse than it was, as



a large painted window representing St. George and the dragon has been put in, which still further denies the light, while the cross lights are very trying to Roses, which was a great pity, for a fine collection of Roses, both from amateurs and nurserymen, was contributed, and the Exhibition altogether was a most excellent one. The tables were wide, and had there been a much larger number of people there would still have been ample space for walking about. The flowers were staged on two parallel tables running down the centre of the room, while a stage under the organ was also filled, mainly by exhibits from Mr. Prince of Oxford. The nurserymen's classes were contributed to by Messrs. B. R. Cant, Paul & Son, the Cranston Company, Prince, Jefferies & Co., Rumsey, Harkness, &c.; the amateurs by Messrs. T. B. Hall, Grant, Rev. J. H. Pemberton, Day, Rev. L. Garret, Angus, &c. Mr. Whitwell was unfortunately prevented from coming, and his fine stands of Roses were greatly missed.

In Class 1, for seventy-two, distinct, Messrs. B. R. Cant, Paul & Son, and the Cranston Company took the prizes in the order named. Mr. Cant's Roses were Horace Vernet, Queen of Queens, Duke of Edinburgh, Souvenir de Mons. Boll, Baroness Rothschild, seedling, A. K. Williams, Catherine Mermet, Alfred Dumesnil, Madame Hippolyte Jamain, Reynolds Hole, Madame Charles Craplet, Edouard Morren, Prince de Portia, Madame Ducher, Madame Victor Verdier, Penelope Mayo, La Boule d'Or, François Louvat, Boieldieu, Alfred Colomb, Ulrich Brunner, Exposition de Brie, Madame Eugène Verdier, Abel Carrière, Souvenir d'un Ami, Antoine Ducher, Marie Cointet, Xavier Olibo, a magnificent bloom; Ville de Lyon, John S. Mill, Souvenir d'Elise, Dr. Sewell, Maréchal Niel, Fisher Holmes, Prince Arthur, Star of Waltham, Comtesse d'Oxford, Innocente Pirola, Madame Prosper Laugier, Duchesse de Morny, a grand bloom of surpassing excellence; La France, Madame Victor Verdier, Madame Angele Jacquier, Beauty of Waltham, Madame Montel, Gabriel Luizet, John Hopper, Duke of Teck, Comtesse de Nadaillac, Sénateur Vaisse, Duke of Wellington, President, Mrs. Baker, François Michelin, Mons. E. Y. Teas, Merveille de Lyon, Etienne Levet, Marguerite de St. Amand, Devienne Lamy, Countess of Rosebery, Prince Camille de Rohan, Pride of Waltham, Lady Sheffield, Princess Beatrice, Marie Rady, Charles Lefebvre, Dupuy Jamain, Marie Van Houtte, Madame Charles Moreau, and Princess Mary of Cambridge.

In Class 2, for thirty-six trebles, Mr. B. R. Cant was again first with Souvenir de Mons. Boll, Alfred Colomb, Madame Victor Verdier, Camille de Rohan, Madame Charles Craplet, an old and good Rose one does not often see now; Reynolds Hole, Catherine Mermet, La Boule d'Or, Marie Finger, Prince Arthur, Comte de Paris, John Hopper, Lady Sheffield, Baroness Rothschild, Abel Carrière, Pride of Waltham, François Louvat, Marie Cointet, Marie Baumann, Countess of Rosebery, Général Jacqueminot, Maréchal Niel, and Dr. Sewell. The Cranston Company were second, and Messrs. Paul & Son third. In Class 3, for thirty-six varieties, not open to the previous exhibitors, Mr. George Prince was first with Anna Ollivier, Madame Victor Verdier, Dupuy Jamain, A. K. Williams, Alba Rosea, Fisher Holmes, Comtesse de Nadaillac, Abel Carrière, Charles Darwin, Marie Van Houtte, Prince Arthur, Madame Hippolyte Jamain, Duchesse de Morny, Horace Vernet, Souvenir d'un Ami, Xavier Olibo, Charles Lefebvre, Madame Marie Bianchi, Duke of Teck, Etoile de Lyon, Duke of Connaught, Louis Van Houtte, Marie Finger, Souvenir de Mons. Boll, Jean Ducher, Marie Baumann, Catherine Mermet, Exposition de Brie, Etienne Levet, Innocente Pirola, E. Y. Teas, Merveille de Lyon, Auguste Rigotard, Countess of Rosebery, and Maréchal Niel. Messrs. Jefferies & Son, Cirencester, were second, and Mr. Rumsey third.

In Class 4, for eighteen trebles, Mr. Prince was again first with A. K. Williams, Baroness Rothschild, Charles Darwin, Prince Arthur, Souvenir d'un Ami, Jean Ducher, Marie Baumann, Madame Victor Verdier, Charles Lefebvre, Camille de Rohan, Comtesse d'Oxford, Reynolds Hole, and Madame Hippolyte Jamain, Tea. In Class 5, for new Roses, only one stand was exhibited by Messrs. Paul & Son, consisting of Henri Schultheis, Madame John Townley, Merveille de Lyon, Grandeur of Cheshunt, Duke of Albany, Pride of Waltham, Edouard André, Lady Mary Fitzwilliam, Queen of Queens, Duchess of Connaught, Etoile de Lyon, and Countess of Pembroke. In Class 6, for eighteen Teas and Noisettes, Mr. George Prince was first with Catherine Mermet, Anna Ollivier, Marie Van Houtte, Maréchal Niel, Alba Rosea, Jean Ducher, Etoile de Lyon, Comtesse de Nadaillac, Niphotos, Princess of Wales, Francisca Kruger, Souvenir d'un Ami, Innocente Pirola, Perle des Jardins, Marie Sisley, Madame Hippolyte Jamain, and Princess Vera.

The amateur classes were well represented, although, as I have said, we missed Mr. Whitwell. There was a sharp competition for the thirty-six varieties between Messrs. Pemberton, Grant, Hall, and Garnet, and the prizes were alternately awarded in the order named. Mr. Pemberton's flowers were Marquise de Castellane, Duke of Edinburgh, Gabriel Luizet, Countess of Rosebery, Marie Cointet, Marie Baumann, Beauty of Waltham, Marquise de Gibot, Louis Van Houtte, Niphotos, A. K. Williams, Marie Finger, Countess of Rosebery, Marguerite de St. Amand, Horace Vernet, François Michelin, Charles Baltet, Madame Victor Verdier, Baroness de Rothschild, Star of Waltham, Madame Eugène Verdier, E. Y. Teas, Jean Ducher, Charles Lefebvre, Victor Verdier, Ulrich Brunner fils., Duke of Wellington, Marie Van Houtte, Madame Hippolyte Jamain, Antoine Ducher, Camille Bernardin, Pride of Waltham, Marie Rady, and Marie Verdier. In class 8, for twenty-four varieties, the Rev. L. Garnet and Mr. S. P. Budd of Bath were equal, both stands containing excellent blooms. In Class 9, for twelve blooms, A. Tate, Esq., was first with Duke of Teck, Magna Charta, Sir Garnet Wolseley, La France, Pierre Notting, Thomas Mills, Beauty of Stapleford, Charles Lefebvre, Comtesse de Serenye, Souvenir de la Malmaison, Devienne Lamy, and John Hopper. There was a sharp contest in Class 20, for the National Rose Society's gold medal, between Mr. J. H. Angus and Mr. T. B. Hall, ultimately awarded to the former with Charles Lefebvre, a magnificent bloom, which also gained the premier prize for the best bloom (H.P.) in the amateur classes. His blooms were Duke of Wellington, Gabriel Luizet, Annie Laxton, Auguste Neumann, Marie Finger, A. K. Williams, Magna Charta, François Michelin, Jean Ducher, Ferdinand de Lesseps, Sénateur Vaisse, Dupuy Jamain, Etienne Levet, La France, Paul Neyron, Capitaine Christy, Marie Baumann, Madame E. Verdier, Louis Van Houtte, Rev. J. B. M. Camm, Mrs. Baker, Constantine Tretiakoff, and Fisher Holmes. Mr. T. B. Hall was a good second. In eighteen varieties Mr. T. B.

Hall was first with excellent blooms of Alfred Colomb, Duke of Edinburgh, Gabriel Luizet, Lælia, Prince Arthur, Général Jacqueminot, Louis Van Houtte, Sophie Fropot, Fisher Holmes, La France, Marie Baumann, François Michelin, Sir Garnet Wolseley, Madame H. Jamain, Camille Bernardin, Charles Lefebvre, Dr. Andry, and Marie Finger. Mr. Angus was second. In the class for eighteen varieties A. Tate, Esq., took first prize with good blooms of Comtesse d'Oxford, Ferdinand de Lesseps, Pierre Notting, Thomas Mills, Capitaine Christy, Général Jacqueminot, François Michelin, Marie Baumann, Magna Charta, Charles Lefebvre, Etienne Levet, Fisher Holmes, La France, Abel Carrière, Baronne de Rothschild, Mrs. Laxton, Sophie Fropot, and Duke of Wellington. In the class for twelve blooms C. J. Day, Esq., was first, Rev. J. H. Pemberton second. In six varieties (trebles) C. J. Day, Esq., was again first, Mr. Grant second, and Mr. Hall third. For the best twelve blooms of any yellow Rose no first prize was given. The second was awarded to Mr. T. B. Hall with Madame Margottin. For the best twelve blooms of any light Rose the first prize was awarded to the Rev. Lionel Garnet with Marie Finger, the second by Mr. Hall with Baronne de Rothschild, and the third by Mr. S. P. Budd with La France. For twelve blooms of any crimson Rose the first prize was awarded to Mr. Angus with Charles Lefebvre, the second to Mr. T. B. Hall with Alfred Colomb; Mr. Hall winning first honours in the prize for twelve blooms of any white Rose.

A word or two about the local exhibitors. Here, as elsewhere, I have seen a marked increase in the character of the blooms, the manner of setting up, and the naming of the flowers. Some of the blooms shown by Messrs. C. K. Hall, Churton, W. E. Hall, Armstrong, Shirley, &c., were excellent, especially when one considers how trying the weather has been to all small growers.

Four stands of Roses with Fern and other foliage were contributed, and the first prize was awarded to Miss Hall of Larkwood, whose box was a long way ahead of any of the others, and was lightly and elegantly arranged. Mr. Prince of Oxford showed some of the Oxford Roses not for competition, a box of Comtesse de Nadaillac being greatly and deservedly admired—indeed, there is no Tea Rose that I think equals this when it is in good form.

And now comes the most painful part of the tale. The Show was financially—as, unfortunately, the Wirral Show has always been—a failure. It was first held in Birkenhead Park, and people did not come to it there; then last year it was taken to St. George's Hall, Liverpool, and Mr. Hill Grey has described in the "Rosarian's Year Book" the ease with which he was enabled to take notes owing to the paucity of the people. It was even worse this year, and less was taken at the doors than at many a small provincial show, and this in the great and flourishing city of Liverpool, and with such enthusiastic growers to help it on as Mr. T. B. Hall, who has done more to encourage and stir up Rose-growers in his neighbourhood than anyone I know of anywhere; but his love and that of others has blinded them to the fact, humiliating as it must be, that flowers will not of themselves attract the public. I know nowhere that they do so. There must be music and the attractions of a promenade. If the National Rose Society's Exhibition at Salisbury had been held in a room instead of in the Palace grounds they would not have taken one-third of the money that they did. Others do not understand the love of the Rose as an ardent rosarian feels it; but if he, and especially she, have the opportunity of hearing good music, of seeing and being seen, why then the Rose or any other flower is thrown in as a makeweight. If these are absent so are the visitors also, and the Wirral Rose Society must weigh these facts before another year.—D., Deal.

#### HELENA GLOEDE STRAWBERRY.

I NOTICE in your issue of the 10th a very glowing account of Helena Gloede. On your recommendation that this Strawberry was an excellent late one I got some plants from Messrs. Veitch at Exeter, so no doubt they were true. Here is my experience. They ripened about a week ago, or nearly with the others I have; they are splendid croppers. The fruit varies very much in size, shape, and colour; some are a light pink, others (the large ones generally) colour well on the upper side and remain white below. They are very liable to mildew even in this comparatively dry season; and though they are mulched with straw the same as the other sorts, the slugs attack them far worse even before they are nearly ripe. I do not think their flowering equal to British Queen or President.—I. E.

[The slugs appear to bear testimony to the excellence of this Strawberry, and they are not bad judges. Strawberries with us are more liable to the attacks of mildew in dry than in wet seasons. With generous support the variety in question is as free from mildew as the others. There is no better flavoured Strawberry than the British Queen; in our opinion it far excels that of President, but tastes differ, and so do Strawberries in differing soils.]

#### ROYAL CALEDONIAN HORTICULTURAL SOCIETY.

THE summer Exhibition of this Society was held in the Waverley Market, Edinburgh, on the 9th and 10th inst., and taken over the whole was hardly up to the usual standard of the Edinburgh Shows. From a gardener's point of view the fruit, though limited in quantity was of the most interest, the Grapes being particularly good. Vegetables on the other hand were poor in quality and meagre in numbers, the drought previous to July having doubtless affected them. Cut Roses were not so numerous as usual, and the quality below the average. In the nurserymen's classes there was a keen fight between Messrs. Hugh Dickson of Belfast and Mr. Smith of Stranraer—the Scotch Roses running those from across the channel very closely, but in all cases the Scotch came only second. Of the pot plants, flowering, foliage, and Ferns, there was little worthy of comment. Among nurserymen four firms entered for a prize offered for the best table of plants 40 feet long by 10 feet wide, Messrs. Ireland & Thomson taking the premier position with an arrangement much below the average of those with which they have been successful at former shows. In the gardeners' section for a table 20 feet by 5 feet only one exhibitor staged—Mr. Grossart, Oswald Road. This was a



neat arrangement of Maidenhair Ferns and Orchids, with a few Palms and Crotons. Of miscellaneous exhibits Messrs. Dickson & Co., Waterloo Place, had a variety of Pinks for cutting, several of these being single. A full and good white double variety named Mrs. Welsh was very fine. Some bunches of *Calendula pluvialis*, a peculiar shade of white, is a good single flower, well adapted for cutting purposes. From Messrs. Paul & Sons, Paisley, came a large number of Pansies and florists' Pinks, each flower in full dress with a vast amount of white collar showing. Messrs. Stuart & Mein among other exhibits had some well-grown new Delphiniums.

The chief prizetakers for plants were Mr. John Patterson, Millbank, whose specimens gained for him first prizes for six stove and greenhouse plants, for three foliage, for four Cape Heaths, and for Palms; Mr. Grossart, who in addition to the table of plants was also first for six foliage plants in 9-inch pots, for *Caladiums*, and for *Dracenas* and *Crotons*; Mr. S. Graham, Killravorock Lodge, who was successful for Ferns and Lycopods, for *Pelargoniums*, and for one *O. chid*; the first prize for four Orchids going to Mr. A. Gow, Woodlands, Perth; and the first prize for two to Mr. A. Low, Murrayfield.

The chief fruit prizes were awarded as follows:—For a collection of eight kinds, first to Mr. W. McKelvie, Broxmouth Park, Dunbar, who was the only exhibitor, the best Melon also coming from Broxmouth. Mr. Morrison, Archerfield, Drem, had the best Pine Apple; Mr. Riddell, Duncombe Park, York, being second. For four bunches of Grapes Mr. Boyd, Callender Park, Falkirk, was first with two fine bunches of Waltham Cross, one Black Hamburg, and a Madresfield Court; Mr. McKinnon, Melville Castle, being second. For two bunches of Black Hamburg Mr. Johnston, The Gardens, Glamis Castle, with very good examples, and Mr. McKinnon was second. Mr. Boyd also showed well for these. For two black of any other variety Mr. Boyd gained the first place with fine Madresfield Court, Mr. Morrison following. For two bunches white Mr. Dunlop, Uddingston, was first with Muscat of Alexandria. Mr. A. Bald, Oswald Road, Edinburgh, took the second prize with the same variety. The best six Peaches were from Mr. McKinnon, and the best six Neectarines and Figs from Mr. Young, Taymouth Castle.

In the classes for cut Roses the leading prizes were secured by Mr. W. Parlane, Roslin, for thirty-six varieties; Mr. Richardson, Tenderghie, Whit-horn, being second. For twenty-four Mr. A. Kirk, Norwood, Alloa, was first, and Mr. Parlane second; and for twelve blooms Mr. John Kidd, Rothesay, was first, and Mr. Cocker, Bonnybridge, second; Mr. Hill Gray, Dunkeld, taking first for twelve Tea Roses. Mr. Hugh Dickson, Belfast, took all the first prizes in the nurserymen's classes except for twelve *Gloire de Dijon*, which Messrs. Cocker of Aberdeen secured, Mr. Smith of Stranraer being a very close second.

### LARGE PEACHES.

YESTERDAY I pulled a very large Peach, I think *Noblesse*, which I carefully weighed, and found it exactly  $12\frac{1}{4}$  ozs., the circumference being  $11\frac{3}{4}$  inches: a second one weighing 10 ozs. As this is the heaviest I have ever weighed it may be interesting to your readers, and I shall be pleased to hear if any larger weights have ever been recorded. In 1879 I had two Peaches from the same tree which weighed  $9\frac{1}{4}$  and  $9\frac{1}{2}$  ozs. respectively.—GEO. SUTHERLAND, Gardener to Col. Makins, M.P., Rotherfield Court, Henley.



### KITCHEN GARDEN.

WEEDS are unprofitable in kitchen gardens at all times, but they are more so now than ever, as they grow so fast and seed so freely at this season. Hoeing destroys many of them, especially if the operation is performed when the surface is dry and the atmosphere warm and sunny; but many weeds spring up amongst Potatoes and other crops which cannot be hoed, and these must be drawn out by hand. Now and again we put a number of hands on at one end of our kitchen garden with the instructions to weed it from end to end, and this is one of our favourite methods of making it thoroughly clean. In many of the smaller gardens weeds generally become very abundant at this time. In spring when they are dug in they are as a rule buried a little below the surface, where they soon spring up again and do much harm, as no kind of crop will grow well which is smothered with weeds. Whenever a weedy part has to be cleaned, no matter what time of the year it may be, the surface should all be hoed, the rubbish raked together, and burned. This is one of the best of all preliminary cleanings, and the advantage of it is never more visible than when the crops are growing.

**Matured Vegetables.**—Throughout July and August all vegetables come to maturity very fast. The weather both night and day is most favourable to their growth, and when the supply is great and the demand only moderate many things will soon be spoiled. A few Cabbages bursting or Cauliflower running to flower are not of much consequence, but in the case of Peas, Kidney Beans, and Globe Artichokes, allowing the early-formed produce to grow large and old is productive of great harm. For instance, a Pea or Bean 6 feet high, and with pods formed from near the bottom upwards, will swell up the first formed to perfection; but if these are not taken off they will severely check the growths of the younger ones, and many of them at the top will fail to fill or become good. In such cases it would be very much better to pick off all the first produce as soon as it is of a useable size and throw it away, rather than allow the first to cripple the successional lots. If anyone allows a few fruits of a Vegetable Marrow to become matured on the ends of the stem next to the main stem

their supply of young Marrows will soon cease, but by cutting them off will be produced until the end of the season. This rule applies to the majority of kitchen garden crops.

**Potato Onions, Garlic, and Shallots.**—These should all be taken up when dry and be spread out on a gravel walk or any dry surface in the sun to mature and dry. Here they may remain for a few weeks, and then store them in a dry shed or loft for the winter.

Cabbage seed should now be sown to produce plants for placing out in September and to come in for use in the kitchen early next summer. Webb's Emperor is an excellent variety for sowing now. It is a splendid sort. Before sowing the ground should be well manured and deeply dug, as free-growing luxuriant plants are the best. The seed may be sown broadcast or in rows 10 inches apart. Good plants may be produced both ways, and thin sowing should be practised in all cases, as when the plants come up in a crowd and have a struggle for existence long spindly stems will be the result, and these will never stand the winter. Dwarf plants which have had plenty of space for robust development from their youth upwards are the kind we like to deal with. Cabbages for autumn use may still be transplanted. When put into rich ground and well grown they are as acceptable in October and November as in April and May.

**Leeks.**—Where these are grown for exhibition the earliest will be of good size by this time, but where a batch is only grown for everyday use in the kitchen after the new year most suitable produce may be grown on any ordinary ground, and now is the time to begin taking them from the seed quarters. We are filling a large piece from which we have recently secured a fine crop of the Gloucestershire Kidney Potato. The ground is fairly rich and has neither been dug nor manured for the Leeks, but they are simply dibbled well down into large holes, where they have plenty of space to develop. They are put in rows about 1 foot between each, and 8 inches from plant to plant.

**Herbs.**—Large quantities of Mint, Sage, Thyme, and such like should now be cut, dried, and stored away for winter use. They should be taken in when quite dry; and although some dry their herbs in the sun we do not approve of this plan, as the sun takes too much of the substance out of them and shrivels them. An airy shed is undoubtedly the best place in which to dry herbs.

### FRUIT-FORCING.

**VINES.—Early Houses.**—The present time is the best for lifting and replanting in early houses Vines that have become enfeebled by forcing annually over a series of years, and where the roots have the run of both inside borders one part may be lifted one year and the other the next, or where the roots are confined to inside borders the roots may be lifted and laid in fresh soil without loss of crop, providing it be done early and with care. The house, before commencing operations, should be well shaded with mats and closed, syringing the Vines and walls, so as to lessen evaporation to the fullest extent, repeating this two or three times through the day, and have everything in readiness, so that the operation can be proceeded with quickly. Remove all the loose surface soil down to the roots, and commence at the point most distant from the Vines to remove the soil from amongst the roots and proceed inwards towards the stems. As the roots are bared lay them on one side, and cover carefully with mats in a wet state to prevent the roots becoming dried. Be careful to preserve all the small roots that proceed from near the collar, and after seeing that the drainage is in good condition put in a layer of fresh compost and proceed to spread out the roots evenly over the surface, and so follow on layer by layer until the whole of the roots are laid in the fresh material, and none deeper than 12 to 15 inches, seeking to keep the smallest roots within 6 inches, and if the majority of the smaller fibres are covered with 3 or 4 inches of soil all the better. Disperse the roots evenly through the soil in a single layer, and work the soil well into the angles with the hands. Press the compost moderately firm about the roots, and when the work is complete give a good watering with tepid water and mulch the surface 2 or 3 inches thick with short manure. Syringe the house and Vines two or three times a day, and shade so as to keep down the temperature, ventilating only to prevent the temperature rising much above 90°. The mulching must be kept moist, and in the course of a few days it will be seen by the growth in the laterals that the roots are taking to the fresh compost, when ventilation must be given more freely and the shading withdrawn by degrees, employing it only to prevent flagging. When the lifting is recovered return to the same course of treatment as obtained prior thereto, and after allowing a moderate extension of the laterals to stimulate root-action, gradually check them by judicious stopping. Carefully lifted and treated the Vines will be in capital order for forcing when the time arrives.

**Planting Young Canes.**—In the case of Vines that have been cleared of their crops and which are to be removed, young canes being put in their place, it should be set about with dispatch. Good drainage to carry off superfluous moisture is essential, and good loam of a porous and calcareous nature is the best, adding a tenth of old mortar rubbish, a similar quantity of chareol, and a bushel of crushed bones to every thirty of the other ingredients. Mix all well together, and do not make a wide border; to begin with, one of 6 feet in width is ample, and where it is intended to give the roots both inside and outside borders they should be made to fill the inside portion first. Always plant inside when practicable. The canes struck from eyes of the current year are best, and grown in turf preferably to pots. If the latter, the roots must be loosened and spread out to prevent their taking a circular direction after planting. Settle the soil about the roots by watering with tepid water, and if they show signs of suffering close early with sun heat; shade from bright sun, and abundance of atmospheric moisture with a low night temperature will soon secure their establishment.



*Late Houses.*—Late Grapes intended for bottling or keeping until after Christmas should have the shoulders well tied up to allow of the full development of the berries, and admit of a free circulation of air through the bunches in the autumn when the leaves fall. Keep the foliage regulated and the strongest laterals stopped where extension is likely to interfere with the even distribution of the sap, but do not practise close pinching, as it prevents root-action, and is nearly as inimical to a good finish as overcropping. Muscats, and all Grapes for that matter, having a great part of their roots in inside borders, will require heavy waterings with diluted liquid manure or guano water when the berries begin to take their last swelling, and should be applied at a temperature of 80° to 85°, and a good mulching given of short manure to keep the surface roots in action, which is a great aid to the swelling, especially those that are heavily cropped, and the ammonia given out by the manure will keep red spider in check.

**STRAWBERRY HAMMONIA.**—In our hardy fruit garden calendar last week this Strawberry was accidentally printed Harmonia. We think it well to correct this, as this variety is found to be very good in several gardens, and appears not unlikely to increase in popularity.

## THE BEE-KEEPER.

### SEASONABLE NOTES—SUPERING.

BEES and bee keepers are having a glorious time of it now. The splendid weather of the last three weeks has been all that can be desired, and honey has been flowing as copiously as in the red-letter years of 1876 and 1878. Supers have been and are being rapidly filled and sealed, and the extractor where used has been able to give good results. At such a time, when some bee-keepers have supers filled so rapidly there are other keepers of bees who are leaving their stocks to waste time by idly hanging out over the floorboards, those who have learnt to use bar-frame hives have learnt how to get the surplus honey and brood at their command; but there are still owners of skeps whose very system of management prevents the bees from doing their little best. Much more may be done with straw skeps than some owners of bar-frame hives imagine or allow. We have previously shown how the skep, even the round-topped one, can be made a hive for supering. We wish that some keepers of bees who in this busy season make their bees idle, could see what we are doing at this date with an ordinary-sized skep. The stock is a dome-shaped domicile, and was purchased last winter from a cottager leaving the district. We wished to prevent its swarming, and to see what could be done with it as a section-filler. As the season's history of this skep may give some hints to beginners in bee-keeping we shall endeavour to show how we got it into its present state—a teeming mass of bees working five boxes of sections at once.

In early spring, the straw ring serving as a handle, together with about two rims of straw, were cut out with a sharp penknife and a feeder placed over the hole. The stock was gently fed until in May it was a powerful colony. It remained with the rest of our hives in a state of rest during May, neither going back nor advancing. When the change of weather came and honey commenced to flow a small rack of sections was placed on it. This rack is simply a shallow box just holding the sections; the dividers rest on the sides of the box, and in the bottom is a 4-inch hole corresponding with the hole cut in the top of the skep. When this rack has been placed on the hive it is propped up level by packing cotton wool under the board or by winding round and round on the top of the hive a quantity of tow, flannel, or in fact anything to exclude air and to keep the rack in position. In order to get the bees at once into this box of sections a piece of comb containing brood was placed in one of the sections just over the entrance. A puff of smoke at the mouth of the hive and a little tapping soon sent the bees pellmell into the section rack. Once there they did not leave it, but at once proceeded to work out the foundation.

The weather became much warmer in a few days, and again the bees showed want of room and ventilation by standing out thickly on the floorboard. We now raised the body hive a little by placing wedges under it, and a day or two after, when the bees again began to appear outside, we placed a second row of sections in the rack, lifting out one nearly-filled section from the first batch and putting it in the centre of the new set, bees and all. This soon brought up the idle bees from the bottom and work went on merrily. We had now two rows of 2 lb. sections, seven in each well on the road. A sudden burst of heat and newly hatched bees warned us to give still more room. We therefore

constructed another rack, similar to the first, to take two other boxes of sections, and in this we placed another fourteen 2 lb. sections. Bees were now clustering out thickly on the shelf and against the hive. We gave a puff of smoke between the sections and the hive carefully lifted off the rack, and put the empty one in its place. We then examined the first lot, found three sections in each box fully completed, removed them, shaking the bees on to the other rack, and putting empty sections to fill up the gaps. The lower rack now became the top one. The whole edifice was well wrapped up with woollen stuff, and we had the pleasure before evening of seeing the bees at work in the four boxes.

On Friday last honey was being rapidly stored, and soon some of the middle combs will be taken out; but Saturday was very hot and close, and although all the boxes were well filled with bees, a ball began to form against the outside of the hive. We never like to see any bees left unemployed. Sections were not properly sealed above, and the erection was quite high enough already. We therefore got other seven sections, two with comb already built out in them. We placed dividers between them and simply tied them together as a box, placing a wedge between the two middle ones to form an entrance. We then merely stood this box on the shelf against the side of the skep where the bees were hanging out, and knocked off the ball to the front of the gap in the new box of sections. The bees soon began to explore it, and are now working well in it, and not an idle bee is now to be seen in the colony. They have elongated the brood combs in the skep to touch the floorboard, and we shall place a band of wood around them to protect them in case of change of weather.

Bees when watched and gradually set to work as in this case will build in any receptacle so long as it is in contact with the hive. We once took some bees for a friend who had built a fine lot of comb and stored and sealed up honey in it in no receptacle whatever. The hive stood on a slab in a niche in a wall, and they had simply built the combs like buttresses from the hive to the wall. We also once found a beautiful lot of pure comb honey in a drainpipe which supported the skep. The bees had passed below through a crack in the floorboard, and their owner wondered they did not swarm, seeing what a lot of bees worked to and fro from the hive. He had no idea that having been provided with such a roomy receptacle for working in they had no idea of swarming. We have only given this account of the straw skep to show novices what they can do with the same appliances, and we hope that our brethren who are well versed in the art of supering will forgive us for occupying so much space over the doings of one hive when thousands of supers are being equally well filled in all parts of the country. Our next contribution shall treat of the supering of a bar-frame hive.—P. H. P.

## TO CORRESPONDENTS

\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Strawberry King of the Earlies** (*A. G. Evesham*).—This variety was raised by Mr. Thomas Laxton, at the Girtford Experimental Garden, Biggleswade.

**Fruit-Growing Establishments** (*Vitis*).—It is quite impossible for us to answer your question. It would occupy far too much space to publish the names of all gardens where fruit is well and extensively grown, while to make a selection would be invidious. All the information you really need may be gathered from the reports of the leading fruit shows that have been held during the past two or three years.

**Pruning Fruit Trees** (*J. E. H.*).—If your trees are growing at all freely by all means stop the summer growths as usual, as the stronger the growth of the branches the stronger will be that of the roots, and the more fibrous



these are the better will the trees transplant. We should prune at once, not allowing a day's unnecessary delay to occur in the matter.

**Soil for Vine Border (W. J. D.).**—We presume the bulk of the turf proposed to be used contains more soil adhering to the roots than in the sample sent, otherwise the border would be little more than a mass of vegetable matter. Perhaps owing to the dry weather the bulk of the soil had become shaken from the portion sent. In its present condition we should not like to rely on it for Vines. Cannot you by digging deeper get more soil? Failing this, cannot you get soil from another source for mixing with the fluffy turf? Good garden soil would improve it greatly. In its present state we certainly do not consider it suitable for a permanent Vine border; in fact, we should hesitate to rely on it even for a "few years" without some addition as suggested.

**Plums Cracked (J. B.).**—We fear we are unable to give you a very satisfactory reply to your question, inasmuch as we are not sufficiently acquainted with the treatment as to syringing, watering, and ventilating to which the trees have been subjected. If there has been no mistake in these respects we can only suggest that the fruits formed while the roots of the trees were comparatively inactive, under which circumstances it would not swell freely, and the cuticle would necessarily lose its natural elasticity. Then, when roots commenced working freely, and the trees were fed liberally, the pressure of sap was so great as to cause the collapse of the Plums. We have seen the same thing occur after a very hot dry period, suddenly followed by very heavy rains in the case of Plums in the open air, nearly the whole crop of certain varieties splitting instead of swelling; and the varieties to which you refer are amongst those most liable to be affected in this manner.

**Fungus on Cucumbers (B., Wilts.).**—Your letter arrived just too late to be answered last week. Of the fragment of leaf sent little remained, as it was macerated by the moisture by which it was surrounded. The fungus had also vanished. Judging by the very weak stem of the leaf, and the small ill-fed Cucumber, the plants appear to require more support than they are receiving, either in the form of copious supplies of liquid manure or preferably top-dressings of rough rich soil for inducing the production of fresh roots. If you treat them more generously in this respect, and at the same time keep the atmosphere and temperature right, we think your plants, if not "too far gone," will improve rapidly. You say nothing about their general condition, nor of the treatment to which they have been subjected. You will find the names of plants at the foot of this column.

**Vines and Pines (F. C.).**—We are sorry to observe that your Vines are infested with mealy bug, there being more than a dozen insects in the particle of bark you have sent. Dissolve 2 ozs. of softsoap in a gallon of soft water, adding also a little soda, then mix in by violent agitation a wineglassful of petroleum, and with this wash the rods, scrubbing the mixture well in during the evening. Do not apply it in the morning, or to the young wood, fruit, or foliage; from these parts some of the insects may be dislodged by forcible syringings or washing with a sponge. In the autumn both Vines and every portion of the house must be subjected to a thorough cleansing, as if you allow this pest to get the master you will have little more pleasure in Grape-growing, while if it gets on the Pines you will never get it off again. Although you may have carried out instructions with exactitude, it does not follow that your Pines must be of the first size, as the plants were not in the best condition to begin with. We should not have been much surprised if they had not fruited at all. We are glad to hear some of them at least have done so, and the fruit may attain a larger size than you imagine. It is best to remove all suckers till the fruit shows. Queens started at once will, if in good fruiting condition, ripen in early winter. The sketch of the Grape does not at all resemble the Madresfield Court, the fruit of which is distinctly oval.

**Cinerarias (Mrs. D.).**—We have very great pleasure in answering your inquiries, and also those of all other correspondents whom we can usefully assist. We think you may still have some of your plants in flower by Christmas, but they will not be large; at least, those wanted as early as possible we should not shift out of 5-inch pots, in which size very attractive plants are produced. Your seedlings, as we understand you, are now pricked off in a pan. If this is stood on a flower pot or pots, inverted in another pan of water, the plants will be absolutely safe from slugs, and the moisture evaporating will also be beneficial. The seedlings will be far better in a frame than in a house, and they will grow all the more freely if in a shaded position. They must be kept regularly moist, and when fairly established will be invigorated if exposed to the night dews, placing on the lights in the daytime, with ventilation, and keeping the atmosphere of the frame moist. When the plants touch each other place them singly in 3-inch pots, using rather light soil, such as two-thirds of loam and one-third leaf soil, with an admixture of sand. Keep them close, moist, and shaded until they recover from the check received in potting, then admit air freely as before, removing the lights when the nights are calm and clear. Stand the pots on sharp sifted ashes, which always keep moist. As soon as the roots coil round the sides of the pots and protrude from the drainage transfer to 5-inch pots, using rather stronger loam and decayed manure in place of leaf soil, also mixing with the soil a twentieth part of soot, and pot rather firmly. Coolness with moisture, with shade from the mid-day sun, are what the plants need, and they must not lack for a moment, as especially must the soil be moist when shifting is done. When growing freely they may be sprinkled every afternoon in bright weather, and on the appearance of the first insect fumigate the frame slightly when the foliage is dry. Permitting insects to increase, and then using strong measures for destroying them, is one of the greatest mistakes that can be made in growing Cinerarias. Some of the plants may be again shifted into 7-inch pots, but the forwardest we should not shift, nor should we stop the central growth. This we should allow to extend and support the plants if needed with weak liquid manure. If you desire further information on any particular point do not hesitate to write to us, and we will readily attend to your letter.

**Lilium Browni (Idem).**—This Lily, if the plants and bulbs are healthy, flowers every year; but the bulbs are liable to decay, as their peculiar form renders them liable to hold the water that may collect around them. Special care should be exercised to drain well the station before planting by letting the soil rest on a layer of stones 6 inches thick. The bulbs should also be well surrounded with sand or other gritty matter, through which water will

pass freely. The Japanese are said to lay the bulbs on their sides when planting as a precaution against the lodgment of water in them, but we have not had occasion to try that method.

**Names of Plants (Clifton).**—The flower you have sent is of *Chrysanthemum segetum*, the wild Corn Marigold, but now frequently grown in gardens. (B., Wilts.).—1, *Alnus laciniata*; 2, *Pinus austriaca*; 3, *Halesia tetraptera*; 4, *Orchis maculata*; 5, *Geranium sanguineum*; 6, *Anagallis tenella*, the Bog Pimpernel. (Constant Reader).—1, *Francoa appendiculata*; 2, *Anemone narcissiflora*; 3, *Sidalcea oregana*; 4, *Sidalcea oregana* var. *densa*; 5, *Digitalis ochroleuca*; 6, *Catananche cærulea*. (D. H.).—*Arnica montana*. (Sir R. M.).—The large yellow flower is the Corn Marigold, *Chrysanthemum segetum*; the small yellow one is *Sedum acre*; the other is the Rose Bay, *Epilobium angustifolium*. We are not able to undertake to give the names of Roses, but the variety you send is possibly *Triumph de Rennes*.

**Flowers for Bees (J. Pelly).**—We cannot better answer your question than by extracting the following list of bee-feeding plants from Carter's "Explanatory Guide" to their exhibit of food, officinal, and honey-yielding plants at the Health Exhibition:—*Alyssum saxatile*, *Anchusa italica*, *Ambrosia mexicana*, *Arabis alpina*, *Melissa officinalis*, *Ocimum Basilicum* and *suave*, *Berberis communis*, *Borago officinalis*, *Polygonum Fagopyrum*, *Calliopsis bicolor*, *Iberis odorata*, *Clarkia pulchella*, *Salvia Horminum*, *Trifolium hybridum*, *Melilotus leucantha*, *Trifolium pratense* perenne, *Collinsia bicolor*, *Elsholtzia cristata*, *Trigonella Fœnumgræcum*, *Hedysarum coronarium*, *Ulex europæus*, *Gilia tricolor*, *Cerinth minor*, *Polemonium cæruleum*, *Brassica oleracea acephala*, *Leptosiphon densiflorus*, *Limnanthes odorata*, *Lupinus annuus*, *Malope grandiflora*, *Origanum vulgare* and *Majoranum*, *Mirabilis Jalapa*, *Reseda odorata*, *Tropæolum majus*, *Nemophila insignis*, *Petunia grandiflora*, *Phacelia congesta*, *Phlox Drummondii*, *Hesperis matronalis*, *Salvia officinalis* and *argentea*, *Satureia hortensis* and *montana*, *Scabiosa atropurpurea*, *Mathiola annua*, *Alyssum maritimum*, *Lathyrus odoratus*, *Helianthus annuus*, *Thymus vulgaris*, *Brassica Rapa*, *Omphalodes linifolia*, *Cheiranthus Cheiri*, and *Whitlavia grandiflora*.

**Bees not Swarming (G. T. G.).**—You need not fear the presence of fertile workers in a hive whose queen is so prolific that a ball of bees, "more in number than would make a large swarm," is hanging outside. An article on supering in another column will supply an answer to your question. These bees, not prepared to swarm, would have filled perhaps more than one large super during the late beautiful weather. If you had particularly wanted a swarm you should have driven the bees as soon as they needed more room. The bees have been hanging idle during the very prime of the honey season. If you had prepared a super and shaken the hangers-out into it, and then placed the super over the hive, everything was in favour of obtaining a fine lot of comb honey. Do so now, although getting late in the honey season. Perhaps you are near heather; if so, you may still look for good results. Fertile workers are not tolerated where the queen is prolific. It is in queenless stocks, or in stocks whose queens are getting old and sterile, that fertile workers gain a footing.

#### COVENT GARDEN MARKET.—JULY 16TH.

TRADE quiet. Supplies well in excess of demand, and prices generally lower.

##### FRUIT.

		s. d.	s. d.			s. d.	s. d.
Apples .. ..	½ sieve	1 6	to 5 0	Oranges .. ..	100	6 0	to 10 0
Cherries .. ..	½ sieve	7 0	12 0	Peaches .. ..	per doz.	4 0	12 0
Chestnuts .. ..	bushel	0 0	0 0	Pears, kitchen ..	dozen	1 0	1 6
Currants, Red ..	½ sieve	4 0	5 0	" dessert .. ..	dozen	1 0	5 0
" Black .. ..	½ sieve	3 0	4 0	Pine Apples English ..	lb.	2 0	3 6
Figs .. ..	dozen	2 0	4 0	Raspberries .. ..	per lb.	0 3	0 4
Grapes .. ..	lb.	2 0	5 0	Strawberries .. ..	lb.	0 2	0 9
Lemons .. ..	case	15 0	21 0	St. Michael Pines ..	each	2 0	6 0

##### VEGETABLES

		s. d.	s. d.			s. d.	s. d.
Artichokes .. ..	dozen	2 0	to 4 0	Mushrooms .. ..	punnet	0 0	to 1 6
Beans, Kidney ..	lb.	0 9	0 0	Mustard and Cress ..	punnet	0 2	0 0
Beet, Red .. ..	dozen	1 0	2 0	Onions .. ..	bushel	2 6	3 0
Broccoli .. ..	bundle	0 9	1 0	Parsley .. ..	dozen bunches	2 0	3 0
Brussels Sprouts ..	½ sieve	0 0	0 0	Parsnips .. ..	dozen	1 0	2 0
Cabbage .. ..	dozen	0 6	1 0	Potatoes .. ..	cwt.	4 0	5 0
Capsicums .. ..	100	1 6	2 0	" Kidney .. ..	cwt.	4 0	5 0
Carrots .. ..	bunch	0 3	0 4	" New .. ..	cwt.	5 0	9 0
Cauliflowers .. ..	dozen	2 0	3 0	Rhubarb .. ..	bundle	0 4	0 0
Celery .. ..	bundle	1 6	2 0	Salsafy .. ..	bundle	1 0	0 6
Coleworts .. ..	doz. bunches	2 0	4 0	Scorzoner .. ..	bundle	1 6	0 6
Cucumbers .. ..	each	0 3	0 6	Shallots .. ..	lb.	0 3	0 6
Endive .. ..	dozen	1 0	2 0	Spinach .. ..	bushel	1 0	2 0
Herbs .. ..	bunch	0 2	0 0	Tomatoes .. ..	lb.	0 6	0 9
Leeks .. ..	bunch	0 3	0 4	Turuips .. ..	bunch	0 3	0 0
Lettuce .. ..	dozen	1 0	1 6	" New .. ..	bunch	0 6	0 0



#### HAYMAKING.

THE MANAGEMENT OF GRASS LAND FOR HAY.

Our crop of meadow hay this year is a good one, decidedly



above the average, and we began mowing it on Monday, June 23rd, under a cloudy sky but with a rising barometer. The weather cleared gradually, and on Thursday of that week carting began, and was continued till late on Saturday night. All went well, there was no hindrance of any kind, and the first rick is one of the best in quality that we have made for several years. In the following week we were not so fortunate. The mowing machine was repeatedly broken; four of the labourers fell ill, so too did one of our best horses; but the weather continued bright and fine, and—well, difficulties are to be overcome by energy and care, and we only mention them to show that they will occur, and cannot be ignored in a calculation of ways and means.

Cold nights and want of rain in April and May checked the growth of the grass so much upon poor meadows that complaints of a short crop of hay are very general. We attribute our good crop to the careful, regular, and timely application of manure. This consists of farmyard manure applied at the rate of thirty cartloads per acre either now, immediately after the hay is carted, or in autumn when the cattle are taken to the yards. If done now the dung must be so old and rotten as to become pulverised quickly, and easily broken and worked into the grass by the bush or chain harrow, so as not to offer a serious check to the growth of the aftermath. This ought only to be attempted where exceptional facilities exist for doing it quickly and well, growth coming so soon after the hay is cleared that it is several inches high in a few days. Early in October may, therefore, be given as the best time, and half-decayed manure then answers perfectly. It continues decaying fast; its rich nutriment is washed down to the roots by the autumn rain and is quickly taken up, so that the grass, instead of presenting the bare brown aspect commonly seen on pastures at that season of the year, becomes green as an emerald, continues so throughout winter, starts early into a free strong growth in spring, and is then very little affected by cold or drought. We know no greater contrast in farming than the appearance of good and bad, or rather well and badly managed, grass land in winter and spring.

Thirty-six acres of our grass land for hay had no farmyard manure, and artificial manure had to be used. The formula issued by Professor Jamieson to the Agricultural Research Association was closely followed, and consists of half cwt. nitrate of potash, three-quarters cwt. nitrate of soda, half cwt. superphosphate of lime, half cwt. steamed bone flour per acre. These manures were procured separately, mixed at the farm, and applied to the land at a total cost of about 30s. per acre in the first week of March. Enough rain followed to dissolve and wash in the manure; a week later dry weather set in, and later dressings of manure could have done very little good to the hay crop. We have long had a strong conviction of the importance of an early application of manure; it is strengthened by this satisfactory result, and we are certainly disposed to have it done even earlier next year. The mixture of artificial manures was new to us, and by way of experiment we applied a double portion of the mixture to an acre of Rye Grass and half an acre of our poorest Meadow Grass. Its beneficial effect upon the Rye Grass was clearly visible in a week after the dressing, and it grew with such extraordinary vigour that it soon overtopped an adjoining piece which was top-dressed in the autumn with farmyard manure. The growth of the Meadow Grass was even more remarkable, the crop at the time of mowing being more than double its usual bulk from that particular piece. We are therefore naturally disposed to inquire, if by the outlay of an additional 30s. per acre we get from £4 to £5 worth more hay, would not a similar expenditure upon poor land be justifiable upon a much larger scale? Certainly we have reason to think so, and hope to act upon it next season. For richer land the quantity given by Professor Jamieson is doubtless sufficient. In proof of this we have a seven-acre meadow taken in hand six years ago to test the effects of a steadily progressive application of artificial manures. So poor was it then that not more than half a load of Bents was mowed upon the whole of it. A dressing of half-inch bones the first year, followed by annual spring dressings of Lawes' grass manure, for which Crown Manure was substituted last year, and the Jamieson mixture this year, has led to a gradual but decided improvement, and this year we have no better crop upon any portion of the land reserved for hay. No doubt a radical change of condition might have been brought about sooner, but then our experiment would have been neither so useful nor economical.

(To be continued.)

#### WORK ON THE HOME FARM.

*Hand Labour.*—Haymaking will soon be over, and care must be taken not to have the ricks thatched for a week or ten days after they are built and are in a proper state for heating. Although the hay has been got

together in excellent condition this year, we have adhered to our old plan of having a sack stuffed with hay put in the middle of the large ricks and drawn upwards as the rick is made to a point slightly above the eaves, so as to make a slight funnel for the escape of superfluous heat. As the rick gradually settles down the funnel becomes closed, so that there is only a trace of it when the hay is cut. See that the ricks are carefully pulled and securely thatched. The edges of the thatch should be clipped, and a neat symmetrical appearance given to the rick as possible. So engrossing has been the haymaking in the fine weather with which we have been favoured that work among root crops is somewhat in arrears. Men set hoeing and thinning of Mangolds, Carrots, and Turnips in the morning have been taken off for the hay each day as soon as carrying began. There are some blanks among the Mangolds, for which plants have been reserved, and will be put in now as soon as possible. Careful transplantation of Mangolds is successfully done, but such roots are always undersized, yet they are large enough to be useful.

*Horse Labour.*—Any manure-carting from the yards to mixers still unfinished should be now done as soon as possible, especially if required for Wheat or the autumn dressing of grass land. The winter-sown tares kept for horses and cattle will soon be finished, and the land ploughed and sown with white Turnips. Other tares have been folded with sheep, and this is an excellent plan with a ewe flock, especially on farms where good pasture is scarce. By tare-folding and judicious feeding some of the most forward drafts of lamb are brought on for down fairs in July and August, and the land is either ploughed for roots or for white Mustard in preparation for Wheat. The horse hoe, after being of much use among the field Potatoes before the soiling was done, is now in daily use among the other root crops and Hops, where it is all-important that surface-stirring should be frequent during the season of growth. Owing to the foul condition of Hop foliage so much time has been given to washing it that horse-hoeing had been somewhat behindhand. Both are important, and it is unwise to neglect anything in so profitable a crop as the Hop. Though not grown generally by the home farmer, yet it is by many, and for those we append a well-tryed recipe for the destruction of insects on Hop leaves:—6 lbs. of softsoap, 6 lbs. of soda, 6 lbs. of quassia chips. The quassia chips are put in a bag and boiled in the water, then the soap and soda are added. With 1 gallon of this liquor added to 8 gallons of water the foliage is syringed, care being taken to force it well upon the under side of the leaf, for it is there that most insects are found. Three or four or more washings are often necessary to destroy successive broods of aphides. Without this washing the crop would often prove a total failure.

*Live Stock.*—Owing to the hot dry weather some of the pastures are already becoming somewhat bare; a portion of the cattle should therefore be put upon what afterwards can be spared from the dairy cows and lambs, which when weaned thrive if turned upon the young succulent grass, the ewes being kept upon the older growths with equal advantage. Hasten the ripening of fattening beasts forward in flesh by moderate cake-feeding on the pasture, so as to begin drafting early all that are not required for the yards or stall feeding next winter. Old horses put to hard work should then have a little corn as well as plenty of green food. Such an outlay by keeping them sound is really a saving in the end, and staves off many an item in the veterinary surgeon's account. The dairy cows will now receive much benefit from the aftermath, which should afford them an ample supply of food without rambling far for it. A cow will consume enough grass for rumination in about two hours if it be plentiful. If the meadows are bare of trees there should be open lodges for shade for cattle, and for some protection from flies.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1884. July.		Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.	On grass.	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday .....	6	29.981	63.0	58.9	N.E.	65.1	71.8	54.7	115.7	52.1	0.437
Monday .....	7	30.17	65.5	60.6	E.	63.7	77.4	55.3	119.1	52.5	—
Tuesday .....	8	29.918	72.7	66.0	E.	63.9	84.4	53.6	119.7	48.2	—
Wednesday ..	9	29.828	73.7	66.6	N.E.	65.3	85.3	60.9	124.2	54.8	0.601
Thursday ....	10	29.647	63.2	62.6	S.W.	66.0	74.5	58.8	105.7	52.0	0.174
Friday .....	11	29.784	61.7	56.7	S.E.	64.0	71.6	53.1	111.0	48.6	0.074
Saturday ....	12	29.877	68.2	63.2	S.E.	63.1	71.1	56.5	97.3	51.0	0.134
		29.835	66.9	62.1		64.4	76.6	56.1	113.2	51.3	1.420

#### REMARKS.

- 6th.—Overcast morning; rain at 2 P.M., and heavy rain with thunder 4.15 to 4.30 P.M.  
 7th.—Dull morning; fine afternoon and night.  
 8th.—Fine and hot.  
 9th.—Very fine and hot.  
 10th.—Very heavy rain 8.30 to 8.45 A.M.; fair till 4 P.M., then rain till 7 P.M.  
 11th.—Generally dull, shower at 7.30 P.M., and very dark at 8 P.M. sharp shower at midnight.  
 12th.—Dull morning, rain in afternoon; fair at night

A fine summer week, with high temperature and two short heavy rains.—G. J. SYMONS





## COMING EVENTS

24	TH	Sheffield Show (two days).
25	F	
26	S	
27	SUN	7TH SUNDAY AFTER TRINITY.
28	M	
29	TU	
30	W	Warwick Show.

## STRAWBERRIES.

**S**O favourable has the weather been during "Strawberry time" for the full development of flavour and colour in this popular fruit, that varieties new and old have been fairly put upon trial, and advantage taken of so favourable an opportunity not only for a comparison of points of merit, but to obtain knowledge of the real utility of each for general cultivation. It is not my intention to write an exhaustive paper upon a subject about which so much has been written, but rather to call timely attention to a few sorts worthy of a place in every garden where they are not yet in cultivation. One cultural point I may once more usefully insist upon, and that is that any soil which has been brought into a suitable condition for the cultivation of vegetables will answer equally well for Strawberries. To speak of the soil of a kitchen garden in the same manner as we do of farm land, and say it is so heavy, light, cold, or wet as to be in an unsuitable condition for cropping, except in favourable seasons, is heresy. Garden soil, whatever its original condition, has to be drained if necessary, rendered fertile in the full sense of the word, and made so porous and friable that rain water passes quickly through it, and air enters freely. Until it is so improved it is unworthy of the name of garden soil, and certainly is unsuitable for the purpose to which it is devoted.

The last variety of Strawberry to ripen has impressed itself so favourably upon my mind that I mention it first. It is Loxford Hall Seedling. The appearance of a plant in full bearing is quite unique in Strawberry culture. The leaf-growth, though fairly robust, is so compact that the quantity and size of the fruit is altogether out of proportion to it. The fruit, although so abundant, is large, much of it being very large and cockscomb-shaped. All of it is handsome, of a bright crimson colour. The flesh is firm and of delicious flavour. I have gathered several dishes of excellent fruits of it from a row planted seven months ago, and the two-year-old plants have borne a heavy crop, some of which is still green. I regard it as the best of all late Strawberries. In striking contrast to this I may mention Helena Gloede as another late sort highly worthy of general culture, some of its fruit ripening with midseason varieties, and others well overlapping the first ripe fruit of Loxford Hall Seedling. Its leaf-growth is so strong as to be positively rampant, but its crop of fruit is so large, abundant, and well flavoured as to render it valuable and profitable. No doubt the hot dry weather accelerated the ripening of its fruit this year, and "J. E." (see page 58) should make due allowance for it. It should also be remembered that when a Strawberry is termed late in ripening it by no means follows that it is very late. Black Prince and Loxford Hall Seedling represent extreme periods of the Strawberry season, and are therefore to be regarded as indispensable. The other sorts, forming the connecting links in the chain of ripening, must be chosen after trial with due care and judgment.

Another variety that has stood me in good stead this

summer is Sir Joseph Paxton. Well has it been described as "one of the best and most useful varieties." It may be termed an early midseason sort, a strong grower with large foliage, large handsome tapering fruit of a rich red colour, very juicy, firm, and richly flavoured, and an abundant cropper. James Veitch, too, is another sort ripening with or following Sir Joseph Paxton, of which it is a worthy associate. The handsome fruit is bright in colour, firm, sweet, rich, most refreshing, and very abundant. The Countess was sent to me by Messrs. Veitch & Sons as a variety highly worthy of culture, and I certainly find it so in every respect. It is very hardy, of medium vigour, bearing plenty of large fruit, both rich in colour and flavour. Hammonia proves a valuable late midseason variety, a free cropper, much of the fruit being large and of excellent flavour. Unser Fritz has been fairly good, but I had hardly enough plants of it in fruit to enable me to form a safe opinion of its merits. I can say, however, that it is a late ripener and the fruit keeps good for a long time. That fine old white variety Bicton Pine has had an abundant crop of useful fruit—useful both for size, colour, and flavour. Much of the fruit had a charming delicate pink tinge on the exposed side. It should be used soon after it is fully ripe, as it becomes rather insipid in a day or two.

Red and White Alpines have been better flavoured than I have known them to be for some years. I have often been told that the flavour of fruit grown in this country is very poor in comparison with that found upon wild plants on the Alps. Two large beds two years old are apparently at their best, the crop being abundant, and is likely to afford a supply throughout August.—EDWARD LUCKHURST.

It is greatly to be regretted that the fine-flavoured Strawberry, British Queen, is so seldom seen now, as none of the larger varieties can equal it in richness of flavour. The fruits certainly do not present such an imposing appearance upon the table, and that seems to be the point chiefly studied, though, for my own part, I prefer a variety which has some claims to merit in other and more important respects. I had long had an impression that it was a difficult and uncertain sort to grow, but having been favoured with a basket of fruits from a friend who has been very successful with it I determined to try my fortune, and obtained some layers a season or two ago. Turning to Dr. Hogg's excellent "Fruit Manual" I found the following remarks, which guided me to success, and I subsequently found had been similarly serviceable to my friend:—"When well cultivated and thoroughly ripened this is perhaps the best of all Strawberries. It succeeds best with young plants renewed every season. The great fault is that the plant is so very tender. It will not succeed in all soils and situations, and it is generally an indifferent bearer. It forces well, and is much esteemed for that purpose." With regard to the suitability of the soil and situation I had little fear of the result, as my garden is some distance south of London, the soil being deep loam of medium texture, and well drained, so that there was practically nothing to deter me from a trial. A large quarter was accordingly planted, the ground being previously well prepared, and the next year I was rewarded with a fair though not a large crop of deliciously flavoured fruits, which amply repaid me for the experiment. Since then I have made a fresh plantation every season, and have not had the slightest cause for complaint as to scarcity of fruits, the only defect being that the colour is not quite so bright as some like to see it.

Another favourite of mine is the Hautbois, which has a very peculiar, and to me, a pleasing flavour. I have a small mound of rockery devoted to it, and there it grows and fruits most freely. The fruits, it is true, are small, and many would regard them as insignificant, but they are unique in flavour, and that I consider sufficient to entitle them to attention. It must, of course, be regarded more as a curiosity than as a useful variety, and could never be grown extensively in



gardens where a large supply of handsome fruits is in demand during the season.

La Grosse Sucrée I find a useful and reliable variety both out of doors and in pots for forcing, the fruit coming of a good size, generally well formed, regular, and in abundance. It is not quite so sweet as some varieties, but the slight acidity is agreeable to many palates. I have only a few rows of it, but I intend devoting more space to it in future.—FRAGARIAN.

### CHOICE ALPINE PLANTS.

**DIANTHUS FISCHERI.**—An extremely rare and highly interesting Russian species, equally as beautiful as the now better known *D. alpinus*. Its flowers are light rose, borne solitary on stems 3 or 4 inches high, and is distinguished from other members of this genus by its stiff lance-shaped leaves. Why it is so seldom seen in choice collections remains a mystery, since it seeds freely, and may also be readily increased by means of cuttings taken with a heel directly after flowering and inserted under bellglasses in sandy loam. It is fitted for a choice position on the rock, and should be planted where a free open drainage can be ensured. Slugs are peculiarly fond of this little gem; wireworms also are a great pest, not only to this, but to all members of this much-extended genus, including the whole race of Picotees and Carnations. Lime is a good preventive, though it is well to carefully examine the soil likely to contain this great enemy, who is so often quietly at work at the roots below. This species I have only seen in Messrs. Backhouse's list and in one private collection of choice alpine near London. It must not be confounded with another plant bearing the same name, and which I have seen in the Kew collection, but which grows 15 inches high, and has a fasciculated head of flowers much in the way of *D. cruentus*.

**DIANTHUS ALPINUS.**—This plant, which a few years ago was equally as rare as the preceding in good collections of hardy plants, is now receiving that attention which it so well deserves. It is of dense caespitose habit, with glistening, obtuse, oblong leaves. The flowers, which arise from amidst its dense carpet of leaves, are borne on short stems, often so freely produced as to almost hide the foliage; the flowers are deep rose, and have a striking effect on the rock or on a slightly raised bed, while as a pot plant it is equally charming and easily managed. It grows vigorously in equal parts of loam and peat, with a free addition of sharp grit, and may be increased by division, when the plants are sufficiently large, by cuttings the same as recommended for the above, and by seed. The latter process in all choice alpine is a matter of considerable interest, and especially so in the *Dianthus*. Many come with fainter-coloured flowers, and others of a richer hue, but none which I have at present seen can vie in richness of colour or form with the typical species. It is a native of the Austrian Alps, flowering during July.

Speaking of the *Dianthus*, we cannot pass without a few words in favour of the Glacier Pink, *Dianthus neglectus*. To see it, as is often the case, bearing the many traces which slugs are so wont to leave behind, half eaten away probably, it has not a very pleasing appearance, but when in its best condition and in full flower it is surpassed by no other Alpine Pink, the colour being of a most brilliant rose. It forms close, compact, wiry tufts of slightly glaucous and sometimes pointed, linear, grass-like leaves, from which spring numerous flower stems, each terminating with one of its brilliantly coloured and well-formed blossoms. Each of the three species here referred to, has, compared with the dwarf habit of the plants, exceedingly large flowers, which often exceed an inch in diameter on well-grown examples. The plant now under note luxuriates in rich sandy loam. Firm planting is an essential in all cases. It may be propagated as recommended for alpine, and seeds freely. It inhabits the highest portions of the Pyrenean Alps and the Alps of Dauphiny, and, being often surrounded for a considerable time with snow and ice, it is one of the hardiest of alpine.

**LEWISIA REDIVIVA (BITTER ROOT).**—Could we but boast in English gardens of the success with which this plant is cultivated by our North American friends, and, as they tell us, without bestowing any special care upon it, more than by edging their walks with it as we would use *Sempervivums*, then might we record another great stride towards perfecting the culture of choice alpine plants. I speak of this as an alpine in a broad sense, and among which it may be roughly classed. It is, however, in English gardens somewhat fastidious both as to situation and soil. It is a member of the order Crassulaceæ, and closely allied to the *Mesembryanthemums*. This at once indicates that no great amount of moisture is requisite in its cultivation; indeed it is impatient of much moisture, and often succumbs to it. Whether grown in pots or on the rock it should be fully exposed to sun and light, and in such a position that it may

receive a maximum amount of the former. This is essential, since its lovely blossoms only expand in the sunshine. Plant it firmly in loamy soil in the chinks of the rock where its roots may soon be in contact with the sides of the stones; it will root deeply in this fissure, and will expand its succulent rosettes of leaves early in summer. After these have attained their full growth—viz., some 3 inches long, a profusion of its beautiful flowers will soon issue from the rosettes, each blossom 3 to 4 inches in diameter. The tips of the petals are of a bright and pleasing rose tint, shading into pink, the centre becoming nearly white. If grown in pots it should be raised above the surface and placed between some pieces of stone, and with plenty of drainage. Thus treated I have been so far a successful cultivator of it, and also another species, *L. brachyelyx*, which I only had once some years ago, and have since lost sight of. Though I have never made the attempt, I am of opinion that it may be made equally at home if planted between the crevices of brickwork in old walls devoted to such plants as *Erinus* and *Linaria pilosa*; still it is next to impossible to lay down hard-and-fast rules as to its cultivation, since the conditions under which I have successfully grown it are quite distinct from those under which it exists in its North American habitat, where it is abundant. Though in English gardens it is somewhat sparsely distributed, the only means of reproducing it is by seed, division of the root being rendered impossible, inasmuch as it rarely develops more than one rosette of leaves or crown from the somewhat thick, branching, and woody rootstock.—J. H. E.

### A PLEA FOR EXHIBITORS—WHAT TO EXHIBIT.

MANY employers are under the impression that if they allow their gardener to compete at the local or other shows they do so at a personal sacrifice, or, in other words, that they are the losers by the arrangement. This prevents many deserving gardeners from winning the rewards, pecuniary and honorary, that many of their productions deserve. Such men attend the shows, see for themselves they could have surpassed some of the exhibits, and go home discontented and discouraged, whereas if they had been allowed to compete to a reasonable extent they would have been stimulated to still further exertions, and both employer and employed would be benefited thereby. Doubtless there are instances where gardeners have abused their privileges so far as to study gardening solely from an exhibition point of view, but these are exceptions to the general rule, and must be treated accordingly. The employer has the remedy in his own hands. If it is seen the requirements of the establishment are neglected, then by all means wholly or partially stop exhibiting, and this will soon have the desired effect. The sensible gardener does not neglect his duties; on the contrary, the more he grows, especially in the shape of fruit and vegetables for exhibition, the better is the home table supplied.

It should be remembered that ordinary garden produce is seldom good enough to win the best prizes at any fairly good show, and exhibitors, well knowing this, strive to improve their crops in various ways. Then, again, it is almost impossible to time many crops so as to have them in perfection just when wanted, and the grower therefore makes smaller successive sowings and plantings, so as to have what is required at the right time. Every nook and corner, every house and frame, is closely cropped—everything, in fact, being made the most of, and but few employers are aware how many extra hours gardeners spend in the garden among the various plants and crops. Are gardeners the sole gainers by all this, and are they so well paid that they should not be encouraged to win a few shillings or pounds occasionally?

It may be urged that exhibitors are in the habit of lightly cropping in order to secure larger or more sensational produce; but this, if true in some cases, is not generally so, as in some instances, say with such fruits as Grapes, Melons, Peaches, Apricots, &c., nothing is gained by very light cropping. This fact soon becomes apparent to the exhibitor, and his aim accordingly is to secure as many fruits as the trees, with the aid of good attention, will ripen to perfection. Only a few are wanted for exhibition, and even these, with the remainder of the crops, are available for table. With plants the case may be somewhat altered; but I ask, Is it not a source of pleasure to owners of gardens to have a few plants that will bear being separated from the rest? We will admit that large specimens are not so serviceable as a greater number of smaller ones, and where space is limited and the demands for decorative plants and cut flowers heavy, then the latter must be grown in preference. Those, however, who keep up a garden entirely from a utilitarian point of view, and not as a luxury, seldom derive the amount of pleasure that falls to those who have a real pride in their gardens. With all due respect, and without any personal concern in the matter, I ask that gardeners be allowed to exhibit at least occasionally, always provided they never neglect their home duties. There ought always to be a good understanding between master and man, one encouraging, the



other doing his best to deserve encouragement, and then fewer complaints would be heard and fewer changes made.

#### WHAT TO EXHIBIT.

I have known plenty of instances where exhibitors have succeeded in growing excellent fruit, and more especially vegetables, and have yet unfortunately selected those less certain to find favour with judges. Some think that mere size should win, while others err in giving too great a preference to quality, the exhibits in either case, from being too large or too small, being passed over accordingly. One of the primary objects of promoters of exhibitions is the improvement of horticulture generally, but if these competitions do not result in the production of a quantity of superior plants, fruits, and vegetables than were to be met with previously, then they have missed their mark. I hold that but few things can be too large provided quality is not sacrificed, and I think this view will meet with general acceptance. What is wanted is large and perfect specimens of good varieties, and these will easily surpass huge examples of well known coarse sorts.

There are also proper seasons for everything, and those who sometimes get things very much out of season need not be surprised and vexed, as they sometimes are, that these productions are not appreciated by good judges. For instance, such Grapes as Black Alicante and White Tokay, forced and apparently ripened for exhibition in June and July, may easily be placed behind fairly good examples of Black Hamburg and Foster's Seedling. Unless classes are provided for them late keeping sorts should not be exhibited till the autumn shows. It is then when the early sorts are failing in quality and the late varieties becoming fit to eat. Black Hamburg and Madresfield Court are the best black Grapes for the early shows, and well-finished bunches of the latter I would prefer to equally well-finished Black Hamburg. Foster's Seedling I consider the best early white Grape, and would place Buckland Sweetwater second to it, both succumbing to good examples of Golden Champion or Duke of Buccleuch. From July onwards the Muscat of Alexandria is the best white Grape we have, but this ought not to be in competition with the others, and merits a separate class.

Two bunches ought always to be sufficient to constitute a dish, and the sooner the framers of schedules recognise this the better for all concerned. At present it is generally stipulated that three be shown, and these should match each other as nearly as possible. They look much better on sloping boards than in dishes, and even small neat baskets are preferable to the latter. Whenever possible the bunches should be cut with a good piece of well-ripened growth attached, and will travel well and keep better on very slightly padded boards, as much cotton wool induces sweating. White paper shows up black Grapes, and for Muscats and white sorts generally pink paper is best. Medium-sized, plump, well-coloured bunches will generally be preferred to larger, perhaps looser, and only partially finished examples.

The classes for Melons generally bring out some extraordinary bad fruit, and tasting these is the most disagreeable duty of judges. Exhibitors are constantly overlooking the fact that Melons are judged almost solely by flavour, and those, therefore, who dry their plants, or otherwise induce premature ripening, often make a mistake. Keep the foliage healthy, and nearly any kind of Melon will ripen well. Cut them when cracking round the stalk, keep them in the fruit-room for about three days, and then they will be ripe to the rind. Grow plenty of fruit in succession, and then there is seldom any need to unduly hasten ripening or to keep them longer than they are fit to eat. Where there is only one class for Melons stage a green-fleshed variety, as, although some of the newer scarlet-fleshed varieties are really of equal merit, many judges have a predilection for the green-fleshed sorts.

Opinions vary as to the merits of different varieties of Peaches and Nectarines, and some judges give preference to the largest and best-coloured fruit, no matter what the variety is; but this is bad judging nevertheless. A fine dish of either Bellegarde, Royal George, or Walburton Admirable ought to surpass almost anything else; and of Nectarines I should always prefer well-grown dishes of either Pine Apple, Pitmaston Orange, or Victoria to equally well-grown examples of other sorts known to be of inferior quality. Of Apricots a good dish of Moorpark should excel all others.

Plums will not be largely shown this season, and in many cases there will be no choice. Whenever they can be had those of the Gage type, Jefferson's, and Coe's Golden Drop, should be shown either in collections or for a single dish of any dessert variety. The Negro Largo is a handsome Fig, and Castle Kennedy grows to an immense size, but I would still give the preference to a fine dish of the Brown Turkey, the latter being of much superior quality. If they are judged by flavour, house-grown fruit will always surpass those grown in the open air.

While they are in season there is no Pear to surpass good examples

of Jargonelle, and the same may be said of Williams' Bon Chrétien; but unfortunately both are bad keepers, and those who exhibit them in collections especially must watch them closely, in order not to stage any with black centres. Judges are very fond of putting their fingers through these, especially if they have a difficulty in making their awards. Later on such handsome and good varieties as Louise Bonne of Jersey, Marie Louise, Pitmaston Duchess, Glou Morceau, and Van Mons Léon Leclerc invariably tell well. Of dessert Apples Red Astrachan is the best for early shows, and later on the preference should be given to medium-sized well-coloured fruits of good quality. Having already taken up more space than at first anticipated, further remarks must be postponed.—W. IGGULDEN.

#### THOUGHTS ON CURRENT TOPICS.

LAGGING behind is no credit to any man, and I fear I am lagging behind with my thoughts. I never was a quick thinker, and the glib pens and mental activity of current writers are too many for me; and besides, there is another "thinker" in the case who cannot be ignored. I wished to dwell momentarily on two or three other matters in the Journal of the 10th inst., but on the completion of two or three paragraphs this other thinker thought I had better "think about going to bed," and as the witching hour of midnight had passed I went; but am awake again.

I THOUGHT when Mr. Murphy described his able Chrysanthemum-growing friend as being "more likely to be in advance than behind his fellows," that he was right, especially in growing Chrysanthemums, and having his plants root-bound in 10-inch pots in July. There is such a thing as advancing too fast, and this is possibly a case in point. If comparatively small plants in relatively small pots are desired, it is altogether a mistake to pot rooted suckers in the autumn, since plants with the grandest of bloom can be had by even late spring propagation. Mr. Murphy's friend must now pile up turf on the surface of the pots, and this will keep the plants moving steadily, which will be much better than rushing rampantly. Previously, however, if the soil in the pots is not quite firm it should be made so with a blunt stick. If they are highly fed now they may be very disappointing in the autumn. Mr. Murphy goes on to say that rooted suckers rarely make good specimens. In that assertion I think he is wrong. With space and good culture they make the grandest of plants. Chrysanthemums struck now or even later make most acceptable plants for certain positions and purposes of decoration.

A CORRESPONDENT "A." advocates the planting of cider Apples for ornament. He may be right, but I do not think I should plant them. I have had the pleasure of planting fruit trees with shrubs for ornament, and the gratification of scoring a success. A Foxwhelp Apple may be handsome when laden with scarlet fruit, but so is a Worcestershire Pearmain, a Devonshire Quarrenden, and a Red Astrachan, with many others, and they are useful as well as ornamental, as are purple and yellow Plums and Damsons. When I see garden ground devoted to trees of various kinds, and yet hear the owners deplore they have no place for growing fruit, I always think they are slaves to old customs, and that if they thought a little more on the merits of the question they might derive both pleasure and profit from a slightly different method of occupying their gardens.

"FUCHSIAS as pillar plants" affords food for thought. There is no method of training Fuchsias comparable to training them to roofs, and few other flowers that are capable of covering roofs more agreeably. All that is needed is to plant them like Vines, and prune them like Vines, at least in winter, and in summer they will produce such floriferous sprays that will put to shame the pinched and distorted pyramids that are grown in pots and win prizes at exhibitions. Still nothing is said or thought against these plants as such. They are well grown in their way, at least some of them are; but the freer, more natural, more elegant, and altogether better way of training these plants to pillars and roofs is far too generally ignored.

I FEEL a little hesitation in venturing to give expression to a thought suggested by an article without a signature, as there is no knowing who is at the back of these authoritative-looking productions, but I see that James Veitch Strawberry was on page 42 recommended to be grown everywhere. I thought that was going a little too far, or rather not far enough, because in the far north I have seen this variety fail utterly. It will soon commence flowering in some places, if it flowers at all, and the



fruit, if it ripens, will not be fit to eat. In the south it is perhaps the largest Strawberry, and useful because late, but I have never yet seen it brightly coloured or highly flavoured. After this bold utterance I await the usual fate of Strawberries—a crushing.

A CAPITAL hint is given in a paragraph in the same series of calendarial notes on flowering the beautiful old summer Lily, *Lilium candidum*, in winter. Observant gardeners are always finding something out, and this is a discovery, the author of which, I think, is as much entitled to a certificate of merit as an enterprising individual is who shows something that somebody else raised, and is awarded that mark of approval by the discriminating Floral Committee of the Royal Horticultural Society. It is not, I sometimes think, the man who does the most, but he who takes care to show the little he accomplishes, that becomes famed in his day and generation; yet I may be wrong, still I am inclined to think that some have got honoured for little while others have done much for nothing, and so I suspect it will continue to the end of the world, and there will be an end of the whole matter.

THE hint of Mr. J. Pithers respecting covering the soil of Melon beds, when the crop is grown in frames, I thought good, and for this reason—that in a certain district where the gardens are famed for Melon culture on beds of fermenting material covered with frames, the surface of the soil is covered with either shingle, tiles, or slates, and the practice answered admirably. It is one of those good old plans that appear to have gone out of fashion very much, and I think is worth being brought in again.

WHAT comfort and solace plants and flowers give to those who love them. That was my thought on reading the article on Filmy Ferns last week. I believe the author of that article has been blind for years. Is it not wonderful that he can write, or dictate, so cheerily? We ought to be proud of such a man as Mr. Smith, gratified that he is still with us, hopeful that he may be permitted still much longer to remain. For years he has worked amongst Ferns, studied their requirements, and ministered to their wants. The great collection at Kew, with his published works, form a monument to his perseverance, ability, and knowledge. I, with others, admire the man I have never seen and never expect to see. I think of him sympathisingly, reflect on his patient research, and if I in a moment of vanity presume to dwell on what I have done with what he has accomplished, the great fear is impressed on me that I am an unprofitable—THINKER.

#### HONEYDEW.

I OBSERVE it noticed in the Journal that the question how honeydew is formed was raised recently before the Scientific Committee of the Horticultural Society. It was settled in my mind long ago, and I believe that the substance is simply the excreta of insects. It is of course possible that a similar substance, known by the same term, is formed in another way. In order to discover whether insects could deposit honeydew, I made a cage for them, using a glass microscope slide for the bottom and two other slides for the sides. The ends were made of cardboard perforated with pin holes, for the admission of air, and in the same way a cover was made to fit the top. Then a number of insects—probably aphides—were collected from a Lime tree and put inside, and in a short time they had congregated on the under side of the cover. Within a few hours a great number of spots of honeydew were found on the glass slides, quite sufficient, in the short time, to account for the large quantity found on the leaves of trees. Thus it appears to me quite clear that honeydew is the excreta of insects. I may ask the question whether anyone has ever found honeydew upon trees that had no insects upon them.—R. IRWIN LYNCH.

#### HYBRID PERPETUAL ROSE A. K. WILLIAMS.

WHAT a great pity it is that this grand Rose, which is unquestionably the most perfectly formed and best crimson Rose yet introduced, should have baffled the skill of all the great rosarians to get it to succeed properly when it is transplanted from where it has grown since it was budded. Nevertheless, that it is a fact no one who has planted what are generally called maidens or one-year-old plants from the time of budding will question this statement, as so very many who have planted it must unfortunately be able to testify to their cost. I regret to say my experience as regards these failures is extensive. Out of sixty planted last November only three are now living, and these are small weakly plants. They were lifted and replanted immediately, and received every care and attention, side by side with many other varieties which are all succeeding well.

All who wish to grow successfully and exhibit this most beautiful crimson Rose, I would recommend to procure plants in what is termed

the dormant bud—that is, such as will be budded during this or next month. If these are procured and properly planted on carefully prepared ground about the end of next October they will do well, and will prove far more satisfactory than strong promising plants, even though they cost as much to procure as the strong plants would. Having once obtained a stock of it, the course then to be pursued is to have a few stocks of seedling Briar or Manetti—the former should be preferred—on which some should be budded each season. These stocks may be planted in their permanent positions, so that transplanting need not be found necessary.—ONE WHO KNOWS.

#### WARD'S PATENT TROUGHS FOR GRAPES.

ALL growers of Grapes are familiar with the many inconveniences attending the plan generally adopted for keeping Grapes after they are cut from the Vine—viz., keeping each bunch separate by inserting the end of the shoot in a bottle of water. Among these inconveniences may be mentioned the difficulty of fixing the bottle at such an inclination that the bunch of Grapes shall hang in its natural position (an essential point). Then the inclination of the bottle prevents

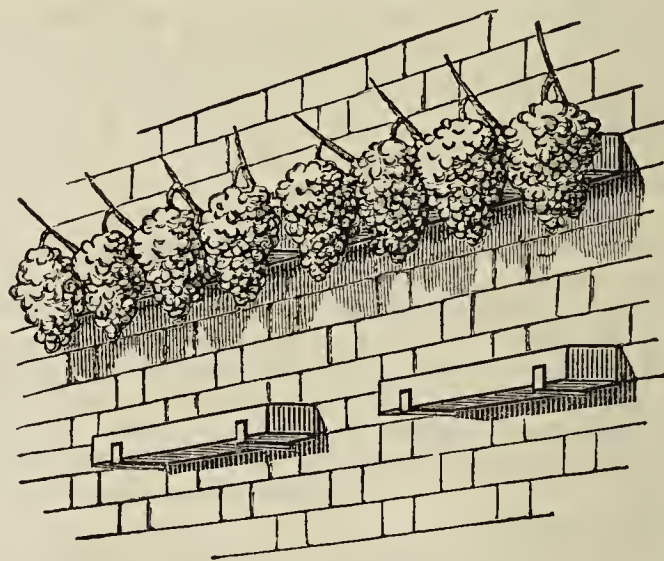


Fig. 11.

it being properly filled with water—the part of the bottle which remains empty being at its upper edge, the place where the end of the shoot is most likely to take its position; so that unless great care is exercised, and each bunch has a separate tie, the end of the shoot does not touch the water. The anxiety of the gardener to insure the shoot being in the water leads him to put so much water into the bottle that drip is the result, the water being drawn up by capillary attraction over the mouth, from whence it drips down on to the Grapes below with a fatal result. The difficulty of supplying the bottles with water without letting it run over. The difficulty of removing the Grapes for examination and replacing them. In fact, although if properly carried out, it answers the purpose, the “bottle” plan is about as inconvenient an expedient as could well be adopted.

We have much pleasure in bringing to the notice of our readers an invention patented by the well-known Grape-grower, Mr. George Ward

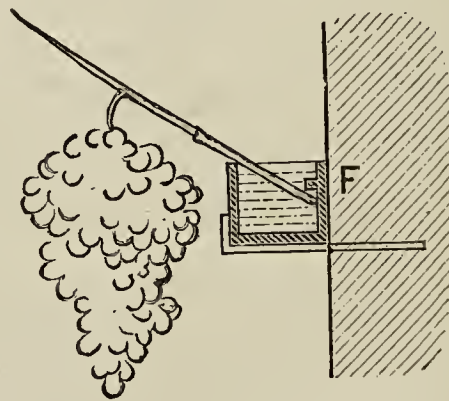


Fig. 12

of Bishop Stortford, which obviates all these inconveniences. The chief beauty of Mr. Ward's invention is its extreme simplicity.

Mr. Ward's troughs, which are oblong in shape, and about 17 inches long, are single (see figs. 11 and 12) and double (see figs. 13 and 14). They are made in glazed earthenware, which possesses the advantage of being non-porous, cleanly and cheap; but they could be made in many other materials. Each trough has a flange or ledge, F, against one of its sides in the single trough, and in the middle of the double trough. The manner of using them is as follows:—The trough is filled with water nearly up to the brim. The shoot bearing the bunch of Grapes is cut from the Vine sufficiently long to admit of the bunch hanging free of the trough in its natural position, while the end of the shoot is inserted under the ledge or flange F. The bunch of Grapes, having been thus placed, remains in the



same position until removed. The shoot acts as a lever working on the edge of the trough as a fulcrum; the weight of the Grapes thus presses the end of the shoot firmly up against the ledge or flange F, and the bunch then holds itself in position without any tying or fastening whatever. The following are some of the advantages:—The trough does not require to be tilted, and yet the Grapes hang in their natural position. The trough need not be brimfull, and yet there is no danger of the end of the shoot being out of the water. The trough contains enough water for a month and keeps sweet. There is no danger of any drip. Water can be supplied to the troughs without disturbing the Grapes. No tying or fastening of any kind is required, and each separate bunch may at pleasure be easily lifted out of the trough for examination, and as easily replaced.

The single troughs are for placing against a wall in tiers about 13 inches, one above the other. They are supported on L-shaped iron holdfasts, which hold them firmly in position, but admit of their being lifted off at pleasure. The troughs are not placed close up end to end, but about 7 inches apart. There is no advantage in placing them close, for if a shoot be put at the extreme end of each another shoot could not in any ease be put in between. Fig. 11 shows the appearance on the wall. Fig. 12 shows to a larger scale a section through a single trough.

The double troughs are for placing in tiers on stands specially

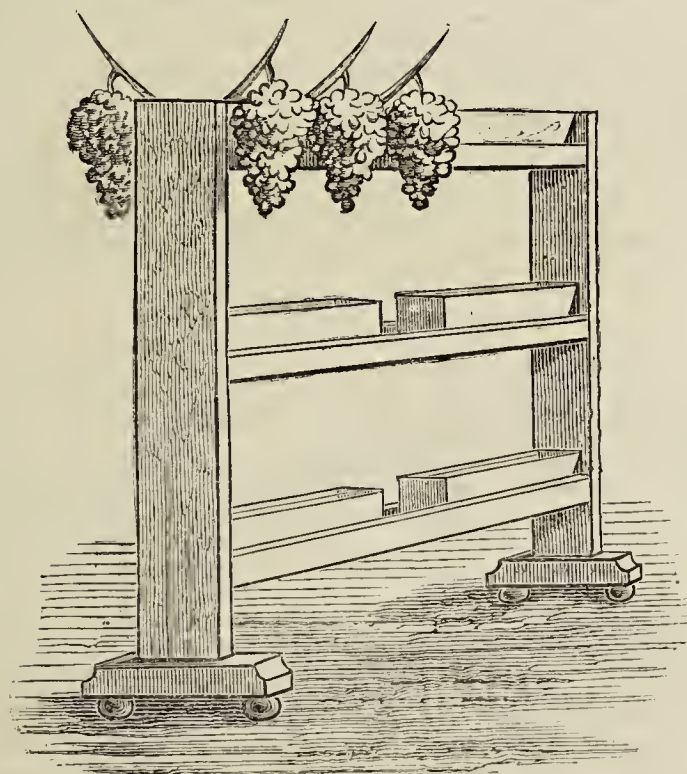


Fig. 13.

constructed for the purpose, and stood in convenient positions in the fruit or store room. The stands can be made any length, and in any number of tiers. Each shelf s (see fig. 14) is made with a ledge L L, on each side, so as to hold the trough in position. Fig. 13 gives a view of the stand and troughs, and fig. 14 shows a larger scale-section through one shelf and trough. Mr. Ward has had the troughs in use from the beginning of the year; 800 lbs. of Grapes cut in January kept till April 7th. They were seen in operation, and received the approval of many practical gardeners.

### THE CRANESBILLS.

THE family of Cranesbills (Geraniums) as distinguished from the so-called Geraniums used in summer bedding constitute a large group of hardy herbaceous plants. Unlike many other hardy plants they are far from fastidious either as regards soil or situation, indeed the majority have no particular preference. In very small gardens, however, where only a limited space can be allowed each plant, and where also it is necessary to guard against overcroding, a light and if possible a sandy soil will be found the most suitable, as from their tendency to a robust habit when grown in too rich a soil, and where they become more and more troublesome as the clumps enlarge, in a light soil the tendency is quite the reverse, resulting in a greater profusion of flowers.

Lifting and trimming the roots every second or third year has and still is recommended for success with these plants; but I find that the difference between the results of lifting and leaving them alone is so small that it does not compensate for the time and labour lost in the process. For rustic places and rooteries Geraniums are eminently suited. Allowed to scramble in a semi-wild condition, which their free-growing habit allows them readily and naturally to do, the effect is simply charming, for to see them in all their beauty they must not in any way be crowded with other stronger-growing plants. On the summits of rockeries and in such places where colour is desired a few of

the stronger-growing sorts will be found very suitable, nor should they be left out of the mixed flower border, especially the dwarf and neat-habited sorts. *G. striatum* and *G. sanguineum*, for instance, may be used very effectively near the front, and as they are early summer flowering plants they help to lighten the border before the annuals and late-flowering plants have commenced.

They are generally propagated by division of the roots in autumn and after flowering; but where a large stock of any particular kind is wanted seed, which ripens freely, should be

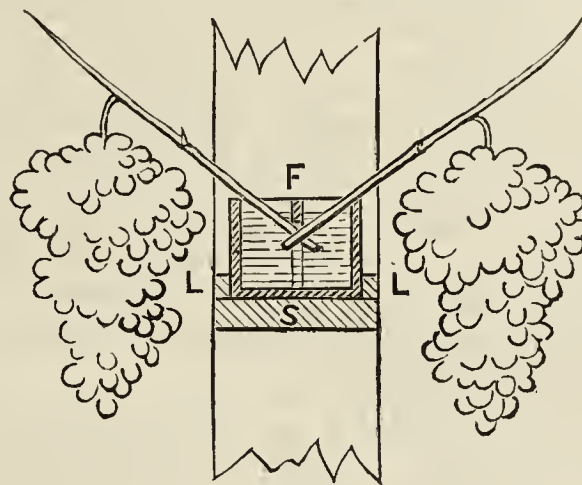


Fig. 14.

resorted to, and not much time will be lost, as they will be ready for planting the second year. As the seeds do not all ripen together, and as they have a tendency to fall as soon as ripe, a visit should be paid to the plants daily. They may be sown in pots and placed in an ordinary cold frame. The following are a few of the best and showiest species.

*G. ARMENUM*.—This should find a place in every garden, for although it belongs to the coarse-growing section it may be easily kept within bounds, and be none the worse for a little judicious trimming. Easily established, it will grow almost anywhere without any trouble. It is about 18 inches in height, and is clothed with abundance of beautiful light green leaves, which are slightly overtopped by the elegant large bright purplish flowers, which are rendered very attractive from having a large dark spot at the base of each petal; they are about the size of a florin and are produced freely.

*G. PRATENSE*.—Although rather straggly-habited this and its varieties are useful garden plants, and may be effectively used as a groundwork for tall-growing plants. The varieties *album*, *pallidum*, and the double blue are all worthy of commendation, the two former especially; they have the advantage of lasting after being cut longer than the others, and thereby rendered useful for cutting. The leaves are deeply cut into seven acute divisions, those again being cut. They flower in June and July. Natives of Britain.

*G. CINEREUM*.—A small and very beautiful rockwork species, about 6 inches high and much in the way of *G. argenteum*. The leaves are lobed about half way down and are covered with short silky hairs. The flowers are of a pale pinkish colour, and finely pencilled or marked with red, which shows the flower to advantage. Flowers during the summer months. It should be planted in a rather dry situation.

*G. GREVILLEANUM*.—Probably this is better known as *G. Lamberti*. It is a magnified *G. cinereum*, with less bright flowers. It grows between 1 and 2 feet high, and is extremely free-flowering. Native of the Himalayas.

*G. POLYANTHOS*.—A very pretty dwarf-growing species, with large tuberous roots; deciduous in winter. The leaves, which are nearly round, appear to be subpeltate, deeply lobed, bright green, with purple margins. The flowers are borne in small heads at the extremity of the stalks, bright satiny purple with a white eye, pencilled with darker lines. They are the size of a shilling and very handsome. Flowers July and August; not hardy unless in favoured positions.

*G. STRIATUM*.—A very handsome species, very suitable for mixed borders, and although pretty well known is rarely cultivated as its beauty warrants. It is of a dwarf compact habit, hardly a foot in height, with bright green leaves, the lower much more deeply divided than the upper. The flowers are ashy white, and are pencilled with delicate rosy lines—a charming contrast. They are borne two or three together. In flower nearly all the summer.

*G. SANGUINEUM*.—It would be unfair to leave out this,



although common, beautiful and free-flowering Geranium. The variety *Lancastriense* with its salmon-coloured flowers is a charming plant, and should be in every collection. Among others may be mentioned *G. Endressi* and *G. Londerii*, pink-coloured; *G. eriostemon*, *G. ibericum*, *G. Wallichianum*, *G. macrorhizum*, and *G. gracile*.—M. S.

#### ROOT-BOUND CHRYSANTHEMUMS.

ON page 25 of this Journal Mr. W. J. Murphy seems to be puzzled with regard to root-bound Chrysanthemums. In the first place, March is early enough to propagate. Unless large specimens are required these must be struck as early as the cuttings can be obtained. The plants your correspondent refers to were evidently pushed on too early in the season; consequently the soil becomes impoverished before the time the plants really require much nourishment. The first week in July is quite early enough to place Chrysanthemums into their largest pots. If Mr. W. J. Murphy's friend has his plants in 10-inch pots I fail to see what more is required. I have seen fine specimens 4 and 5 feet across in less than those. In fact, 7-inch pots are quite large enough for Pompons; 8½-inch are equally so to accommodate the Japanese or incurved varieties. Unless, as I before said, they are required for exhibiting, the 8½-inch pots for Pompons and 11-inch pots for the other varieties are more suitable. No Chrysanthemums should become root-bound in the above-sized pots earlier than the middle of August.

Your correspondent refers to rooted side shoots being used for specimens, &c. I have never seen a good trained plant from these, but amongst our best growers north and south the above-mentioned are looked for with much care and anxiety; in fact, I know growers that wait until March for suckers in preference to trusting to side shoots from the old stem. Old roots are often shaken out and repotted, leaving the strongest shoot or break from the root, and I have seen the finest flowers of an old but fine variety (*Novelty*) produced from these plants. To conclude, I would recommend for furnishing purposes tops of strong suckers.—J. PITHERS, *Summerhill, Co. Meath*.

MR. MURPHY's friend is certainly in advance of his fellows by about five weeks. Are the plants really in 10-inch pots? If so, his friend has used what Mr. Murphy condemns—viz., rooted suckers, or what I prefer of all cuttings when I can get them. These cuttings have been taken and potted in November or December, pushed on in a warm house, receiving their final potting about May. This is a mistake. March would have been early enough to have started his stock, as he is restricted to size of pot; but with a 10-inch pot surely there should have been no mistake. Rooted suckers certainly make the finest plants, but whether cuttings are preferable to these in regard to the flowers is a matter of opinion. Mr. Murphy need have no fear about the flowering of his friend's plants, provided they are not allowed to become dry and stimulants are not used in excess. Were they in my charge I should at once turn them carefully out of their pots, take away the largest portion of the drainage, put the plant back again, and then press the soil firmly. While doing this the soil must not be too wet. Sprinkle evenly on the surface of the soil a teaspoonful of Clay's fertiliser, cover this with as much good loam and manure as can be conveniently placed into the pot, leaving sufficient room for watering. Use weak liquid manure three times a week until the buds form, afterwards oftener and stronger. In the selection of buds the crown buds must be taken; terminal shoots would be too weak to carry flowers, as half would not open.

The planting-out system that Mr. Murphy suggests may do very well for Pompons and a few free and early Japanese; but with the majority of Chrysanthemums to insure success and no check root-cutting would not have to be employed. A safe and simple plan I have adopted this season is when they receive their final potting to plant low in the pot. This allows room for several top-dressings, which, I think, is far better than so much drenching with liquid manure, often the cause of buds going blind. I do not condemn the use of this; far from it. Plants that are root-bound require and must have it; but with more frequent top-dressings and a judicious use of stimulants better results would be attained. Will Mr. Murphy kindly give me the names of the varieties that flowered with him under the treatment he describes on page 25?—C. WARING, *Liverpool*.

#### THE INTERNATIONAL FORESTRY EXHIBITION.

TIME for a very hasty run through the latest of special exhibitions could only be spared on a recent visit to Edinburgh, but sufficient was seen to show that the Scottish Arboricultural Society, to whom this Exhibition is due, has provided an assemblage of material connected with forestry which is of national importance. At present we can only give a general description of the building and some of its contents, but hope to return to the subject again and give notes on special subjects.

The building consists of a central nave 210 yards in length by 17 yards wide, and, as originally planned, three annexes on each side of the same width, and from end to end 100 yards. The northern series of annexes have, however, been joined together by a corridor running the entire length of the building, as the space required by exhibitors was found to be greater than at first had been expected. At the time of our visit in the second week of July, ten days after the Exhibition had been formally opened by the Marquis of Lothian, there remained much work to perform both in preparing tables and in laying out goods sent for exhibition.

Some of the most interesting exhibits will be found to be those from the colonies and from foreign countries. The Indian Government has sent a

series of special interest. As showing the wonderful rapidity of growth in tropical climates several canes of Bamboo are shown from Burmah, ranging from about 80 to 100 feet in length, each the result of one season's growth. Models of bamboo houses, baskets, &c., made from this useful Grass are also on exhibition. No fewer than 666 specimens of trees are shown, each kind valuable either on account of its qualities as a timber or for some product obtained therefrom. A very large variety of woodwork illustrative of the everyday life of East Indians is also on view. From Canada and New Brunswick many native woods are shown, also native Indian goods of much interest. The section of a trunk of a gigantic Californian Redwood with bark is very interesting to visitors. The tree from which these were obtained is said to have been about 2000 years of age, and contained some 6250 cubic feet of timber. The Manitoba Farmyard is also one of the "sights of the Show." The whole of the materials necessary to a settler going to the Far West are there shown—two-roomed cottage, tent, stable, sheds, household furniture, and farm implements, including an ancient-looking cart made entirely of wood with the exception of four rings of hoop iron which strengthen the nave of each wheel. Prices are also attached to each article as they are to be bought in Winnipeg. The examples of prairie hay are coarse but aromatic.

Among the foreign exhibitors the Maharajah of Johore has sent a very exhaustive series of the woods of his dominion, as well as the tools and other articles used in the timber trade. Norway, Sweden, and Denmark are each well represented. The processes by which wood is transformed from rough chips into bleached material ready for the paper maker, and the examples of paper manufactured from wood pulp, will doubtless attract the attention of many visitors. Germany has also examples of the same industry. What are known as the soda process, the sulphite process, and the less effective mode of preparing the wood without the aid of chemicals, are all shown. Japan arrived late at the Exhibition and had not yet unpacked, but one of the most interesting exhibits is expected from that country of wonderful people.

The Commissioners of Woods and Forests, the Epping Forest Commission, and the War Office contribute grand examples. The sections of trees as exhibited by the Government are got up in a manner very much in advance of those shown by private exhibitors. The private exhibitors number some 500, some of whom show articles the relation of which to forestry is very remote. We noted a grand collection of tools from Messrs. R. Sorby & Sons, Sheffield; Taylor Brothers, Sheffield, also showing the same kind of articles, but not of such a wide interest as those of the Messrs. Sorby. Collections of tree seeds and cones, dried foliage of forest trees, &c., are shown by several exhibitors. Messrs. J. Veitch & Sons, Chelsea; Little and Ballantyne, Carlisle; Sutton & Sons, Reading, and several private exhibitors are to be found among these.

The Scottish Arboricultural Society has gathered from all parts of the country a great variety of forestry produce—examples of timber, different modes of farming in various districts, foresters' tools, examples of the handiwork of foresters in producing ornamental rustic bridges, arbours, albums composed of wood, a harmonium constructed of home-grown oak, &c.

A space out of doors about eight acres in extent is set apart to nurserymen, hothouse builders, implement makers, saw mills, &c. We can only state here that the Lawson Seed and Nursery Company; Messrs. Veitch and Sons, Chelsea; Stuart & Mein, Kelso; Little & Ballantyne, Carlisle; James Dickson & Sons, Chester; Ireland & Thomson, Edinburgh; Austin and McAslan, Glasgow; Methven & Son, Edinburgh; Lamont, Edinburgh; Fraser, Edinburgh; Benj., Reid, & Co., Aberdeen; Palmer & Son, Annan, are all represented. Messrs. McKenzie & Moncur show a pretty example of a conservatory constructed of woods adapted for that purpose. Other hothouse builders were busy getting examples ready for inspection. We hope to return shortly and make special notes of these and other matters in connection with this great Exhibition. Gardeners passing through Edinburgh certainly ought to visit the "Forestry," the nearest N.B. station being the Haymarket, and, on the Caledonian, Murrayfield.

#### ANEMONES.

(Continued from page 30.)

##### JAPONICA SECTION.

THIS, although containing one species and its varieties, is yet probably as well known and appreciated as any, probably owing to their flowering at a season when they are especially welcome—viz., in autumn, when their red or white blooms form an agreeable change from the monotony of the Composites which form the chief feature in the borders at that season.

*A. japonica*.—A vigorous-growing plant having large ternate unequally lobed leaves, somewhat resembling those of a Grape Vine in general appearance, somewhat downy, and often remaining during mild winters untouched. The flowers, which are borne on long footstalks, spring from a whorl of three or four leaves on a stem about 2 feet in height, are produced in autumn, and if frost does not set in may be obtained in profusion until nearly Christmas. They are of a rich carmine colour within and rose without, with a conspicuous tuft of golden anthers. This plant and its varieties may be grown anywhere, in fact in some soils it increases rather too freely from suckers. It would make a capital plant for naturalisation in the pleasure ground, as it is certainly capable of holding its own ground against almost all comers.

*A. japonica alba*.—This, also known as *Honorine Jobert*, ought certainly to be crowned queen of the autumn border flowers. Fortunately it is now well known, and it is not easy to give an adequate description of the beauty, grace, and utility of this truly grand plant. It resembles the species in all points save the colour of the flowers, which is pure white, and in being of a rather more robust habit of growth.

*A. japonica rosea* (syns. *A. japonica hybrida* and *A. elegans*).—A well-marked form, differing chiefly by its greater height and more robust habit, larger flowers of an agreeable shade of pale rose, and in being altogether less downy than the species.

There is also another plant said to be closely allied to *A. japonica*, con-



cerning which there seems to be some confusion amongst growers of these plants—viz., *A. vitifolia*. Mr. Ware in a catalogue gives *Honorine Jobert* as a synonym, while Messrs. Backhouse credit it with being the same as *A. japonica rosea*. Mr. Robinson, on the other hand, in "Hardy Flowers," page 58, describes a totally different plant less than a foot high, white, and summer-flowering. When doctors differ who shall decide? It is certain that Buchanan described a white-flowered species under this title which he found in Nepal about 1830. I have been informed that the true plant is now growing in the Cambridge Botanic Garden under the care of Mr. Lynch, who might possibly favour the readers of the Journal with some information respecting it.

#### THALICTROIDES SECTION.

This includes a most singular and distinct little plant and its double form, which is found in profusion in many parts of North America, chiefly in moist woods.

*A. thalictroides*, L. (syn. *Thalictrum anemonoides*, Mx.).—A very elegant little plant with leaves on long stalks, bi or triternate; the leaflets blunt, slightly trilobate. The floral leaves usually three, wedge-shaped, petiolate. The flowers, which are freely produced in April and May, are pure white, from half an inch to 1 inch across, with yellowish stamens; and although the flowers are decidedly those of an *Anemone*, yet the general appearance of the plant is more suggestive of an *Isopyrum*.

*A. thalictroides* fl. pl.—At present this is rather rare in cultivation, but is well worthy of attention, the full double white flowers resembling those of the Fair Maid of France (*Ranunculus aconitifolius* fl. pl.). Both of these should be grown in a soil consisting of sandy loam or peat in a half-shady position, where they can be kept moist, but at the same time well drained. It may be as well to mention that established plants bloom much more freely and bear larger flowers than those recently planted.

The section *Hepatica* has already been made the subject of a separate paper this spring, so need not be farther dealt with here.—G. GUTHRIE.

#### STRIKING CUTTINGS.

At this time, though the practice is not general, cuttings of many hardy plants may be taken and struck more advantageously than at any other season. I am writing from the northern part of Great Britain, and this remark may require to be modified to suit the southern districts, but allowing a little for latitude the practice of propagating in summer rather than during the autumn months I consider to be one worthy of more attention than it receives. We can point to cuttings of a better quality being procurable now, to the emission of roots being more rapid and certain, and to the plants being much stronger and more floriferous the ensuing season, as the direct results of summer propagation. The plants that come more directly under this head are Dahlias, Phloxes of the finest type, Pentstemons, Pansies, Hollyhocks, Verbenas, Pinks, Mule Pinks, and any hardy plants best kept going from young plants, such as the old double Wallflowers, Rockets, &c. Roses strike well from cuttings just at this time.

As to the mode of managing cuttings now, the very easiest and at the same time the most certain way of securing good strikes is to set an ordinary wooden frame on a hard bottom. Cover that bottom with 2 or 3 inches in depth of light sandy soil, give a watering if the soil is inclined to dryness, and then in the course of a few hours dibble-in the cuttings. Short-growing points make much the best cuttings in most cases, but if at this time in addition to the qualification of shortness the cutting can be had with just a little of the old stem attached the result will be all the better. Pansies can generally be had with a piece of root showing. Phloxes and Pinks must be struck without the heel, and Hollyhocks are best cut into eyes, each with a leaf attached. Cuttings are much better inserted in the frame towards evening. With care as to shading and moisture there is no fear of the cuttings flagging, as they are almost certain to do so if put in earlier in the day.

The after management consists in either potting the plants as in the case of Dahlias, Hollyhocks, Verbenas, and Pentstemons, or in transplanting them into beds of prepared soil, from which they can be readily lifted when strong enough, and planted where they are to flower.—B.



At a general meeting of the ROYAL HORTICULTURAL SOCIETY held on Tuesday, Dr. Hogg in the chair, the following candidates were unanimously elected Fellows—viz., C. H. M. A. Alderson, P. Burrows, G. Gardner, and William Rippin.

— A BEAUTIFUL ROSE SHOW was held at the Mansion House, London, on Thursday the 17th inst., the funds derived from the admission fees and the sale of Roses being devoted to the Royal Hospital for Women and Children, Waterloo Road. A great number of blooms were shown by the principal nurserymen who make a speciality of Roses, and

some of the leading amateur growers also contributed collections, a few classes being provided for them. The exhibits were tastefully arranged, and produced a charming effect.

— WE are desired to notify that the annual simultaneous collection in aid of the Pension Augmentation Fund of the GARDENERS' ROYAL BENEVOLENT INSTITUTION will take place on Monday the 28th inst. Mr. Cutler states that "collecting cards have been issued to every gardener whose name is in the horticultural directories, and if any gardener who may be disposed to assist the Committee, and who has not received a card, will apply to me, I will send him one by return of post. It has been determined by the Committee that the collection shall cease on the 30th November next. An appeal from the Committee to all the nursery, seedsmen, &c., throughout the United Kingdom has also been made. The Committee earnestly hope that the gardeners of England will cheerfully respond to their endeavours to raise the pensions of the Society."

— BUTTERFLIES AS BOTANISTS.—Fritz Müller, Blumenau, Santa Catharina, Brazil, writing in *Nature*, observes, "The caterpillars of *Mechanitis*, *Dircenna*, *Ceratinia*, and *Ithonia* feed on different species of *Solanaceæ* (*Solanum*, *Cyphomandra*, *Bassovia*, *Cestrum*), those of the allied genus *Thyridia* on *Brunfelsia*. Now this latter genus of plants had been placed unanimously among the *Scrophularinææ*, till quite recently it was transferred by Bentham and Hooker to the *Solanaceæ*. Thus it appears that butterflies had recognised the true affinity of *Brunfelsia* long before botanists did so. There is yet another and more curious instance of our butterflies confirming the arrangement of plants in Bentham and Hooker's 'Genera Plantarum.' *Ageronia* and *Didonis* were formerly widely separated by lepidopterists, being even considered as constituting distinct families, but now they are to be found beside one another among the *Nymphalinaæ*, and the structure of their caterpillars leaves no doubt about their close affinity. The caterpillars of *Ageronia* feed on *Dalechampia*, those of *Didonis* on *Tragia*. Now these two *Euphorbiaceæ* genera were widely separated by Endlicher, who placed the former among the *Euphorbiææ*, the latter among the *Acalypheææ*; Bentham and Hooker, on the contrary, place them close together in the same sub-tribe of *Plukenetieææ*, and thus their close affinity, which had been duly appreciated by butterflies, has finally been recognised by botanists also."

— WE have received samples of a Pea called PERFECT MARROW from Mr. House of Peterborough. It is said to have been produced by crossing *Ne Plus Ultra* with *Champion of England*. It is impossible for us to form an opinion as to its identification without seeing it growing; but the pods have a strong resemblance to the true *Ne Plus Ultra*, than which there is no better second early Pea. When cooked we found it tender and sweet, and quite the character of *Ne Plus Ultra*. We have also had a similar, if not the identical, Pea sent by Mr. Richard Gilbert of Burghley under the name of his selected GATEHOUSE RIVAL Pea; and both are, we believe, identical with one sent us last year by Mr. Hutchinson.

— THE ESSEX FIELD CLUB will hold a Field Meeting at Colchester and Mersea Island, on Monday, August 4th. This will be the first visit of the Club to the interesting town of Colchester, and members are specially requested to do all in their power, by attendance and otherwise, to insure the success of the meeting. Members and friends from London will travel by the 9.3 A.M. train from Liverpool Street, arriving at Colchester at 10.42. The party will assemble in the Keep of Colchester Castle at about 11 o'clock, under the guidance of the Rev. C. L. Acland, M.A. (Hon. Curator, Essex Archæological Society), and Mr. J. Horace Round. Luncheon will be taken at the "Cups Hotel," at twelve o'clock, and the party will then be driven by way of Abberton and Peldon, to the "Stroud," a raised causeway across the Pyefleet Creek, which separates Mersea from the mainland. The party will then move eastward along the coast to the "Decoy" for wild fowl, the working of which will be explained by Mr. Laver. Driving homeward about 4.30, the party will stop for a short time at Barrow Hill, where the Rev. C. L. Acland will call attention to the red-earth mounds so frequent in the marshes on the Essex and Suffolk coast. On returning to the town a visit will be made to St. Botolph's Priory, under the guidance of the Rev. C. L. Acland, and to the Roman walls and gateway, with Mr. J. Horace Round as *cicerone*. Tea will be taken at the "Cups Hotel," about 7 P.M. After which a *conversazione* will be held in the large room of the Inn, when various objects of natural history, antiquities, &c., will be exhibited



by members and townsfolk. New members may be proposed at this meeting. Those wishing to return to London on the Monday night will leave Colchester by the 9.9 express, which is timed to arrive at Liverpool Street at 10.25. Tickets—The charge for tickets (including luncheon, seat in conveyance, tea and incidental expenses) will be:—Members, 7s. 6d.; Non-Members, 8s. 6d. Application for tickets must be made not later than July 28th, to Mr. B. G. Cole, Laurel Cottage, Buckhurst Hill, Essex, or to Mr. J. C. Shenstone, High Street, Colchester.

— MR. A. MOTTISHEAD, gardener to W. Brockbank, Esq., Brockhurst, Didsbury, writes as follows in the *Manchester City News* respecting *AJUGA BROCKBANKII*:—"Ajuga Brockbankii originated as a chance seedling in the borders at Brockhurst about eight years ago, the other plants growing near it being *A. genevensis* and *A. pyramidalis*. Therefore it was considered to be a hybrid between the two, having the habit of the latter, with the colour given to it by the former. It was exhibited the following year at the Whitsuntide Show under the name of *A. pyramidalis*, having had no other name attached to it. The judges crossed the name 'pyramidalis' out, and wrote 'alpina' in its stead. The year following it was exhibited under the name *Alpina hybrida*, when it attracted the notice of Messrs. Roger M'Clelland & Co., Newry. Plants were sent to them, and they are the authors of the name attached to it now. It was sent out by them in 1881 as *Ajuga Brockbankii*, without Mr. Brockbank's consent or knowledge that it was to be called so. In Messrs. Paul & Son's catalogue for this year we find it named *A. alpina Brockbankii*, and described as a new and very desirable flowering plant with deep blue flowers."

— THE WHITE FRINGE PLANT.—In America this is the popular name of *Chionanthus virginica*, which, it is said, is now becoming a great favourite in gardens. It is a rather attractive shrub, with abundant white flowers, but though its appearance in this country dates from 1736, it is not very common in English gardens.

— STRAWBERRY HELENA GLOEDE.—Mr. A. Young writes:—"A very favourable account of the above Strawberry is given in page 42. I have seen it with all the qualities therein stated, but it was very deficient in flavour, in fact it was the most 'sickly' Strawberry I ever tasted. What is the experience of others concerning its flavour?"

— VORACITY OF THE DROSERA.—I am not aware that the *Drosera* has been noticed to capture so large an insect as the dragon fly (*Pyrhosphoma minium*). Passing a pond side on a bright June morning, where this insect was flying plentifully, and near which *Drosera rotundifolia* was growing in abundance, I saw that many of these insects had fallen victims to the carnivorous propensities of the plant. On one spot about 1 foot square I counted six plants which had captured specimens of the Dragon fly, besides smaller insects. One plant had possessed itself of two of the dragon flies, one being partially digested and the other freshly caught. The *Drosera* plants, being young, were in many instances less in expanse than the dragon flies caught upon them, which measure about 2 inches across the wings, with a body about 1½ inch long. The dragon flies appear to be attracted to the plants by the reflected sunlight glistening upon the beads of fluid secreted from the leaves, and from which the plant receives its common name of "Sun-dew." Those dragon flies which I saw caught hovered over the plants about a second, at a distance of 3 or 4 feet, and then darted upon the plant, when they were instantly caught. —A. BALDING (in *Nature*).

— ERRATUM.—In the article on "Filmy Ferns," page 47, the size of the cases is misprinted 50 inches square; it should be 15 inches.

#### BEDFORD HORTICULTURAL SOCIETY.

THE horticultural county of Bedford has not for some years had an opportunity of displaying in the county town the products of its local industry, a former society having become defunct so long ago as 1879. On Wednesday last, however, mainly owing to the interest taken in the prosperity of the town of Bedford by the Worshipful the Mayor (J. Hawkins, Esq.) and to the horticultural tastes and zeal of that gentleman, Mr. J. S. Clarke of the London Road, and a few other inhabitants, a successful resuscitation was inaugurated; and although open classes were afforded for Roses and herbaceous plants only, it is to be hoped that the encouragement given to the Committee in this direction will result in further liberality on a future occasion, and that Bedford, so centrally and conveniently situated for an important exhibition, will not be narrow and exclusive in its efforts; for, although an attractive and generally successful Exhibition as a first attempt has to be recorded, there was but weak competition in most of the local classes, the exhibits being confined to the county. The vegetable department was, however, a notable exception. The Show was held in a pretty and convenient ground on the Bromham Road, and as the weather was favourable the Committee will doubtless be

able to report a financial success. The number of classes was large, and as it was difficult to ascertain the names of the exhibitors from their specimens, we can do but little honour to the individual winners.

In the open class for forty-eight cut Roses Mr. F. Cant of Colchester staged some fine blooms, chiefly darks, including Duke of Connaught, Reynolds Hole, Prince Arthur (a splendid and reliable Rose), Comtesse de Paris, Etienne Levet, Dupuy Jamain, Dr. Sewell, Pride of Waltham, Merveille de Lyon, and Gabriel Luizet. Messrs. G. Paul & Son of Cheshunt, who were also fighting the same day in northern lands, came well in as second, having good flowers of Xavier Olibo, Ulrich Brunner (fine but somewhat thin), Marie Verdier, Marguerite de St. Amand, and a better proportion of lights. Mr. J. Mayo, Oxford, was third. For the twenty-four cut blooms open to all amateurs, Mr. J. L. Curtis of Chatteris was first with very fresh flowers, and the Rev. W. H. Jackson of Stagsden Vicarage second.

For twelve blooms open to all amateurs Mr. Jackson was placed first, Mr. Curtis second, and the Rev. F. F. Lambert, Baldock, third. For the open prizes for hardy herbaceous cut flowers Messrs. G. Paul & Son, who had a large and attractive collection, were first; and Mr. Laxton of Bedford, who had a smaller but a very choice and bright stand from the Girtford Gardens, second; and Mr. E. Horton, Bedford, third. In the local classes for Roses, twenty-four and twelve blooms, and for twelve Teas, the Rev. W. H. Jackson took the chief prizes, there being but a very limited competition. The largest and most successful exhibits of plants were from the gardens of E. Manson, Esq.; F. Howard, Esq., of Bedford; Miss Rice-Trevor, of Bromham Hall; and H. Thornton, Esq., of Kempston Grange. The local nurserymen, Mr. J. C. Sheppard and Mr. Horton, also contributed effectively to the display. Vegetables, especially Peas, were very finely shown by Mr. Waller, gardener to Jas. Howard, Esq., M.P.; Mr. Vine, gardener to Mr. Thornton; and Mr. Ellis, gardener to Mrs. Orr, Pemberley House, Bedford. The show of fruit was only a meagre one, but good Grapes were staged by Mr. Wilson, gardener at Pavenham Bury; and by Mr. Allis, gardener to Major Shuttleworth, Old Warden—the latter not for competition—Mr. W. Galloway of Bromham Hall Gardens taking first for a collection of fruit. The Committee and officials all worked with zeal and a good will, and the results are such as to encourage them to continue their efforts.

#### THE RESULTS OF PRUNING ROSES.

Most readers of the Journal will have noticed questions being raised in the early months of the present year as to the best time to prune Roses. Roses were then making rapid growth when they should have been at rest, and many amateurs were thinking that if their trees were not pruned at that time the result would be a weakly growth, and consequently a poor "bloom." I think the present would be the most fitting time to discuss "early versus late pruning." The following is my experience this season:—1, Early-pruned Roses, imperfect bloom and growth. 2, Late-pruned Roses, and which were pruned between the 20th and 25th of April, capital bloom and good growth. The top shoots of latter were several inches in length when pruned; the bottom buds were quite dormant, and they were so long in starting into growth that I thought I had pruned too late, but when they did break they grew away freely, and far out-distanced the early-pruned Roses by producing earlier and better blooms and much better growth.—S. W.

#### MELON PLANTS DECAYING.

ON page 6 Mr. Iggulden alludes to this subject in the hope of gaining information that may prove beneficial in assisting him to overcome the ravages of the disease which attacks his Melons. It may be some consolation to your correspondent to know that I have been battling with the same disease for the past seven years, and only this year found out its cause, and consequently a remedy which I hope will prove useful to readers of this Journal. It is pleasing to achieve success with all we take in hand, but I am convinced that we do not learn half so many valuable lessons from an unbroken course of successes as we do from failures. When failure overtakes any crop we generally apply ourselves with energy and diligence to find out the cause, which when once determined is sure in the end to lead to success. The record of success almost continually goes a long way to dishearten the young gardener when failure overtakes some important crop; but this is not always due to inexperience or even convenience, but often from not considering at the outset the surroundings of the house in which the crop or plants have to be grown.

The decay of Melon plants, to which allusion has been made, is entirely distinct from canker, and never during the period it troubled us here did a single plant collapse by being attacked at the collar. They frequently decay half way up the stem, often 3 or 4 feet from the soil, and generally between two joints. This disease has been so bad here that we were afraid to remove a leaf or even stop and thin out the shoots after the crop was set and swelling, unless removed with the point of a knife when very small, so as to cause no wound. The removal of a leaf by accident when watering or supporting the fruit has often resulted in decay setting in and the death of the plants in a few hours. This was frequently the case with plants that had not been touched with the knife, and which but a short space of time before appeared perfectly healthy. The production of Melons through this disease gave me more care and anxiety than anything else under my charge. To maintain a continual supply a stock of young plants in various stages had to be kept on hand ready for planting out as soon as one died. This was by no means the only precaution that had to be taken, for some varieties were more liable to be attacked than others; therefore some of the very best had to be discarded, and those only grown with constitutions which enabled them to resist the disease. The stronger and more robust the plants grew the sooner they succumbed to the disease, and this led me to believe that if the plants were checked so



as to get their stems firm and woody they would resist its ravages, but this did not prove effectual. It would be useless to detail the many experiments tried in growing the plants. Nearly every conceivable mixture of soil was used, the watering was done with the greatest care, and the house ventilated on several different principles, but every attempt to grow the plants free from disease ended in failure.

The difficulty experienced in finding the cause of this disease was intensified by the mysterious manner in which the plants were attacked and totally destroyed in a few hours. Although the effects of the disease are only outwardly visible when the plants flag and are decayed through the stem, it became apparent to me that the work of destruction was going on long before its effects were outwardly visible. This I discovered by severing the stem and examining the tissues minutely with a glass. I further observed that the disease was worse during sunless weather than during the time the atmosphere was bright and dry. This at once led me to the cause of the disease, and a remedy was applied which proved effectual.

The disease I had looked upon as so terrible and destructive was, like many other diseases, brought about by the system of cultivation we had pursued. I had not taken into consideration the house and its surroundings, which in our case was the cause of failure. The house is very wide, low, flat in the roof, and surrounded at a short distance with forest trees; consequently the atmospheric conditions of the structure internally were too moist and the temperature maintained from fire heat too low, which in a more suitable structure would have been sufficiently high. The temperature of the house was raised 5° at night, by which means a warmer drier atmosphere was maintained, and the decay which caused our plants to collapse so suddenly at once disappeared.—WILLIAM BARDNEY.

#### BENNETT'S SAFETY LIGATURE.

THE most useful appliances are of the simplest, and this ligature is certainly both simple, safe, and useful. So simple is it that one wonders

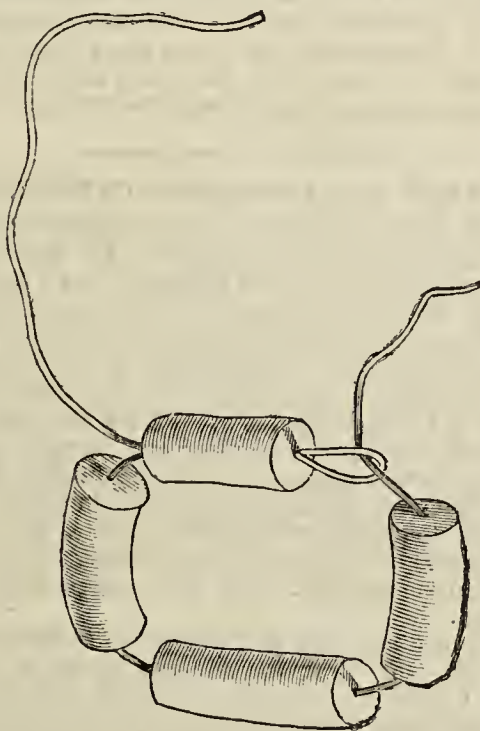


Fig. 15.—Bennett's Safety Ligature.

why the plan of sliding short thick gutta percha tubes on wire for placing round trees was not thought of before. The ligature possesses the three desirable properties of being soft, firm yet yielding, and durable, and its use is well calculated to prevent the abrasion of the bark of Roses and fruit trees, which are so often injured by unprotected wire.

The patentee, Mr. W. E. Bennett, Conover, Shrewsbury, writes concerning it:—"Enclosed is one of my patent Rose and fruit ties, by which you will see that my object is to prevent the trees from being damaged by rubbing against the stakes or otherwise, as the part of wire that surrounds the tree is covered with indiarubber, as also is the part between the tree and the stake, while the part uncovered is round the stake only; and each end being passed through the loop and twisted, it is quickly fixed or removed, and it is also very durable. The one enclosed is one of the smallest, and suitable for Roses with iron stakes. Please give me your opinion of it."

The illustration (fig. 15) shows the form and mode of employing this very useful little contrivance.

THE AUSTRALIAN TOBACCO INDUSTRY. — In a recent work on "The Industries of New South Wales," the writer says:—"Tobacco manufacture is increasing, and each year a larger quantity of the leaf is grown. Successful cultivation of tobacco depends greatly upon the

seasons, but generally speaking it is attended with no difficulty beyond the occasional appearance during or after wet seasons of a blight called "blue mould," which affects the plants as rust injures Wheat, and sometimes rather seriously reduces the yield of good leaf from the crop. The industry is too young, and the experiments made in the way of testing the suitableness of the soil for the growth of the tobacco plant not numerous nor extensive enough to enable a proper comparison to be made between the colony and America as tobacco-producing countries; but both the amount of production and the quality of the leaf grown could be greatly improved if farmers were to give the matter more attention than they do. The method of drying and curing the leaf is very primitive on most of the farms, and this interferes more or less with the manufacture of the leaf into tobacco or cigars. Very few cigars are made, but tobacco, in which the colonial leaf is the principal ingredient, is manufactured in large quantities and meets with a ready sale. The general mode of preparing it for consumption is to mix it with a little of the best American leaf, and in that form it appears to be well liked."

#### HISTORICAL JOTTINGS ON VEGETABLES.

##### SPINACH, SKIRRET, AND SALSIFY.

THE name Spinach was formerly spelt "Spinnage." It is clearly derived from the Latin *Spinacia*, which, however, is a barbarous word, and there is no evidence that the Romans or the Greeks were cultivators of this vegetable, or that they gathered it wild, at least no allusion can be traced that applies to it; but the ancients certainly used for salads some of the plants of the order *Chenopodiaceæ*, in which Spinach is placed; and *Spinacia* must have been formed from *spina*, a prickle, referring to the prickly integument of the fruit and the bristleness of the old leaves in some varieties. One of the *Chenopods*, still eaten in some counties, and which is mentioned by writers early in the Christian era, is a species somewhat rich in quaint vernacular names, such as Good King Henry, Lamb's Quarters, Mercury Goosefoot (*C. Bonus Henricus*). Its regal appellation is perhaps connected with Henry IV. of France, more probably with our Henry VI., who was styled "good" by the monks for his many acts of beneficence. The French also eat the leaves and use them for poultices; in fact the medicinal repute of this common plant can be traced back to the days of Galen, who stated that it would abate swellings, and in more modern times Culpepper recommended the juice as an exterminator of warts. It would appear that the ancients when preparing this for the table selected the young shoots, which were stripped of their leaves and peeled.

Botanical authorities cannot ascertain positively whether the garden Spinach is a true native of Europe or an Asiatic plant. Several of the old herbalists call it *Atriplex hispaniensis*, and assume that Spain is its habitat; but Miller thinks the Spaniards received the plant from their Moorish visitors. Beckman has detected the name in a list of vegetables dated 1351, these being plants cultivated in some monastery garden, for the monks were fond of horticulture, and not unskilful in it either. Spinach was introduced into England about the middle of the sixteenth century, from France or Holland probably, and Gerard's remarks upon it would imply that at first the young leaves were eaten green, and this continued to be the practice through the reigns of Elizabeth and James. But in the next reign there had come a change, for then Parkinson writes—"Spinach is an herb for salad and divers other purposes for the table only, as it is not known to be used physically at all. Many English that have learned it of the Dutch people do stew it in a pot or pipkin without any moisture than its own. It is used likewise to be made into tarts and many other varieties of dishes, as gentlewomen and their cooks can better tell than myself." In fact, Spinach became a favourite article for the table through the greater part of the year, and it was specially eaten with lamb during the spring, but its admixture in tarts seems to have been only an experiment. Others at a rather later period came to the conclusion that Spinach might be used "physically." They squeezed out the juice and gave it to relieve inflammation and hoarseness.

For many years Spinach was chiefly grown in the gardens of the nobility and gentry; afterwards, when the increasing population of London led to a demand for choice vegetables, it was cultivated by the market gardeners, but not to the extent which other plants were, from which a quicker profit was obtainable. A good deal used to be sent to market at one time from the neighbourhood of Fulham and Hammersmith: to save space it was often sown between the rows of Beans, Cabbages, and Cauliflowers. Abercrombie notices the prickly seed kind, which some of his friends grew because it yielded a winter supply of Spinach, also the smooth-leaved variety, and a French sort with thick leaves, which he commends. He must also have known, though



he does not refer to it in his books, what was called New Zealand Spinach (*Tetraginia expansa*), which was brought to Britain from New Zealand and Tingataboo by Sir J. Banks in 1772, but not eaten by the natives of those islands. It grows well in the open air, especially towards the west of England, and produces an abundance of succulent leaves, though apparently its mucilaginous character does not suit the English taste.

The Skirret, a member of the natural order to which belong the Carrot and Parsnip (*Sium Sisarum*), differs from those species in having a perennial root, and, unlike them, this has not kept the popularity it formerly had in this island, but it is still in repute upon the continent. As I do not perceive that any writer upon gardening or botany has attempted to account for the English name, I may make the original conjecture that it is probably derived from the Saxon *skir*, meaning to "scour" or "make clean." But as the Skirret is credited in the east with medicinal virtues it might be debated whether the name refers to the plant as a cleanser and purifier of the system, or alludes to the circumstance that the roots before they are used must be thoroughly washed or scoured. Sir James Smith mentions the species as exemplifying Chinese trickery, because it was their custom to send its roots to Japan under the name of Ginseng, the true Ginseng of Tartary being another plant altogether, and of greater scarcity. If China is the native country of the Skirret it is likely the plant was brought to England or France by some of the early explorers of the mysterious region of Cathay; but we do not know how long it has been grown by the western peoples, only it is referred to in 1548 as a plant, the roots of which were occasionally cooked, and appears not to be of the nature of a novelty then. These roots, or properly tubers, form a cluster about the base of the stem; they are fleshy and irregular, covered with a bark that is rough and whitish, the centre is hard. It is rich in sugar, as is the Parsnip, or even richer than that plant; and Worledge, who described the Skirret towards the end of the seventeenth century, called it the sweetest and most wholesome of roots.

I have no doubt many persons who notice that Salsafy is quoted week by week in market lists (present price 1s. a bundle I believe) have never tasted this vegetable, nor could they identify Salsafy were it shown them. It is a plant of the Composite order (*Tragopogon porrifolius*), and although botanists occasionally pick specimens growing apparently wild, it is presumed these have escaped from cultivation, the plant being a native of Asia and warm regions of Europe, such as Turkey. The name, which comes from a Latin root, has an allusion to the healthful qualities of the plant, but it was at first given in England, if Evelyn is correct, to another species of the genus, which is truly a native of this island—viz., the Goat's-beard (*T. pratense*), also called "Jack-go-to-bed-at-noon," because the flowers close about mid-day. This has yellow flowers; those of the Salsafy are purple; both having edible roots, hence Evelyn's complaint, that many dealers sold the English species, pretending it was the exotic sort. Parkinson, writing some years earlier, mentions that the Goat's-beard was, in his day, sometimes grown in gardens for the root, which was put into salads.

A description is found in the works of Dioscorides, which suits the Salsafy except in one particular—he calls the stem of the plant before him "short." This adjective is scarcely applicable to the species as it is commonly seen growing, but there is proof that it is an old resident in Greece, if not a native of that land, so the Salsafy may be the edible herb with a long sweet root which the ancient physician praises. We cannot possibly ascertain when the plant was brought into England, or by whom. It may have been introduced by one of the wandering monks, or by some crusader. On the continent, where Salsafy is still in considerable demand, the young plant is eaten, as was evidently the custom in former times. The root, boiled and then fried, has been fancied to have a flavour resembling that of the oyster.

The Viper's-grass of Spain, also called Scorzonera, got both its familiar names from the repute it had of acting as an antidote to the poison of a Spanish snake or viper, which had the name of "scurzo," but modern science would probably scout a notion which was long current in Spain and other lands. At some date in the sixteenth century it was also discovered that the root when boiled was an agreeable article for the table, and from Spain it was brought to France and to England, but, though once more cultivated than at present, Scorzonera has never been in much use with us.—J. R. S. C.

#### SINGLE CHRYSANTHEMUMS.

IF I remember aright at the autumn meetings of the Royal Horticultural Society last year these were shown for the first time by Mr. Cannell of Swanley, where I received a box of blooms to inspect. I recollect being very

much struck with the bright orange yellow eye and the comparatively brilliant colours of the petals when contrasted with the doubles; and then some of them have richly shaded concentric rings around the eye, as Dr. Kellock, that make them additionally attractive. Miss Beckwith, too, is even more curious in this respect, having a band of white from which start the rosy-lilac rays. The observance of these central shades and tints is impossible in the doubles, and no doubt new seedlings will be added from year to year like single Dahlias. Though seedlings are easily raised, it often takes years to outdistance early introductions. Two of the earliest single Dahlias years ago were Paragon and Alba (White Queen)—nothing since of thousands of seedlings can surpass those. So of such single Chrysanthemums as Mrs. Kellock, with large and curiously fluted petals; Miss Ellen Terry, with a bright magenta unequalled; a fitting rival being found in Mrs. Langtry, with reflexed silvery flesh-coloured blooms freely produced; while another dramatic celebrity, Henry Irving, not very unlike the last, instead of being reflexed, is concave or partially cupped. I have already named half a dozen, the cream of the single Chrysanthemums, among the curious for bouquet purposes. I may add another half-dozen that are very promising with me at present; Alice, handsome, shaded white, a free grower, as is also Mr. Toole, though much taller, and still confined to a single stem; Magenta King has a deeper orange centre than the pure white Miss Cannell, and both are more robust than the dwarfish Gus Harris or Fair Marguerite. This last differs from all the rest in having the florets contorted in a curious manner. Any reader who wants cut flowers in quantity and variety should possess this dozen at least, and though they may seem expensive at first, they will hold for years, and can be yearly added to. A few words as to culture. Plants obtained now can either be potted for conservatory blooming, or planted out and lifted before any danger of frost comes. Planted out and grown fully exposed in the sun they not only produce more blooms, but wholly take care of themselves. They will grow in any place, and succeed in almost any suburban garden. Mine are planted against a south wall, and the great leathery vigorous foliage and comparatively dwarf length of the stems, which are wholly hid to the base, shows that they relish this treatment very much, with an occasional supply of soot water, and at other times of liquid manure. If I could calculate on the same immunity from frost as last year they should remain here for years, and light up the sombre winter months, while giving lots of flowers for cutting.—W. J. MURPHY, Clonmel.

#### TREATMENT OF IMPORTED CYPRIPEDIUMS.

CYPRIPEDIUMS rank amongst the most useful of Orchids for the conservatory and other forms of decoration, for very few of them are injured by being subjected to cooler treatment for a few weeks when in flower. There are no Orchids easier of culture, and the same remarks apply with equal force to the establishment of imported plants, provided they arrive in good condition. If collected at an unsuitable time and then delayed in transit often the plants are not worth the trouble that would be necessary to establish them. Plants that arrive in bad condition, with scarcely any life visible, test the energies of the best cultivator to bring them into a vigorous condition; in fact, the establishment of such plants with any certainty is almost impossible. Now-a-days this is seldom the condition of imported plants, for frequently when they reach this country they possess green healthy foliage as if only just torn from their native habitats. The work of establishing plants with such foliage is easy.

Imported Cypripediums are not always lost after arrival through carelessness; on the contrary, more are lost by the want of knowledge and experience. I have been in this condition myself in regard to the best means of establishing imported Orchids, and therefore anticipate the wants of beginners or those unacquainted with the treatment required to establish the plants successfully.

Perhaps the best time to receive them is during the early spring months, for they sooner commence the formation of roots and growth than at almost any other season. As soon as the plants arrive all injured or bruised foliage should be removed with a sharp knife, and the plants suspended from the roof of an intermediate house for at least two or three weeks. The roots should be upwards and the foliage downwards to prevent water lodging in the centre of the plants, which is liable to cause decay. For the first ten days the moisture of the house in which they are placed will be ample, afterwards they can be syringed twice daily. When the plants arrive at the season indicated it is not difficult in a few weeks to observe if all is going on well, for the foliage will assume a freshness which it did not possess on arrival. After they reach this condition they may be potted with safety.

They should be placed in the smallest pots possible, which must be nearly full of drainage, a little living sphagnum moss and lumps of charcoal only being placed about the roots. It is a good plan to make firm amongst the drainage a short yet stout stake to support the plant until roots are formed and it becomes established. Another system, and the one most preferable, is to keep the plants suspended until they commence pushing new roots, when a little moss is secured to them to retain moisture; they will make even greater progress than when placed in pots, and there is less risk of water lodging in the leaves. When this is practised the plants are left unpotted until a good number of roots are made in the moss. They are then potted as if they were small established plants in equal parts of peat fibre and moss, with small lumps of charcoal a little less drainage is also placed in the pots.

After they have been suspended for a short time at first in an intermediate temperature it must be decided whether the plants are warm or



cool-house varieties. If the former, such as *C. Stonei*, place them in the hottest house the cultivator possesses; if such as *C. villosum*, they may occupy the house in which they are started until thoroughly established. Although some are termed cool varieties, the whole enjoy heat and moisture while making their growth, and make much greater progress in heat than under cool treatment. Some persons pot *Cypripediums* directly they come to hand, but this is a great mistake, more especially for the inexperienced to practise, for if injudiciously syringed or watered, even if the plants are in good condition to start with, they are very liable to fail.

The autumn is undoubtedly the worst time of all to receive these plants and commence their cultivation when newly imported, for very rarely do they start into growth before the spring months. When received during the autumn months, if potted directly, death is certain, and this would be the case not only with beginners but those acquainted thoroughly with their management. Some might pass the winter safely in this condition and live, but only in the hands of skilled orchidists. Last October I purchased some imported plants of *C. Stonei* and *C. Loweii*, both varieties being in good condition. Some plants of the former were suspended, the remainder potted, but they had to be shaken out and suspended, or all would have damped off. The plants remained suspended all winter, and not until February did they show signs of forming roots, when they were mossed as detailed and kept suspended until a few weeks ago, when the moss was full of roots and the plants potted as if established. On several different occasions we have established these plants by keeping them suspended until they formed roots, and in every instance without losing a plant.

It must be understood that there is less risk of the plants "damping" if potted during the spring months after the plants show signs of renewed life than what there is during the winter. During the spring, when air can be admitted, any water that lodges in the centre is quickly evaporated before it has time to do any mischief, which is not the case during the dull sunless days of autumn and winter. After the plants have formed a fair number of roots they should be treated exactly the same in maturing and syringing as established plants.—W. BARDNEY.

#### A VISIT TO BELGIUM.

HAVING spent nearly three days in Ghent, and having nearly two more at my disposal, I decided on devoting the fourth to a visit to Brussels and have a run through the beautiful gardens and grounds of Laeken Palace. I determined to start for Brussels by the nine o'clock express from Ghent, and on my arrival to make my way to Laeken and there endeavour to get an interview with Mr. Knight. I and my young friend M. Moll, who acted as my interpreter and guide, left Ghent by the nine o'clock express. The scenery is of much the same character as that between Ostend and Ghent, and which I have previously described. We took a return ticket to Brussels, not being quite sure whether the express would stop at Laeken, which is the next station to Brussels. After an hour and three-quarters' ride the train stopped at Laeken. We took advantage of this to get out and walk up to the Palace. Laeken is a charming suburb of the equally charming city of Brussels, and besides its fine churches contains, in addition to the King's Palace, several handsome private residences. The Palace is situated about twenty minutes' walk from the station. The road by which the visitor reaches the Palace is full of interest, as on the left are the public grounds of the Palace, and on the right the charmingly picturesque park of the Palace, with its avenues and groups of noble trees, its charming knolls and dales, and fine lake. The latter grounds are separated from the road by means of a wall, and as the road is situated somewhat high this wall answers the same purpose as a ha-ha would in England—viz., you can see the charming lake and other objects of interest to the lover of landscape scenery as you walk along. A few minutes' walk after passing the lake and we are at the lodge of the main entrance to the Palace. Here we made inquiries of the head porter as to Mr. Knight's whereabouts, and were disappointed to learn that he had not long before gone to Brussels and would not return before evening. As we were strangers we were not permitted to go further than the gate, so had to content ourselves with an exterior view of the front of the Palace, a magnificent building. I had heard so much of the celebrated Winter Garden at Laeken that it may well be imagined how disappointed I felt. As we could not gain admission to the Palace private grounds we started off for a stroll round the prettily designed public grounds, which are situated on the other side of the road just described. Here within view of the Palace windows are fine beds of magnificent *Rhododendrons* and *Azaleas* in full bloom—a charming sight. Continuing our stroll a little further we then come up to the handsome Memorial Temple, erected to commemorate the accession of Leopold I. as the first King of the Belgians in 1830. It resembles the Albert Memorial in structure. Here we might sit and enjoy a quiet rest in the shade and see some of the most lovely scenery in Belgium. A fine view of the city of Brussels is obtained, with its undulated streets, &c., reminding us of Edinburgh.

We retraced our steps through avenues of trees, and presently arrived at the entrance of the main thoroughfare leading to Brussels, and close to Laeken station. As there are plenty of tramcars running between this point and all parts of Brussels we rode by one of these to see as much of the city as possible. Presently we arrived in one of the large squares in front of the grand station, and, being hungry, stepped into the Hotel Venetien, when, after a good Belgian dinner (this is the principal meal in Belgium, there being no luncheon, teas, and et-ceteras as in England) we

are prepared for a visit to the Botanical Gardens. These gardens occupy rather a central position, and are within a few minutes' walk of the principal station. Although not remarkable for extent there is much to interest the visitor of an inquiring turn of mind, as both houses and outdoor departments contain many interesting plants. There are large muscums and a garden of medicinal plants for the use of the students of the School of Medicine. The gardens, which are beautifully laid out, occupy a high and undulated position. Near the entrance is a very pretty lake, in which are many choice aquatic plants. Trees and shrubs are well represented, but few, however, have attained a large size. Every plant is conspicuously labelled, and its geographical distribution shown by means of coloured paints on the label. Such a plan of assisting the students in their botanical studies must be of great benefit to them. Having arrived at the private portion of the garden in which are situated the houses not accessible to the public, but the Curator, M. Lubbers, courteously allowed us to look through all the private departments. One large house contains a valuable collection of succulent plants, presented not long ago to the gardens. A number of span-roof houses are filled with collections of medicinal plants, including many new and interesting stove plants. The way in which *Clerodendron Balfourianum* was trained is worthy of a note. In one of the long span-roof houses this lovely climber is trained in the form of a continuous horizontal cordon about midway down the roof. There are about half a dozen plants to go all round the house. The plants are placed in a bed at the side, and the shoots trained to meet and form the cordon line. On entering the house this long cordon of blooms presents a novel and interesting sight. A large curvilinear structure is devoted to growing a few choice Orchids and other plants on the sides, whilst the centre is occupied with fine large specimens of Tree Ferns, such as *Alsophila australis*, measuring over 30 feet high; *Cibotium princeps* and *regale*—the latter very fine; *Anthurium egregium*, a curious giant Aroid, and many other plants of botanical interest. Every plant that can be safely turned out of doors during summer is arranged on a bed of ashes in one corner of the private grounds. Continental gardeners are much wiser than we in this respect. We "coddle" our greenhouse and other plants far too much, as any one will see on inspecting the healthy and well-grown plants on the continent.

Leaving the private grounds we wend our way along walks lined on each side with Orange and Myrtle trees in tubs, past the garden devoted to the School of Medicine, where the plants are arranged in their natural orders in geometrical beds, up to the large Museum and Palm stoves. As will be seen from the engraving this is a magnificent and imposing structure, supported by massive columns. The central dome is devoted to the purposes of a museum, as are also the two end wings. The glass corridors shown between the end wings and the dome are full of large interesting plants, such as *Pandanus furcatus* and *utilis*, *Chrysophyllum imperiale*, *Caryota sobolifera*, *Attalia maricarbensis*, and other plants. Long half-curvilinear houses are situated at the foot of the terrace, which are filled with collections of Aroids, Ferns, and other interesting plants, and this brings the glass departments to a close. As you stand on the terrace and look down on the well-kept and furnished grounds below one cannot help rendering our meed of praise to the genial and accomplished Curator, M. Lubbers, for the excellent condition of the several departments of this interesting garden; and as we descend the steps and wend our way back to our starting point we became more and more interested in observing the order and scientific skill displayed therein.

Quitting the gardens a tramcar outside the entrance gates for the Avenue Louise conveyed us to the Bois de Cambre. The Avenue Louise is one of the finest roads I have ever seen. It is about three miles in length, a splendid wide road with equally wide promenades on each side. A double row of handsome Horse Chestnut trees are planted on each side throughout the whole length. Seats are provided for the use of the public, and when I rode up in the afternoon and back in the evening the promenades were full of persons enjoying the grateful shade and cool refreshing breezes these handsome trees afforded. A few minutes' ride and we are at the entrance to the Bois de Cambre. On entering we passed through a dense forest of Elms, Oaks, and other trees. But five minutes' walk brings the visitor into a large open space full of people enjoying the sweet fresh air and the shade of a large tree here and there. As we have much to see in this beautiful place we must hurry on down dale and up hill, along large open spaces and fine drives till we come to the magnificent lake—a charming piece of water. It is truly a grand sight to see this large expanse of water with its large and pretty island and chalet peeping out of the trees, and sweeping belts of noble trees in the background. Here and there are boats filled with pleasure-seekers. Every step taken leads to a fresh scene—vistas of noble trees and picturesque landscapes. The site of this interesting park was formerly a dense forest in which the wild boar was hunted.

Evening drawing on we reluctantly had to bid adieu to this charming spot and retrace our steps to Brussels, where we spent the remainder of the day in strolling through the principal streets and seeing the many fine buildings of this grand city. Amongst the most noticeable buildings are the Palais de la Justice, a magnificent structure costing upwards of four millions sterling; La Bourse, Hotel de Ville, the Cathedral of Sts. Michel and Gudule, Galeries St. Hubert, Maison Flamande (the splendid residence of the Comte de Flandres), Banque Nationale, Palais du Roi, and other interesting sights. Completely tired out, we quitted Brussels by the 11.15 express, and reached Ghent about midnight, having thoroughly enjoyed our visit to Brussels.

The next day (Saturday) I had to return home, but wishing to make



the most of my time I elected to travel by night. I had consequently a little time on Saturday morning to devote to seeing a few of the interesting points of Ghent. I paid a visit to the Botanical Gardens. These, however, are not very large, and having been very much neglected were not of so much interest. I ought to mention that there is a bright prospect in store for these gardens now M. Chas. Van Eckhaute, a highly talented son of M. Van Eckhaute, the genial manager to M. Louis Van Houtte, has been appointed to the curatorship, as he has already begun extensive alterations and improvements. The Palm house is somewhat similar in structure to that of the Brussels Botanic Gardens, but is not so large. I was enabled through M. Louis Van Houtte's kindness to visit St. Joseph's convent, well worth seeing, but a description of which would be out of place in this Journal; also several other places of interest which occupied the remainder of my time, and thus bring to an end my first visit to Belgium. I left Ghent that evening by the 6.15 mail train, reaching Ostend by a few minutes to eight. I had the pleasure of making the acquaintance in the train of M. Berggram, chief gardener to Professor Boddaert in Ghent, who was on his way to England. As he was a fluent English speaker it made my return journey an agreeable one. I, however, learnt that I had missed one treat—viz., seeing the grand collection of Orchids which the Professor possesses. I had a rough passage home, but on the whole had a more pleasant voyage than my previous one. We landed at Dover a little before

and was introduced as early as 1787. A figure of it is given in Pallas's Monograph of the genus.

**SENECIO JAPONICUS.**—Known also under the name of *Erythrochæta palmatifida*, but I think the former is the correct name. It is a bold-looking plant, with a stately mien when not in flower, the large palmately divided laminae rising upon stout footstalks rendering it decidedly attractive; but when these are crowned with the corymbs of orange-yellow flower heads it needs no stretch of imagination to pass a favourable opinion upon it, neither is it necessary to point out interesting botanical minutiae to gain the attention of a visiting friend. The merits of the plant are apparent to all. It grows freely and is easily divided, and the stock can soon be augmented. As its specific name implies, it comes from Japan, and is one of the hardiest plants from that most productive region of plant life. It was introduced as early as 1774.

**TROPÆOLUM POLYPHYLLUM.**—A grand trailer is this. If I may be godfather to a popular name I should suggest "Golden Garland," for how charming are the trailing shoots of silver and gold—the very pale silvery green foliage and golden flower cups. It trails over a ledge of the rockery, and there are a dozen shoots, so charming do they look with little patches of *Campanula pusilla* and *C. Hosti* surrounding them. I am not sure that a rockery is the best place—certainly it is a good one, to plant them, as I recently saw a grand mass covering many feet which



Fig. 16.—THE BOTANIC GARDENS, BRUSSELS.

two o'clock, and arrived at Cannon Street at 4 A.M. Sunday morning, thoroughly tired out and glad to reach home again. In concluding these notes I wish to express a hope that other gardeners will be induced to pay a visit to horticultural Belgium, and derive as much benefit both professionally and physically as I did.—T. W. SANDERS.

#### HARDY FLOWERS.

**ASTRAGALUS ALOPECUROIDES.**—This is in my opinion the finest of the genus, however large it may be. This season it is between 3 and 4 feet high, the stems clad with pale green pinnate rather downy foliage, in the axils of which are the flower clusters; the flowers themselves of a clear sulphur-yellow, the calyces and corollas more or less downy; and the time of blooming is somewhat extended, as the flowers expand at the base of the stems first, the upper ones following as growth develops. I think it will produce seeds this year, otherwise there will be no chance of increasing it, as to split up the large woody tap root would end in disaster; at the same time such a desirable plant is well worth increasing and I hope seed will be ripened this season. It is a native of Siberia,

has been established in a *Rhododendron* bed for years; such a feast of the Many-leaved *Nasturtiums* I never had before. In my opinion none who fancy hardy flowers should be without this the most beautiful of all. It is a native of Chili, and was introduced in 1827 or thereabouts. When planting the tuber some gritty sand should be placed about it, and it revels in a rich, light, sandy soil.

**BRODIAEA COCCINEA.**—This is also known as *Brevoortia coccinea*. Once upon a time an American dealer sent the bulb out under the two names, but this was quite by mistake; the latter name is often used by our cousins across the Atlantic. It is a beautiful species, producing tall slender scapes 2 to 3 feet high; flowers umbellate at the top, from four to twenty-five in a single umbel, each about  $1\frac{1}{2}$  inch long, tubular, the tube deep scarlet, the limb segments green—a pretty and uncommon contrast. It is one of those numerous bulbs which delight to remain undisturbed for years, under which conditions, providing it is planted about 6 inches deep, it is quite hardy. Rich sandy soil with a well-drained position suits it admirably, and under such favourable conditions it increases rapidly, the young offsets in two or three years forming flowering bulbs, and ultimately a very happy colony is formed. It is desirable to have a groundwork of some other growth through which the slender



stems will force their way, and they look extremely pretty waving to and fro in a gentle breeze. It is a native of California, growing abundantly on the western slopes of the lesser hills.

**B. CONGESTA.**—With its white variety *alba* this is most suitable for growing with the last-named. Planted together they grow happily, and as they flower at the same time they look very charming. The flowers of these are in dense heads; the typical form purple and more vigorous than *alba*, but if plenty of sand is put about the latter it will progress in a favourable manner. *B. congesta* increases much more rapidly than *B. coccinea*, but it will be years before it would elbow its weaker congener out of the way.

**PRETTY FACE.**—Such is the common name by which *Calliprora lutea* is known, and the name, though fanciful, expresses truth. Two years since the ensuing autumn I planted six bulbs in a dry sand border, enriched with leaf soil and decayed manure, and these have at the present time fifteen strong scapes of flowers umbellate at the top. To those who know it not I may say the flowers are nearly an inch across, like golden stars, the colour being deep yellow, with a medial brown nerve to each perianth division. They last a long time in beauty, and are to one bulbophile at least very attractive. It is a native of California, abounding on sandy hillsides of the Sierra Nevada, &c., and by the leading American botanists is named *Brodiaea ixioides*. Mr. Baker named it *Milla ixioides*. Lindley was, I think, responsible for the name of *Calliprora lutea*.

**CAMPANULA PERSICIFOLIA ALBA PLENA.**—One of the finest border flowers under cultivation, very floriferous, of good habit, and the individual flowers little models of beauty, of *Camellia*-like form, and about 1½ or 2 inches across, each furnished with a convenient stalk, so pretty upon and so serviceable of the plants. "Cut and come again" may well be applied to this plant, and yet what hosts of the gardening fraternity are not even aware of its existence. I meet with many even in this age of hardy flowers who, standing before it, somewhat astonishingly ask, "What lovely thing is this?" and as a rule they gladly form a closer and practical acquaintance with it. Most easily propagated it should be grown largely and serve its day and generation as it can well do. Every shoot sent up from the bottom will root if pricked in sandy soil in a shady place.—T.

### COLOURING GRAPES.

THIS is an old theme, concerning which there has been much written from time to time, and possibly on that account it may be thought by many that he who ventures to revert to the matter through the pages of any horticultural paper is at a loss for a subject. However, I shall make no apology, feeling well assured that, although the great majority of experienced men have nothing further to learn on the matter, there are many who have, and to whom a few practical hints and suggestions will, we doubt not, be acceptable. Whenever there is a deficiency of colour in ripe Grapes there is always a cause. In some cases it is due to a combination of evils, and as a matter of course it follows that if the best results are desired, the evils—which are always preventible—must be rigorously avoided, or when they present themselves given no quarter. Very fruitful sources of bad colouring are the following—viz., overcropping, insufficient ventilation, a too high and dry temperature, dryness at the roots, and last, though not least, red spider.

It will thus be seen that there are what we may call four primary causes of bad colouring, and perhaps it would be as well to notice each of them separately. First as to overcropping. The question arises as to what is and what is not sufficient fruit for a Vine to be allowed to ripen. To many this is rather perplexing, and well it may be, seeing that it is a matter upon which no definite rule can be laid down. To be brief, however, it may be said that a Vine should never cease to produce young wood and leaves from the time it starts into growth till after the fruit is fully ripe, or, in fact, to the end of the season. If it does, the most probable cause is to be found in there having been too many bunches left on the Vines. Therefore, when leaf and wood growth is impeded, even if it be in the middle of the season, there should be no hesitation about lightening the crop by cutting out more bunches.

Ventilation is a matter requiring great attention, for as soon as the berries begin to colour air should be admitted by ventilating both top and bottom, night and day, increasing and reducing it according to the state of the weather. A high and dry temperature is productive of evil consequences, and as it is one of those things over which we have most control, it should receive attention if only for the sake of avoiding those two severe words of condemnation—"sheer neglect." No hard-and-fast rule can be laid down regarding temperature, and it should never be attempted to maintain a specified number of degrees. Let the heat inside fluctuate with the outside temperature, always keeping the former, however, 5° or 10° higher than the latter.

Dryness at the roots is, perhaps, as much the cause of bad colouring as anything else. When any uncertainty exists regarding the state of a Vine border, means should be taken to

set all matters of doubt at rest. Outside borders are very deceptive owing to rainfall, and it frequently happens that the surface, and even to a depth of 18 inches, will be quite moist when the bottom of the border may be dust-dry. It seems almost unnecessary to say that this state of things should never be allowed to exist, but where it does it certainly should be rectified without delay.

Of red spider we may say that it is almost invariably the natural consequence of the evils above mentioned, and if they were prevented there would be little or no trouble with this insect, which is one of the worst to which Vines are subject. Whenever it does gain a hold the best remedy is sponging with soapy water. Of course there is no gainsaying the fact that when the fruit is ripening off, and owing to a somewhat drier atmosphere which ought to prevail, the avoidance of an attack of red spider is really very difficult.

One other point we will slightly allude to—viz., the amount of foliage a Vine ought to carry. In my opinion there should be just sufficient to prevent the sun shining with too great a force on the bunches—a dense canopy, as is sometimes seen, being altogether unnecessary.—ET CÆTERA.

### MANURES.

(Continued from page 32.)

[AN abstract of an essay read before the Western New York Horticultural Society by Professor G. C. Caldwell.]

IT has been said that "commercial manures do not fill the bill." Why do they not answer? I see but two reasons. It is either because we do not hit upon the right combination or mixture of such plant foods as they contain, or it is because of the lack of the organic matters—the humus or vegetable mould-forming substance which they do not contain, but which the stable manure does contain. If the first reason were the reason, there would not be the slightest difficulty in getting round it; any one of the half a dozen manufacturers of fertilisers in the cities could make to order a mixture containing nitrogen, phosphates, potash salts, and all the rest, in so nearly the same proportions as in stable manure, and in so much the same degrees of solubility, that no crop could tell the difference when this mixture should be offered to it. Some manufacturers have gone even ahead of this, and prepared dishes, supposed to be even better than stable manure, because containing these foods in just the proportions required by each crop—a principle of manuring that I think has been just as successful in general practice as it is sensible as to its theory—which is very little of either success or sense.

Are we not, then, cornered by the conclusion that if we cannot get stable manure, and wish to do what we can to substitute for it commercial fertilisers, we must in some way make good the deficiency in respect to the organic matter? we must keep up the condition of the soil in respect to its vegetable mould, in other words. This can be done in but two ways, so far as I see, by a liberal draft on beds of rich muck wherever the fruit-grower has such beds on his farm. If he has no muck beds then he must resort to green manuring; in this case he will have to manure his farm as all other farmers do—he must rotate his crops. In the case of some fruits this would be no disadvantage, such as those that must be renewed every few years; in the case of others, as the Apple, Pear, Cherry, or Grape, it would be quite otherwise; there a course might be followed similar to one which is stated to have been successfully practised now for ten years in a vineyard in Germany, of partially replacing the stable manure by a mixture of a special vineyard manure containing soluble phosphates, potash salts, and nitrogen compounds.

If you should use muck, and should have access to a variety of deposits, it is well to remember that there are very considerable differences in mucks. Some may contain twice as much organic matter as others; it might, therefore, be very useful to make a simple examination of each one, to determine which is the richest in this substance for which you more especially desire to use it. This test may be made by thoroughly drying a sample of each kind in the air, taking care to break up all the lumps and reduce it to as fine a condition as you can, weighing out a pound as carefully as possible with such means as you have, then heating it to redness over a hot fire on a piece of clean sheet iron, and finally weighing what is left; the more the sample loses by this treatment the richer it in all probability is in humus-forming matters. If you have your choice of two mucks, one of which loses much more weight than the other by this treatment, the chances are that that one will do you the best service.

Now as to the plant food to be used with the muck or with the green manure. If your substitute for stable manure is to be as nearly like the thing for which it is substituted as practicable, you should supply to the crop all three of the specially valuable ingredients of commercial fertilisers—nitrogen, phosphate, and potash salts. In a paper which I read in 1879 I showed that, as far as we can conclude from the very limited chemical data at our command, a fruit crop removes from an acre of soil somewhat the same quantities of these three plant foods as are carried off in ordinary farm-cropping. Future experience and experiment may show that for this crop or that one a more or less one-sided manuring may do better—that for one kind of fruit more than the average proportion of potash will give the best results—that for another phosphate is especially successful; but I do not think that as yet we have had enough experience



with commercial fertilisers on fruits, so that we can lay down any rules at all in regard to their use in the orchard or the small fruit garden.

I do not see what more I can do than to lay down these few principles that may help in the search for and the use of materials to supplement the insufficient supply.

First, that there is enough to be had, and at fair and reasonable prices, of everything that is contained in stable manure.

Second, that, at least for the present, we need not attempt to supply all these constituents of the stable manure; that we can obtain the same results we have been getting, if we can only learn how to maintain in a proper manner the stock of vegetable mould in the soil, by a suitable supply of fresh vegetable matter in a green manuring, or of partially decayed vegetable matter in muck, and in addition can learn how to use successfully the three useful ingredients of these commercial fertilisers, to which we must resort if we are going to try to get along without stable manure.

As just said, all this important knowledge can be obtained only by many field trials and experiments—not such special experiments as a few of your number undertook last year to carry out at my suggestion—but trials on a larger scale, and in a more general way. Farmers have learned how to use phosphates with much profit on Wheat, and in many sections I think they now feel that they cannot be sure of a fair Wheat crop without phosphates. And they have taught themselves how to use this fertiliser by going right to work and trying to use it. Doubtless many trials cost more than they came to; but for all that they have persevered, and now they are masters of the situation, and can raise good Wheat crops even if they cannot get all the stable manure they would like to have. Likewise, in one locality or another, in this country or in others, we may find almost every farm crop greatly assisted by the use of commercial manures. It is difficult for me to believe that the fruit crop is so different from the farm crop that it cannot be made remuneratively productive by about the same general kind of feeding. The fruit crop is like the farm crop, in that it will thrive on stable manure applied in such a manner as the experience of the fruit-grower has taught him; and it seems to me that the time must come, very soon, when the same can be said of commercial fertilisers, that the fruit crop will thrive on them, when applied in such a manner as the experience of the fruit-grower has taught him to observe.

## ROSE SHOWS.

### MANCHESTER (NATIONAL).

THIS Exhibition was held in the Botanic Gardens, Old Trafford, on Saturday last, and although not quite equal to that of last year, yet a magnificent display was made, both the trade and amateurs contributing largely and creditably. Messrs. Paul & Son's stands were nearly all that could be desired, some few of the blooms only lacking finish and suffering from the journey. Mr. B. R. Cant's were also very fine. In the amateurs' classes special mention may be made of the stands staged by the Rev. J. H. Pemberton, Romford; Rev. Lionel Garnet, and A. R. Tate, Esq., all of which were of the highest merit. The competition was keen in most of the classes, although, with the exception of one or two provided for nurserymen, adjudication was not very difficult, the leading collections being a long way ahead of the others. Favoured with charming weather the number of visitors was large, plainly showing that the citizens of Cotonopolis were anxious to pay due homage to the queen of flowers.

### NURSERYMEN'S CLASSES.

The most important in this series was Class 1, for seventy-two distinct single blooms, the chief prize being a silver cup of ten guineas' value, presented by the Botanical Society of Manchester, and £4 in cash. The premier position was gained by Messrs. Paul & Son of Cheshunt, whose collection was arranged in four boxes, forming a very rich series; indeed, these were unsurpassed in all the trade exhibits. The best varieties were Ollivier Delhomme, Annie Wood, Horace Vernet, Queen of Queens, Dr. André, Madame Gabriel Luizet, Xavier Olibo, John Stuart Mill, Helen Paul, Mons. E. Y. Teas, Edouard André, Alfred Colomb, Charles Lefebvre, Pride of Waltham, Devienne Lamy, Black Prince, Lady Sheffield, extra good; Comte Raimbaud, Innocente Pirola, Duke of Albany, Duke of Edinburgh, and Baroness Rothschild, Merveille de Lyon, extremely fine; Camille Bernardin, Madame Victor Verdier, Marie Baumann, Star of Waltham, Harrison Weir, and A. K. Williams. Mr. B. R. Cant of Colchester followed with very good blooms, including some first-rate flowers, but others were weak. The following varieties were in good condition:—Comtesse de Nadaillac, Star of Waltham, Madame Gabriel Luizet, Madame Caillot, Louis Van Houtte, Sultan of Zanzibar, Maréchal Niel, Wilhelm Köelle, Reynolds Hole, Général Jacqueminot, Baroness Rothschild, Mrs. Jowitt, Paul Neyron, Madame Sophie Fropot, Merveille de Lyon, A. K. Williams, Marie Baumann, and Black Prince. Mr. Frank Cant of Colchester and Cranston's Company of Hereford were third and fourth respectively, the former exhibitor staging a very neat collection. In the class for thirty-six distinct varieties in triplets Messrs. Paul & Son were again first, Mr. B. Cant second, and Cranstons of Hereford third. The premier collection was really magnificent and a long way ahead of the rest, first-class blooms of the following being staged:—Baronne de Rothschild, Sénateur Vaisse, extra fine; Comte Raimbaud, Marie Finger, Alfred Colomb, Marie Verdier, Xavier Olibo, Capitaine Christy, Star of Waltham and Pride of Waltham, Marie Baumann, Centifolia Rosea, Ulrich Brunner, La France, Mlle. Prosper Langier, excellent; Merveille de Lyon, Marie Rady, Duc de Rohan, A. K. Williams, Abel Carrière, and Etienne Levet, of which superb blooms were shown. In Mr. Cant's collections some first-rate blooms were staged, especially notable being Madame Gabriel Luizet, Duke of Edinburgh, Marie Verdier, Madame Eugénie Verdier, Reynolds Hole, Baroness Rothschild, La France, Alfred

Colomb, St. George, Duke of Teck, Comtesse de Nadaillac, Lady Sheffield, and Mrs. Jowitt.

In the class provided for eighteen Teas and Noisettes Mr. B. Cant was first, and Messrs. Paul & Son second, these being the only collections staged. The first collection was of grand form and size, containing many leading and first-class kinds—Mad. Hippolyte Jamain, Boule d'Or, Niphotos, Marie Van Houtte, Souvenir de Paul Neyron, Etoile de Lyon, Souvenir d'un Ami, Souvenir d'Elise, Madame Welche, Moiré, Innocente Pirola, Jean Ducher, Comtesse de Nadaillac, Maréchal Niel, Souvenir de Madame Pernet, Belle Lyonnaise, Mad. Angele Jacquier, Catherine Mermet. In Messrs. Paul's stand the following were very fine, but they were much smaller than Mr. Cant's—Madame Cusin, Souvenir d'un Ami, Maréchal Niel, Souvenir d'Elise, Innocente Pirola, and Alba Rosea. For thirty-six distinct varieties, single blooms, Mr. John House, Eastgate Nursery, Peterborough, was first, while Messrs. J. Burrell & Co., Cambridge, and Mr. Henry Frettingham of Beeston near Nottingham, were second and third respectively. Mr. House's collection was deservedly to the front, although subject to keen competition, for there were not less than twelve collections staged in this class. The best blooms were Reynolds Hole, Marie Verdier, Charles Lefebvre, Duke of Wellington, Harrison Weir, Baronne Hausmann, Countess of Rosebery, Mrs. Jowitt, Madame Gabriel Luizet, Duc de Rohan, A. K. Williams, Alfred Colomb, Exposition de Brie, Marie Baumann, Comtesse de Serenye, and John Stuart Mill. Messrs. Burrell were closely second, but the blooms were rather too forward. Excellent examples of the following were shown:—A. K. Williams, Dr. Sewell, Le Havre, Annie Wood, Xavier Olibo, Baroness Rothschild, Beauty of Waltham, Dr. André, Prince Camille de Rohan, magnificent blooms; Marquise de Castellane, Ollivier Delhomme. Mr. Frettingham's were also good, especially the following: Duke of Edinburgh, White Baroness, Horace Vernet, and Countess of Rosebery. This was the most keenly contested class in the Exhibition, the rejected lots being really in most instances very good, and assembled from all parts of the country, and it was rather surprising that the Roses from the eastern counties should take the lead. For eighteen distinct triplets Mr. John House of Peterborough was again to the front, Mr. George Prince, Oxford, and Messrs. J. Burrell & Co., Cambridge, second and third in the order named. Mr. House's blooms were perfect rich specimens of the following:—Alfred Colomb, Merveille de Lyon, Duc de Wellington, Reynolds Hole, Alfred Dumesnil, Harrison Weir, Marguerite de St. Amand, A. K. Williams, Marie Verdier, Horace Vernet, Baroness Rothschild, Exposition de Brie, François Michelon, Charles Lefebvre, Madame Eugénie Verdier, Ulrich Brunner, and Marie Baumann. The second collection was also good, the following varieties being well represented:—Annie Wood, Louis Van Houtte, La France, Mrs. Jowitt, Alfred Colomb, Innocente Pirola, and A. K. Williams.

For twelve Teas or Noisettes Mr. George Prince of Oxford was well to the front; and Mr. J. Mattock, Oxford, was second; and Messrs. G. Cooling and Son, Bath, third. The first collection included excellent blooms of Anna Ollivier, Prince of Wales, Innocente Pirola, Madame Lambard, Francisca Kruger, Madame Jacquier, Souvenir de Madame Pernet, Catherine Mermet, Maréchal Niel, and Niphotos.

### AMATEURS' CLASSES.

Most of the classes for amateurs were well filled, and the blooms generally were of excellent quality. Much interest attached to the premier class for thirty-six distinct varieties, for which a silver cup valued at ten guineas given by the Botanical Society, as well as a cash award, was given. All the collections were staged in excellent order. Notably smooth and even were most of the blooms, but the leading position was accorded to the Rev. J. H. Pemberton of Romford, whose collection was indeed rich, and from it the charming Tea variety, Catherine Mermet, was selected as the best Tea Rose in the amateurs' classes, and a silver medal was awarded. All the blooms staged were of unquestionable merit, but we may particularise the following varieties:—Exposition de Brie, Belle Lyonnaise, Annie Wood, Star of Waltham, Pierre Notting, Comtesse Raimbaud, Catherine Mermet, Duke of Edinburgh, Sénateur Vaisse, Baroness Rothschild, Marie Baumann, Madame Victor Verdier, Ulrich Baumann, Madame Charles Wood, Marie Verdier, Beauty of Waltham, and Comtesse d'Oxford. The second prize was accorded to G. R. Whitewell, Esq., Darlington; and T. B. Hall, Esq., Rock Ferry, Birkenhead, secured the third. The second collection contained magnificent blooms of Madame Hippolyte Jamain, Madame Eugénie Verdier, Queen of Waltham, Duchesse de Morny, Duchess of Bedford, Madame Gabriel Luizet, Le Havre, Alfred Colomb, and Duke of Connaught. Mr. Hall's lot well represent Général Jacqueminot, Monte Christo, Capitaine Christy, Baroness Rothschild, and Etienne Levet. In the class for twelve distinct triplets G. R. Whitewell, Esq., Darlington, was well to the front, showing good blooms of Thomas Mills, Violette Bouyer, John Stuart Mill, Baroness Rothschild, Duke of Edinburgh, Mons. E. Y. Teas, Fisher Holmes, Marie Baumann, and Alfred Colomb. The Rev. J. H. Pemberton was second, and T. B. Hall, Esq., third. The second collection included excellent blooms of the following:—Comtesse d'Oxford, Beauty of Waltham, Horace Vernet, and A. K. Williams. Twelve Teas or Noisettes were well contested, T. B. Hall, Esq., Rock Ferry, securing easily the first position with good blooms of Niphotos, Marie Van Houtte, Perle des Jardins, Souvenir d'un Ami, Madame Hippolyte Jamain, Innocente Pirola, Madame Lambard, Madame Margottin, Madame Millans, Catherine Mermet, and Belle Lyonnaise; the bloom of Niphotos was especially fine, also Belle Lyonnaise. The Rev. J. H. Pemberton was second, and C. Jennings Day, Esq., Rowton, near Chester, third, both of whose collections were fairly good, but several of the blooms were small and rough.

In Division D the primary class was for twenty-four distinct varieties, single blooms, and several collections were staged which were good throughout; but unmistakeably excellent was the collection staged by the Rev. L. Garnet, Chester, to whom the premier position was awarded. The following varieties were represented by blooms as good as any in the Show:—Madame Hippolyte Jamain, Emile Hausburg, Abel Carrière, François Michelon, Madame V. Verdier, Alfred Colomb, Duke of Edinburgh, Baroness Rothschild, Marie Louise Pernet, Thomas Mills, Comtesse de Serenye, Louis Van Houtte, Madame M. Verdier, Horace Vernet, Marie Rady, Capitaine Christy, Etienne Levet, Marie Baumann, Annie Wood, Ulrich Baumann, Ferdinand de Lesseps, and Madame E. Verdier; the blooms of Capitaine Christy, Annie Wood, and Ulrich Brunner were remarkably fine. Mr. William Boyes,



Milford, Derby, Miss Watson Taylor, Headington, Oxford, and Mr. P. S. Budd were awarded honours in the order named. Nine boxes of eighteen distinct varieties, single blooms, were staged, but some of them were rough and small. The leading collections were good, the premier one being first-rate, some magnificent blooms being noticeable, especially Baronne de Rothschild, which measured 6 inches across, and very smooth and full. This collection was staged by A. R. Tate, Esq., Woolton, Liverpool, and beside the variety named were the following:—Mr. Laxton, John Hopper, Pierre Notting, Paul Verdier, Dr. Andre, Sophie Fropot, Madame V. Verdier, Emile Hausburg, Marie Rady, Charles Darwin, John Stuart Mill, Capitaine Christy, Etienne Levet, La France, Countess of Oxford, Mdle. M. Verdier, and Charles Lefebvre. Mr. T. P. Budd, Bath, and Mr. William Boyes were second and third respectively. In the class for nine Teas or Noisettes Miss Watson Taylor, Headington, Oxford, was easily first with charmingly smooth and even blooms of Comtesse de Nadaillac, Niphetos, Souvenir d'Elise Vardon, Mad. Willermoz, Madame Welche, Souvenir d'un Ami, Belle Lyonnaise, and Catherine Mermet. Mr. A. Evans, Oxford, and A. Tate, Esq., Woolton, second and third in the order named.

#### OPEN CLASSES.

The classes for twelve blooms of a single variety were well filled and occupied considerable space. For twelve trusses of any white variety Mr. B. Cant, Colchester, was well to the front with a magnificent tray of Merveille de Lyon, in every particular perfect, containing some of the best blooms of this favourite variety in the Show. Messrs. Paul & Son were second with the same variety—this was also a meritorious stand; and Mr. G. Prince of Oxford was third with Innocente Pirola. In the corresponding class for twelve blooms of any crimson Rose there were numerous entries. Mr. Henry Frettingham took the lead with a magnificent stand of Alfred Colomb. A close second was gained with the same variety by Mr. George Prince of Oxford, and Messrs. Paul & Son were third with the same variety, while an equal third was accorded to Mr. John House for a charming stand of A. K. Williams, perfect, smooth, but rather small blooms. In the class provided for twelve blooms of any Rose Mr. B. Cant was first with Alfred Colomb, and these blooms were charmingly fresh and bright.

#### DISTRICT-GROWN ROSES.

Classes were provided for Roses grown within twenty miles of Manchester Town Hall, but they were not well filled, and some of the blooms were poor. In the class for twelve distinct blooms R. Hardwick, Esq., Ashton-on-Mersey, was first, and in the collection there were good examples of Etienne Levet, Capitaine Christy, Pierre Notting, and Prince Arthur. Mr. G. Burgess, Tabley, Knutsford, was second. James Brown, Esq., Heaton Mersey, was first for six distinct varieties with an admirable lot, to which a silver medal was also awarded. The collection consisted of Dr. Hogg, Madame E. Verdier, Comtesse de Serenye, Mons. E. Y. Teas, Baronne de Rothschild, and John Hopper. The second prize was gained by W. H. S. Watts, Esq., Flixton. It is surprising that these classes were not more keenly contested.

A very beautiful collection of Ferns in great variety was staged by Messrs. W. & J. Birkenhead, Fern Nursery, Sale, near Manchester, forming a very interesting and beautiful addition to the Roses, and Messrs. Dickson and Robinson of Manchester exhibited an interesting series of hardy flowers, in which *Lilium testaceum* and *Gladiolus Colvillei* "The Bride" were conspicuous. Considerable exhibits of Roses were also made, but not in competition, by Messrs. Paul & Son; Messrs. J. Jefferies & Son, Cirencester; W. & J. Yates, Manchester, &c., which were very attractive.

#### LEEK.

ROSE Societies differ very much in character—some large, some small; some open to all, some exclusive, confining themselves to a certain district; some sufficiently attractive to draw the large growers for sale and the leading amateurs, and some only able to rely on their own unaided efforts; but I think the Leek Rose Society is *sui generis*. All its exhibitors are what we should call small men, none growing more than 500 plants, and, with one or two exceptions, cultivating their own plants. Another feature of it is that there are no Tea Roses grown or shown. I do not think there was one in the Exhibition; there were a few Noisettes, but no Teas. The reasons for this are that Leek, being situated among the Staffordshire hills, and is peculiarly subject to rains, and very unfavourable for the outdoor growth of Teas, and the exhibitors are not such as can afford to grow them indoors. They have persevered amidst most disadvantageous circumstances. This is the first year that I have been here on an exhibition day that it has not been a downright wet day, with usually a wet evening before the show day, and it was a pleasure to be present at a show without wet; and if perseverance deserves success, then the Leek Society assuredly deserves it, and it must have been gratifying to them to find fresh exhibitors coming forward.

Like all the Rose shows this year the flowers showed the effects of the unfavourable character of the weather in the month of June, but there was a decided improvement notwithstanding in the blooms, especially in the smaller classes. There is still room for improvement in some respects. The naming of the flowers was in some cases very curious, and although the setting-up was very improved, there was need for a further improvement, especially in the setting-up of trebles. These were generally (except in one case) crammed together into one tube instead of being inserted in three, and consequently the effect was spoiled.

In the class for twenty-four, to which the National Society's gold medal was awarded, Mr. S. Eyre was first with an excellent box containing good blooms of Countess of Oxford, Duke of Wellington, Dr. Andry, Madame Gabriel Luizet, Marie Baumann, Madame Hippolyte Jamain, E. Y. Teas, Duke of Edinburgh, La Rosière (I think the best bloom of this variety I ever saw), La France, Etienne Levet, Général Jacqueminot, Baroness Rothschild, Xavier Olibo very good, Alfred Colomb, Dupuy Jamain, Madame Lacharme, Maurice Bernardin, Victor Verdier, Marguerite Brassac, Cheshunt Hybrid, Madame Prosper Langier, Jean Liabaud, and Madame Charles Wood. In the class for eighteen Mr. Arthur Johnson was first with Gabriel Luizet, Dr. Andry, Louis Van Houtte, La France, Duke of Connaught, A. K. Williams, Princess Mary of Cambridge, Gloire de Dijon, Marie Baumann, Macaulay, Beauty of Waltham, John Hopper, Le Havre, Madame Clemence Joigneaux, Charles Lefebvre, La Rosière, and Elie Morel. Mr. Gilman was

second, and Mr. J. Chadwick third. In the class for twelve Roses Mr. Larpin Bratt was first with Alfred Colomb, Général Jacqueminot, Duke of Wellington, Lord Macaulay, Madame Hippolyte Jamain, Louis Van Houtte, Maréchal Niel, Maurice Bernardin, President Thiers, Charles Lefebvre, Camille de Rohan, and Beauty of Waltham. Mr. Johnson was second, and Mr. W. H. Nixon third. In the class for six Mr. Nixon was first with Charles Lefebvre, Dupuy Jamain, A. K. Williams, Marguerite de St. Amand, Général Jacqueminot, and La France. In the class for six dark Roses Mr. A. Johnson was first—Dr. Andry, A. K. Williams, Charles Lefebvre, Louise Van Houtte, La Rosière, and Mrs. Baker. Mr. Samuel Eyre was second. In the class for six light Roses Mr. J. Gilman was first with Capitaine Christy, Marquise de Mortemarte, Gabriel Luizet, Duchesse de Vallombrosa, Baroness Rothschild, and La France. Mr. A. Johnson was second in the class for six blooms of any one Rose. Mr. S. Eyre was first with Maurice Bernardin, and Mr. A. Johnson second with La France. In the class for twelve of any one Rose Mr. Gilman was first with La France, and Mr. Hilden second with Charles Lefebvre.

Besides the Roses there were as usual some excellent stove and greenhouse plants, Ferns, and Fuchsias, those from E. Cliffe Glover, Esq. (gardener, Mr. Roberts) being as usual very fine. His plants were Croton Baroness Rothschild, *Kentia australis*, *Clerodendron Balfourianum*, *Ixora coccinea*, *Erica ferruginea major*, *Dipladenia amabilis*, *Latana borbonica*, *Allamanda cathartica*, *Imantophyllum miniatum*, Croton Queen Victoria, *Pandanus Veitchii*, and *Cocos Weddelliana*. His Ferns were *Cibotium Barometz*, *Cyathea medullaris*, and *Adiantum pedatum*. His Fuchsias were Wave of Life, Rose of Castile, Marksman, and Sybil. All these obtained first prizes in their respective classes. There were also some excellent Pansies shown. Nor must I omit a beautiful dinner-table stand contributed by Mrs. A. Johnson, composed entirely of Orchids—*Odontoglossum vexillarium*, *Cattleya Mossiae*, &c.; they were tastefully and elegantly arranged, not one crowded, and, mingled with Maidenhair Fern, the effect was very beautiful.

#### LOUTH.

ALTHOUGH there were many attractions at the attractive town of Louth Lincolnshire, on the 17th and 18th inst., Roses were a prominent feature and had a marquee "all to themselves." One of the best prizes of the season was offered in the leading class—namely, £10 for forty-eight varieties, open to all England. This prize was well won by Mr. B. R. Cant of Colchester with the following varieties—Mdle. Marie Finger, Abel Carrière, Marquise de Castellane, François Louvat, Souvenir de Madame Boll, Reynolds Hole, Sir G. Wolseley, Madame Gabriel Luizet, Marie Baumann, Merveille de Lyon, Star of Waltham, Baronne de Rothschild, Duke of Edinburgh, Maréchal Niel, Le Havre, Louis Van Houtte, Catherine Mermet, Xavier Olibo, Prince Camille de Rohan, Dr. Andry, Auguste Rigotard, Jean Soupert, William Boelle, Mrs. Jowitt, Madame Eugénie Verdier, Charles Lefebvre, Comtesse de Serenye, Madame Prosper Langier, Sophie Coquerelle, Alfred Colomb, Madame Marie Verdier, Ulrich Brunner, A. K. Williams, Madame Caillot, Dr. Sewell, La France, Comtesse d'Oxford, Baron de Bonstetten, Duke of Teck, Madame Hippolyte Jamain, François Michelon, Comtesse de Nadaillac, Madame C. Crapelet, Horace Vernet, Pride of Waltham, Marguerite de St. Amand, and Prince Arthur. The blooms were neat, fresh, and beautifully staged, but the visitors to the Louth did not by any means see "Cant at his best." Mr. Merryweather, Southwell, was placed second in this class with a collection including many fine blooms, notably Louis Van Houtte and Merveille de Lyon. Messrs. W. & J. Brown, Stamford, had the remaining prize, running Mr. Merryweather closely.

Mr. B. R. Cant secured the prize offered for twelve Roses of 1881, 1882, and 1883 with *Lecocq Dumesnil*, a dark Rose of the Abel Carrière type; *Eclair*, a beautifully formed symmetrical bloom, not large but firm, the margins of the outer petals recurring; colour reddish crimson—a variety of promise; Ulrich Brunner, good; Merveille de Lyon, undoubtedly the finest bloom in the Show; Earl of Pembroke, Duke of Albany, Duchess of Connaught, Baronne Nathaniel de Rothschild, Violette Bouyer, Colonel Felix Breton, like a glowing Charles Lefebvre; Lady Sheffield, and a remarkable Tea Rose, Souvenir de Thérèse Levet. This bloom attracted much attention by its extraordinary colour—velvety crimson scarlet—far surpassing in richness any other Tea Rose. If this bloom was a fair typical example of the variety, Souvenir de Madame Thérèse Levet must become a general favourite. Mr. Pennell, Lincoln, also exhibited a most creditable stand in this class. Mr. Cant also secured the chief prize in the class for twelve Teas and Noisettes with charmingly fresh but not large blooms.

In the class for thirty-six Roses the competition was exceedingly close between Messrs. J. & W. Brown and Mr. Pennell. The former exhibitor won by, we believe, one point in the blooms and better foliage. Had they been judged an hour or two later the prizes would in all probability have been reversed. Mr. Lingard had the third prize. In the class for twenty-four blooms there was good competition, the Stamford and Leicester blooms being equal in merit, but the former, being slightly the fresher and with better foliage, secured the first position, Mr. Norton having the third prize. The competition was still greater in the class for twelve Roses, and here Mr. Pennell well won the premier place, followed by Messrs. Brown and Meredith. Altogether the Show was a very creditable one, but it was easy to see evidence of the beginning of the end of the Rose season, and most if not all the competitors would have staged better a week earlier.

In another large tent there was a great and good exhibition of vegetables, and the finest display of small fruits we have seen this season, Gooseberries, Currants, Raspberries, and Strawberries being of great excellence; and the finest Strawberry was the native of the town, Forman's Excelsior.

It was most refreshing to see the earnestness of the well-to-do officials in the administration of the Exhibition; the Honorary Secretary, Mr. Lucas, also the Mayor of the town—in fact, all the members of the Committee working like troopers.

The Exhibition was held in the well-wooded grounds of Joseph Bennett, Esq., close to the splendid church. The day was a general holiday, and the efforts of the directorate to make everything agreeable to everybody certainly merited, and we trust commanded, general approval and financial success.

#### WIRKSWORTH.

The spirited little town of Wirksworth, about four miles from Matlock Bath, already the seat of a successful and established horticultural society,



has been the first to inaugurate a Rose show in Derbyshire, and on Thursday last the Exhibition was held in the pretty grounds of "The Lees," in the midst of some of the finest scenery in Derbyshire. The schedule was an attractive one, about £50 being offered in prizes, the inducements being sufficient to bring some good growers long distances. Owing, however, to the contemporaneous shows at the Mansion House, Louth, Helensburgh, and Carlisle, competition in the open nurserymen's classes was limited; a weak point in the Show was also the paucity and poor condition of the Teas and Noisettes, but these were compensated for by the beauty of the blooms, mostly H.P.'s, and the number of stands put up in the amateurs' classes, that of the Rev. J. H. Pemberton of Havering-atte-Bower, Essex (a Darlington winner the previous day), who carried off the silver medal of the N.R.S. and the first prize for twenty-four single trusses, being certainly the best box in the Show, although he was run close by a strong rear.

In the open class for forty-eight single blooms Mr. H. Frettingham of Beeston, Nottingham, although the only competitor, had some attractive and portly blooms, and was consequently placed first. For twenty-four single trusses Messrs. G. Cooling & Son, Bath, took a similar position, and the only prize for twelve Teas in the dealers' class. The Rev. J. H. Pemberton, who showed so well in the open amateurs' class for twenty-four blooms, had not really a bad flower in his box, the following being exceptionally fine—viz., Duchesse de Morny, Countess of Rosebery, François Michelin, Marie Verdier, Egeria, Marie A. Rigotard, Madame Charles Wood, Horace Vernet, Beauty of Waltham, Annie Wood, and Exposition de Brie. Mr. W. J. Grant, Ledbury, a good second, had A. K. Williams, Constantin Tretiakoff, Etienne Levet, Jean Soupert, and François Michelin in fine form. Mr. A. Tate, Wootton, Liverpool, was third, but the Judges had much difficulty in discriminating between his stand and those of three other exhibitors, to two of whom (Mr. G. P. Budd of Bath and Mr. W. Boyes of Milford) extras were ultimately awarded. Here were good flowers of Mabel Morrison, Capitaine Christy, Mrs. Laxton, Earl of Beaconsfield, Charles Darwin, and Charles Lefebvre. The only good Tea Rose in the Show a clean bold flower of Souvenir d'Elise. For twelve single blooms, open to amateurs, T. Tatham, Esq., Wilmslow Park, was first; Mr. J. Hudson, Bonsall, second; and A. Arkwright, Esq., Wirksworth, third. For six Teas Mr. Grant was first, Mr. Tate second, and Mr. W. Boyes, Milford, third.

In the local class for amateurs residing within six miles of Wirksworth Mr. G. J. Rowland, Matlock, was placed first, securing the bronze medal of the N.R.S. with very nice flowers, and Mr. J. Jaques, Wirksworth, second. For a centrepiece of Roses and Rose foliage there was a good competition by ladies, and some tastefully arranged devices were set up, Mrs. G. Bolas of Hopton securing the first prize, given by Lord E. Cavendish, M.P.; second Mrs. C. Wright, Wirksworth; and third Miss Bing, Biggin.

The display of baskets of Roses, although attractive and ample in their material, were generally inelegant and wanting in taste and lightness. The competition in buttonholes of Roses, for which good prizes were offered, was an unsatisfactory one, but a repetition of these classes should bring about an improved state of things on a future occasion. There was a marked want of pink and light Roses in the Exhibition, the dark shelly-petalled flowers greatly predominating. Exhibitors and all engaged will feel much indebted for the courtesy, liberality, and kindness extended to them by Mr. Wright the President, and for the attention and painstaking efforts of Mr. G. Allen the Hon. Secretary, and it is evident that a recurrence of Wirksworth Rose Show will by many be pleasantly anticipated. The display on Thursday was considerably enhanced by contributions not for competition from Mr. Smith of Darley Dale Nurseries; Messrs. R. Smith & Co., Worcester; the Rev. T. O'Grady of Hognaston Vicarage, and Mrs. Hurt of Alderwasley Hall; and amongst the contributors of prizes is the name of the Cranston Nursery and Seed Company (Limited), Hereford.

#### DARLINGTON.—JULY 16TH.

It is a long way from Leek to Darlington, not so much as to distance (which we hardly measure in railway travelling, for when you ask, "How far is such and such a place?" you are answered generally, "About an hour or so," as the case may be), but as to the time it takes. You have to cross the country, travel by various lines, wait at stations, so that it was fully seven hours and a half before I reached my destination to take my usual position of managing the judging arrangements at Darlington and taking part therein.

No greater contrast can possibly exist in Rose societies than in those of the two places mentioned. At Leek all is small, confined to local amateurs, and the highest class not exceeding twenty-four blooms. At Darlington all is large, nearly all the principal nurserymen and amateurs, except those who live in the far south where the Roses are over, were represented. The classes were large and numerous, and although the stereotyped seventy-two was absent from the nurserymen's class, yet sixty formed nearly as large and quite as effective a class; while those who live in the north, for whom the southern shows are too early, found, as is fitting for the National Society, a place here which they worthily fulfilled. We never see Messrs. Mack, or Hawkins, and others at them, while here they were, on their native heath, able to maintain a good place.

I have before alluded to the excellent arrangements made by my friend Mr. Whitwell for the Show. He is Secretary, Treasurer, and Committee, "three single gentlemen rolled into one." He collected all the funds, and is, in fact, the representative of that best of all governments—a beneficent despot. He is large-hearted, has no fads, and possesses an amount of energy enough for half a dozen. He has a most efficient Secretary in Mr. Byers, and a capital staff of workers, so that it is impossible for anything to go wrong that can in any way be preventible, and the praise for the arrangements was unanimous and given in no stinted measure. The Exhibition was held in the grounds of the Misses Pease at Southend Park, close to the town. These ladies most generously, at personal inconvenience, gave them up on that day for the purpose. The day, which in the morning looked very threatening, held up, and was very enjoyable, a fact which the people of Darlington seemed to appreciate, for with no other attractions than the Rose and a good military band nearly £170 was taken at the gates.

The character of the Exhibition was excellent. I have attended all the principal shows with the exception of that held at the Crystal Palace, and so am enabled to judge pretty well. The blooms were not as good as at Salisbury, where I think the Roses have been in better form than anywhere

else this season, but in both classes of amateurs and nurserymen there were some exceptionally fine blooms, a bloom of Marie Baumann in Messrs. Macks' box standing forth pre-eminently as probably the very best example of that grand Rose I have ever seen, and that in a year when that flower has not been in as good form as usual.

In the class for sixty Mr. B. R. Cant was first with the following flowers:—Souvenir de Mons. Boll, Baroness Rothschild, Dr. Andry, Catherine Mermet, Queen Victoria, Pierre Notting, Alfred Colomb, Marie Van Houtte, Fisher Holmes, Baron Gonella, Duchesse de Caylus, Madame Marie Verdier, Marguerite de St. Amand, La France, Charles Lefebvre, Merveille de Lyon, John Stuart Mill, Emilie Hausburg, Baron Bonstetten, Comtesse de Nadaillac, a magnificent bloom; Le Havre, Paul Neyron, Prince Camille de Rohan, Madame Charles Crapelet, Camille Bernardin, A. K. Williams, Jean Soupert, Marie Rady, Beauty of Waltham, Abel Grand, Comte de Paris, Duke of Edinburgh, Thomas Mills, Exposition de Brie, Lady Sheffield, Duke of Connaught, Maréchal Niel, Auguste Rigotard, Abel Carrière, Innocente Pirola, Duke of Wellington, François Louvat, La Boule d'Or, Ulrich Brunner, Madame Eugénie Verdier, Comtesse de Serenye, Dr. Sewell, François Michelin, Marie Baumann, and Prince Arthur. Messrs. Paul & Son were second with a nearly equal stand, and the Cranston Company third. In the class for twenty-four trebles Messrs. Paul & Son were first with Madame Prosper Langier, Merveille de Lyon, Sénateur Vaisse, Marquise de Castellane, Marie Verdier, Louis Van Houtte, Pride of Waltham, Maurice Bernardin, Marie Baumann, Countess of Rosebery, Madame Eugénie Verdier, A. K. Williams, Etienne Levet, Abel Carrière, Maréchal Niel, Edouard Andry, Baroness Rothschild, Marie Rady, Alfred Colomb, Ulrich Brunner, John Stuart Mill, Centifolia Rosea, and Camille Bernardin. Mr. B. R. Cant was second, and the Cranston Company third. In the class for thirty-six single trusses the Cranston Company was first with Madame Charles Wood, Madame Isaac Pereire, Louis Van Houtte, La France, Earl of Pembroke, Helen Paul, Le Havre, Comtesse de Nadaillac, Pierre Notting, Comtesse de Serenye, Baroness Rothschild, Victor Verdier, Eugène Delane, Baroness Rothschild, Rosieriste Jacobs, Comtesse d'Oxford, Henri Schultheis, A. K. Williams, Madame Margottin, Charles Lefebvre, Lælia, Ulrich Brunner, Merveille de Lyon, Reynolds Hole, Princess Beatrice, Prince Arthur, Princess Mary of Cambridge, Marie Verdier, Marie Baumann, Xavier Olibo, Thérèse Levet, and Sénateur Vaisse.

In the class for thirty-six singles, Division B, Messrs. Harkness & Co. were first with an admirable stand of well-coloured and well-formed Roses of the following varieties:—Alfred Colomb, Magna Charta, John Bright, Duc de Rohan, Madame Marie Verdier, Auguste Rigotard, Comtesse de Nadaillac, Etienne Levet, Maurice Bernardin, Marie Finger, Fisher Holmes, Beauty of Waltham, Baroness Rothschild, Le Havre, Antoine Ducher, Victor Verdier, A. K. Williams, Innocente Pirola, Duke of Edinburgh, Paul Neyron, Charles Lefebvre, John Hopper, E. Y. Teas, Dupuy Jamain, La France, Sir Garnet Wolseley, Madame Thérèse Levet, Pierre Notting. Messrs. Mack & Son were second with an excellent stand, in which the bloom of Marie Baumann already alluded to stood out conspicuously. In the class for twenty-four Teas, not less than twelve varieties, Mr. B. R. Cant was first with Catherine Mermet, Souvenir d'un Ami, Madame Willermoz, Niphotos, Maréchal Niel, Comtesse de Nadaillac, Etoile de Lyon, Souvenir d'Elise, Madame Angèle Jacquier, and Souvenir de Mons. Pernet. Messrs. Paul & Son were second.

I now turn to the amateurs, whose exhibits were, generally speaking, good, although Mr. Whitwell was not in his usual form, the season having been unfavourable to him; withal his stand of thirty-six was an excellent one. It contained Alfred Colomb, Marguerite de St. Amand, Dr. André, Marquise de Castellane, Pierre Notting, Etienne Levet, Duke of Edinburgh, Madame Charles Wood, Madame Hippolyte Jamain, Duke of Wellington, Auguste Rigotard, Madame Lacharme, Duchess of Bedford, Queen of Waltham, Mrs. Harry Turner, La France, Mrs. Baker, Abel Grand, Maurice Bernardin, Baroness Rothschild, A. K. Williams, Dupuy Jamain, E. Y. Teas, Merveille de Lyon, Abel Carrière, Princess Mary of Cambridge, Thomas Mills, François Michelin, Marie Rady, Helen Paul, Lord Macaulay, Madame Eugénie Verdier, and Duchess de Caylus. The Rev. J. H. Pemberton was a good second.

In the class for eighteen trebles Mr. E. R. Whitwell was again first with Alfred Colomb, Lord Macaulay, Paul Neyron, Abel Carrière, La France, Marie Baumann, Princess Mary of Cambridge, Duchess of Bedford, Emilie Hausburg, Camille de Rohan, Madame Hippolyte Jamain, Duke of Wellington, Annie Laxton, Queen of Waltham, Baroness Rothschild, Pierre Notting, and Camille Bernardin. The Rev. J. H. Pemberton was a good second. In the class for twenty-four singles the Rev. Lionel Garrett of Cheselton Rectory, Cheshire, was first with an excellent stand containing Thomas Mills, Charles Lefebvre, Ferdinand de Lesseps, La France, Louis Van Houtte, Sénateur Vaisse, François Michelin, A. K. Williams, Baroness Rothschild, Abel Carrière, Marie Rady, Abel Grand, Duke of Wellington, E. Y. Teas, Marie Verdier, Duke of Edinburgh, Le Havre, Duchesse de Caylus, Madame Noman, Mrs. Baker, Penelope Mayo, Madame Charles Crapelet, and V. Verdier. Mr. T. B. Hall came in second with an excellent stand of fine blooms.

In the class for twelve varieties Mr. T. B. Hall exhibited a remarkably fine box of flowers of great substance and richness of colour, consisting of Capitaine Christy, Duke of Wellington, Marie Verdier, Marie Finger, Beauty of Waltham, Fisher Holmes, La France, Duchess of Bedford, Alfred Colomb, Etienne Levet, Baroness Rothschild, Sir Garnet Wolseley. The Rev. Lionel Garrett was second with a fine box.

The local classes were not as well filled as might have been expected, but some good stands were shown in the class for twelve. Mr. J. Finlay was first with Mrs. Laxton, Mrs. Baker, Capitaine Christy, Alfred Colomb, Marie Baumann, Charles Darwin, E. Y. Teas, Baroness Rothschild, Exposition de Brie, Sultan of Zanzibar, A. K. Williams, and Madame Berard. Mr. Mitchell was second. In the class for nine varieties Mr. McLachlan was first with Black Prince, Constantine Tretiakoff, Marie Verdier, The Shah, E. Y. Teas, Général Jacqueminot, Boule d'Or, and Emilie Hausburg. Mr. J. Carnegie was second.

In the class for twelve Teas Mr. T. B. Hall had first prize with a good stand of clean blooms, consisting of Jean Ducher, Souvenir d'Elise, Niphotos, Souvenir d'un Ami, Marie Van Houtte, Madame Angèle Jacquier, Catherine Mermet, Anna Ollivier, Rubens, Madame Hippolyte Jamain, Louise de Savoie. In the class for six Mr. E. R. Whitwell was first with



Souvenir d'Elise, Niphetos, Madame Willermoz, Bouquet d'Or, Belle Lyonnaise, and Madame Hippolyte Jamain.

In the class for twelve Roses of one kind (light), Mr. B. R. Cant was first with Merveille de Lyon, and Mr. Mack second with Baroness Rothschild. In the same class (dark) Mr. May was first with A. Colomb, and Mr. Mack second with Marie Baumann. In yellows Mr. Cant was first with Maréchal Niel, and Messrs. Paul & Son second with the same. There was no competition in the class for Moss Roses.

I would like to take this opportunity of correcting a misprint in my account of the Wirral Show. Miss Hall's (of Larchwood) exhibit is described as a box. This is fatal to my idea of beauty. It was, in fact, one of those very pretty baskets of Burburax adopted by the National Rose Society, and very tastefully arranged. I want to ask whether there is not also a misprint in your account of the National Society's Show at Salisbury, where Mr. F. Cant is said to have won first prize with a box of Teas or Noisettes, all of one kind, with Boule de Neige. Ought it not to have been with Boule d'Or? This is not a small matter, because the former, being a white Rose, someone seeing it in this class might be tempted to place it amongst Teas, as nearly every year I have seen boxes of Teas disqualified for containing Souvenir de la Malmaison; and Mr. Cant is too good a judge to have put up H.P.'s instead of Teas.

The National Rose Society's medals for the best box in the amateurs' and nurserymen were won by Mr. E. R. Whitwell with his box of thirty-six, and Mr. B. R. Cant with his box of sixty.—D., Deal.

### THROUGH THE DUKERIES.

THE town of Sheffield although black, smoky, and unattractive in its most populous and busy parts, is yet especially favoured by Nature in having on its outskirts, and within easy reach by road or rail, so much that is beautiful and interesting both in nature and art.

On its south and western sides and coming almost close up to its outskirts are the Yorkshire moors and the romantic and beautiful Peak district of Derbyshire, while on its north-eastern boundary is the district known as the "Dukeries," comprising the once famous Sherwood Forest. Of the forest which extended originally from the immediate neighbourhood of Worksop to Mansfield and Nottingham, covering an area of 90,000 acres, but little remains in its primitive form, the most important portion which does so remain being a strip about five miles in length and two in width, and known as The Hays of Bilhaghe and Birkland, and extending from Thoresby (the princely seat of Earl Manvers) to the village of Edwinstowe.

By far the larger portion of what was once this majestic forest is now comprised in the magnificent parks and demesnes of Clumber, Welbeck, and Thoresby, belonging respectively to the Dukes of Newcastle and Portland and Earl Manvers, and a drive through which on a summer's day is one of the finest treats a lover of Nature and an admirer of forest scenery could possibly enjoy.

Reaching Worksop by rail a pleasant drive through the ancient and picturesque town and its outskirts soon brought us to the confines of the Clumber estate, at the entrance to which in the gardens attached to the lodge a splendid collection of standard Roses in full bloom made a fine display. A drive of some two miles through the finely timbered park, in which are some of the largest and finest Cedars of Lebanon to be found in England, brought us to the mansion, where we were met and conducted over the ornamental grounds by the courteous head gardener, Mr. M. Gleeson. The lawns are suffering much from continued drought, as they appear to have had less of rainfall in the district than almost any other part of the country. The bedding arrangements, however, are looking well, as they have been copiously watered. There is a considerable amount of carpet bedding, which is tastefully coloured, and the plants in which are growing freely. One of the most effective bedding plants used here and at Welbeck is Harrison's Musk; a number of large beds are edged with it, and very effective it proves, as it is very fine both in foliage and flowers, the latter being very profuse and bright in colour. Mr. Gleeson thinks it one of the best of all effective bedding plants. A plant also now seldom seen, but here effectively used in fine specimens for the centre of beds, is *Humea elegans*.

Occupying conspicuous positions on the lawns are some grand specimens of *Cedrus Libani* and Norway Spruce, both of which appear to have found a genial home at Clumber; the specimens of the latter are, I believe, second in size and magnificence only in this country to those at Studley Royal. A fine feature of Clumber is the extensive lake fronting the hall, which is about one mile and half long, and in its wider parts half a mile wide, and covers about 150 acres, a fine three-masted frigate (the *Lady Lincoln*) occupies a conspicuous position in its centre.

Bidding farewell to Clumber, and proceeding onwards through the park, a drive of about two miles brings us to Thoresby. We do not stay here, but in passing along the drive within a very short distance of the mansion obtain a fine view of it and the terraced garden on the south front. The mansion, which has been erected by the present Earl Manvers, is a very imposing pile in the Elizabethan style, and is one of the most splendid of our many English baronial residences. The gardens under the skilful management of Mr. A. Henderson have long been celebrated for high-class cultivation, but these we had not an opportunity of inspecting.

The park, which, like those of Welbeck and Clumber, was carved out of the old Royal Forest of Sherwood, is splendidly wooded, and is considered by competent judges to be one of the finest examples of park scenery in the kingdom; a short drive across which brings us to the Hays of Bilhaghe and Birkland before mentioned, and which are extremely interesting and attractive both to the lovers and admirers of bold forest scenery and to the students of English history, as here are to

be seen in immense numbers the veritable trees under which King John and his hold harons hunted the stag 600 years ago, and under which many a jovial carouse has been held by Robin Hood and his merry men.

Sherwood Forest appears to have been a favourite hunting ground of the Plantagenets, who converted Nottingham Castle into a Royal residence and built another at Clipstone between Thoresby and Mansfield, where King John (whose initials, carved in the bark 600 years ago, have been found deeply embedded in the trunks of trees recently cut down) spent much of his time.

Bilhaghe is a forest of Oaks, and very patriarchs do they appear with their gnarled and knotted stems of great size and of good preservation considering their great age, though many of them have suffered more or less of mutilation by the countless storms which have swept over them. It is truly surprising to see how healthy is the foliage and vigorous the growths these relics of former ages are still making. Birkland, which is in a continuous line with Bilhaghe and farther from Thoresby, consists for the most part of Birches, equally ancient with the Oaks but better preserved.

Almost at the extremity of Birklands, and near a path leading from the village of Budby to Edwinstowe, stands the "Major Oak." This noble tree is one of the greatest attractions in the Forest, and is a veritable giant in size, and still most beautiful in its luxuriant foliage and great spread of branches. Underneath its branches we found, with an oaken log for a seat, a patriarchal-looking man who stated he was eighty-six years of age, and who gains a livelihood by selling to visitors photographic views of this celebrated tree. The old man is yet quite hale and vigorous, and, as was remarked by one of our party, looked as though he may probably be able to continue his present occupation up to 100 years of age. A tablet affixed to the tree gives its dimensions as follows:—Girth of stem and roots at base or ground line, 54 feet; girth 1 foot above the ground, 32 feet; girth at 3 feet from the ground, 29 feet; mean girth, 38 feet 4 inches. Inside the hollow stem is a sufficiency of room for a party of four or five men to move about with ease.

Proceeding upon our journey we soon arrive upon the outskirts of Welbeck Park, which we enter by the way of what is called the "Duke's Drive," a well-kept gravel roadway bounded on each side by belts of woodland and some 40 or 50 yards in width of level turf and from six to seven miles in length, forming one of the finest grassy avenues in existence. At frequent intervals all along this and the numerous other drives on the Welbeck estate are gates with a large and comfortable lodge attached to each as a residence for the gatekeeper erected by the late Duke. On our way along this drive we pass the "Shambles Oak," on which it is said Robin Hood hung his venison, the iron hooks used by him for that purpose being until recently shown to visitors still fastened in their original place in the tree; but, as we were told by the man in charge, a little more than a year since the tree was wantonly set on fire by some youths, which burnt out a large portion of the stem, including that part containing the hooks.

Nearer to Welbeck we pass the "Greendale Oak," originally one of the largest and finest trees in the Forest, but which has been sadly mutilated by a former Duke of Portland, who, it is said, staked a large sum of money on a wager that he would drive a coach and four horses through the middle of its stem, which remarkable feat he accomplished by having the stem hollowed out so as to leave a mere shell on each side, and which is now supported and kept up by scaffolding and poles.

Arriving at Welbeck Abbey a short stay is made, during which our party is shown through the conservatories and over a large portion of the lawns, shrubberies, and flower gardens, also through some of the wonderful underground roadways and the magnificent riding school erected by the late Duke. The most interesting portion of the conservatories, which are very extensive, is the rosery—a very large square building covered with a ridge-and-furrow glass roof, which is supported on iron columns. The Roses, which appear to be nearly all Teas, are planted out in beds of different sizes and shapes, which beds are intersected in all directions by gravel paths about 3 feet wide. The Roses, which comprise large bushes of all the best sorts, are flowering well and freely, and are in the most robust and vigorous health—no trace of mildew apparent nor any green fly. I have never seen Roses under glass looking better. In the tropical portion of the conservatory are both ornamental-foliage and flowering plants, all very healthy and clean.

In the flower garden the bedding-out is exceedingly bright and effective. No carpet bedding is done; but the beds, which are very numerous, are mostly circles and oblongs, and are nearly all planted as self beds, with one or sometimes two rows of some dwarf plant as edging. The most effective edgings here used are Harrison's Musk and a variety of *Lobelia* they call *Endcliffe Queen*, a very free-blooming and effective variety much like *pumila magnifica*, but apparently a better grower; also a larger and brighter flower, colour light azure blue with a conspicuous white eye. A number of self beds of *Iresine Lindenii* edged with this *Lobelia* are exceedingly effective, the *Iresine* being large strong plants with fine high-coloured foliage. One of the most remarkable and effective features of the bedding display are the standard Zonal *Pelargoniums*, one plant of each of which is occupying the centre of many of the circular beds. These standards, I was told, are six to eight years old, and are grafted at about 2 feet high on strong seedling stocks. The heads are about 2 feet across, very dense and well furnished, and are completely solid with bloom, especially those grafted with *Vesuvius*. The effect from a distance is very fine, and causes the uninitiated at once to speculate as to what they can be, looking as they do in size and



outline like standard Roses; but no Roses ever shone so brightly. Several varieties are used, but by far the most numerous and effective is Vesuvius. Leaving Welbeck, a pleasant drive of about four miles along country lanes brings us back to Worksop, eventually arriving at Sheffield, a thoroughly enjoyable day having been spent by all.—W. K. W.

### ROYAL HORTICULTURAL SOCIETY.

#### FRUIT AND VEGETABLE SHOW.—JULY 22ND.

THE combined attractions of the fruit and vegetables, the Carnations and Picotees, and the plants submitted to the Floral Committee, formed an Exhibition of varied interest such as has not been seen at Kensington for some time. The conservatory was filled with exhibits, a central line of tables being occupied, in addition to the usual side tables, the whole length of the building. The fruit and vegetables were particularly good, the Show proving thoroughly satisfactory in all respects. Grapes and Pines were uncommonly well represented, small fruits being in good numbers, while the vegetables were as clean and fine as could be wished.

**Collections.**—Prizes of £5, £4, and £3 were offered for a collection of fruit, not more than two varieties of any one kind, Grapes and Pine Apples being excluded. This was to encourage larger and more diversified exhibits than are usually seen at shows, and proved successful, as four very fine collections were staged. The premier honours were assigned to W. H. Long, Esq., M.P., Rood Ashton Park, Trowbridge, Wilts (gardener, Mr. Miller), for some handsome produce, comprising sixteen varieties—viz., Violette Hâtive and Barrington Peaches large and well ripened, Pine Apple and Downton Nectarines similarly good, President and Adair Strawberries, Early Purple and Blue Gage Plums, Warrington and Telegraph Gooseberries, Scarlet Premier Melon beautifully netted, Eastnor Castle Melon, Grape and Black Naples Currants, Monstrueuse de Lipari Figs, and Raspberries. Mr. Goldsmith, Hollenden, Tonbridge, followed, his best dishes being the Peaches, Nectarines, Currants, Cherries, and Strawberries—all fine well-matured fruits. E. D. Lee, Esq., Hartwell House, Aylesbury (gardener, Mr. Robins), was third; Hero of Lockinge Melon, Stirling Castle Peaches, and Humboldt Nectarines being very notable for their large size and good appearance.

**Pine Apples.**—There was a wonderful display of these, and some fruits of unusually good quality were staged. The leading class was for four Pines, in which there were the same number of competitors. Mr. R. Nicholas gained the premier award for magnificent, even, finely coloured fruits of Smooth Cayenne, two weighing 8 lbs. each, and the other two 8½ lbs. each. These were grand samples and attracted much admiration. Mrs. L. H. Vivian, Singleton, Swansea (gardener, Mr. J. Harris), took the second place with good but less regular fruits of Queen. Lord Carrington, Wycombe Abbey, Bucks (gardener, Mr. G. T. Miles), was third with two Queens weighing 5½ lbs. and 5¼ lbs. each, and two Smooth Cayenne weighing 4½ lbs. Four competitors also entered in the class for two Pines, Mr. Nicholas again taking the lead with Smooth Cayenne, 8½ lbs. each, as handsome and praiseworthy as those in the preceding class. The second-prize fruits were good Queens, but the name of the exhibitor was not attached. The third place was taken by C. Eyre, Esq., Welford Park, Newbury (gardener, Mr. Ross), with Smooth Cayenne, handsome fruits, but not so large as the first.

In addition to these Mr. Nicholas exhibited a dozen of the finest Pine Apples that have ever been shown, all Smooth Cayenne, none being under 7 lbs. in weight, and one enormous fruit with a double crown was 10 lbs. An extra prize was awarded for this remarkable exhibit, which proved Mr. Nicholas to be one of the leading Pine-growers of the present time.

**Grapes.**—Five classes were devoted to these, and the quality throughout was most satisfactory; indeed in several instances the exhibits were of extraordinary merit. Seven lots of three bunches of Black Hamburgs were staged, Sir A. W. Macdonald, Bart., Woolmer Lodge, Liphook, Hants (gardener, Mr. Tavener), was awarded the leading prize for grand bunches, with large well-developed berries, superbly coloured, with a dense black bloom. Mr. Edmonds was second with wonderfully large bunches, but somewhat rubbed. C. S. H. Thellusson, Esq., Brodsworth Hall, Doncaster (gardener, Mr. Chuck), was third with finely coloured smaller samples.

In the Duke of Buccleuch class there were three competitors, all showing specimens distinguished by the great size of their berries, the bunches being of moderate size. F. C. A. Daw, Esq., Homefield, Ealing (gardener, Mr. J. Baird) was first with beautiful clean samples; Mr. Roberts, The Gardens, Gunnersbury Park, following closely with very similar samples, Mr. Chuck securing the third prize with smaller bunches, but containing enormous berries.

The competition was keener in the class for three bunches of Muscat of Alexandria, six lots being entered, but none were in first-rate condition as regards colour. Mr. Edmonds won the first place with fine bunches and clear handsome berries; Sir Philip Rose, Bart., Rayners Park, Bucks (gardener, Mr. Cakebread), being second with fairly coloured samples. Mrs. Tristram, Fowley, Liphook, Hants (gardener, Mr. Edwards), was third with smaller bunches and berries.

The Madresfield Court class only brought two exhibitors, Mr. Roberts deservedly securing first honours for magnificent bunches, with wonderfully fine berries, and superbly coloured. Mr. T. Heath, Northfield House Gardens, Henley-on-Thames, was second with wonderfully fine bunches and berries, but not nearly so well coloured as the preceding; in fact they were scarcely in fit condition for cutting, though the cultural requirements of the variety are evidently thoroughly understood by Mr. Heath.

Five competitors entered in the any other variety class. Mr. W. Tidy Stanmore Hall, Great Stanmore, taking the lead with Black Alicante, very handsome, beautifully coloured, large, and even. Mr. Herrin, The Gardens, Chalfont Park, Gerrard's Cross, was second with superbly ripened Foster's Seedling; Mr. Roberts being third with the same variety, much larger in bunch, but rather green.

**Melons.**—There was a strong competition in the class for two Melons, any variety, seventeen pairs being staged. Viscount Eversley, Heckfield, Winchfield (gardener, Mr. Wildsmith), gained the leading place with Sutton's Scarlet Invincible, beautifully ripened; R. H. C. Neville, Esq., Wellingore, Grantham, (gardener, Mr. T. Hare), followed with an unnamed green-flesh and finely netted variety. Mr. Ward, The Gardens, Longford Castle, Salisbury, was third with High Cross Hybrid, finely netted.

**Peaches and Nectarines.**—These were admirably represented, there being eight competitors with the former and fifteen with the latter. For dishes of Peaches Lady H. Somerset, Eastnor Castle, Ledbury (gardener, Mr. Coleman), took the first position with Royal Kensington and Bellegarde, beautiful fruits, well ripened. Mr. Robins was second with Stirling Castle very large, and Barrington, fine; Mr. J. Read, Mont Mount, Mill Hill, being third with Royal George and Grosse Mignonne, smaller. The Nectarines were superb, especially the magnificently coloured examples of Lord Napier from Mr. Roberts, which were placed first. Mr. Wallis, Keele Hall Gardens, was second with Elruge, and Mr. Robins third with Lord Napier of good colour, but not so large as the first.

**Strawberries.**—The display of these was fairly good in two of the three classes. Four lots of two dishes were staged, Mr. Edmonds leading with Duke of Edinburgh and Sir Joseph Paxton finely coloured. Mr. Chuck was second with Oxonian and the Duke of Edinburgh, a very few points behind; H. Waterhouse, Esq., Newbury (gardener, Mr. Maber) following with Sir Joseph Paxton and James Veitch. A class was devoted to the Old Hautbois, but only two rather poor dishes were entered—namely, by Mr. Ward and Mr. Haines, Coleshill House Gardens, Berks, who were awarded the second and third prizes. For one dish of any other variety there were twelve competitors. Mr. Goldsmith was first with Sir Joseph Paxton, very handsome; Mr. Chuck followed with British Queen, and Mr. Edmonds, Bestwood Gardens, Arnold, Notts, was third with Duke of Edinburgh.

In other classes the competition was keen. Thus ten dishes of Cherries were staged, Mr. Coleman taking the first place with Bigarreau Napoleon, followed by Messrs. Miles and Hudson with the same variety. Messrs. Waterman, Chadwick, Ford, Walker, and Goldsmith were the prizetakers with Gooseberries, all showing remarkably good samples, especially the first-named. Figs, all Brown Turkey, were contributed by Messrs. Wallis, Roberts, and Ward, who won the prizes in that order; Raspberries being shown by Messrs. Walker and Chadwick, and Currants were well represented by the exhibits from Messrs. Robins, Ross, and Ford.

**VEGETABLES.**—Ten handsome collections of vegetables (eight kinds) were contributed, all very close in merit and most creditable to the exhibitors. The premier award was secured by Mr. Haines, Coleshill House Gardens, Highworth, for beautiful clear examples of Autumn Giant Cauliflowers, Telegraph Peas, Green Globe Artichokes, Nantes Horn Carrots, Trophy Tomatoes, Early White Naples Onions, Moore's Cream Marrow, and Veitch's Ashleaf Potatoes. Mr. Miles was a close second, his Italian Tripoli Onions being remarkably fine. Stamfordian Tomatoes were also a strong feature in his collection. Mr. Ward was third with a good collection, including Red Flat Tripoli Onions, very fine, and Tender and True Cucumber.

For six dishes of Peas Mr. Marriott, Boston, Lincolnshire, was first, showing grand pods of Carter's Commander-in-Chief, Johnson's Fillbasket, House's Perfect Marrow, Evolution, Webb's Wordsley Wonder, and Carter's Telegraph. Mr. Muir, The Gardens, Margam Park, and Captain Le Blanc, Northaw House, Barnet (gardener, Mr. J. May), followed in that order, six lots being entered.

Potatoes were shown in abundance, very even and clean. Fourteen collections of three varieties were staged, Mr. Meads gaining first honours with Welford Park, Woodstock, Kidney, and Henderson's Kidney, all clean and good tubers. Equal second prizes were adjudged to Mr. Ford and Mr. Haines, whose best dishes were Prizetaker, Prolific Kidney, Rivers' Royal Ashleaf, and Woodstock Kidney. Mr. C. Herrin was third with International Kidney, very fine. Kidney Beans were represented by eighteen dishes, Mr. Miller leading with Canadian Wonder, Mr. Ward and Mr. Waterman following closely with the same variety. Mushrooms were shown by Messrs. Hudson, Herrin, and Haines, who were the prizetakers. Tomatoes were admirably represented by thirteen dishes, twelve fruits each, Mr. Edwards being first with Veitch's Criterion, beautiful even highly-coloured fruits; Mr. Cakebread second with Hathaway's Excelsior, similarly fine; and Mr. R. Farrance, Chadwell Heath, Essex, third with Selected Trophy.

Cucumbers were largely represented, four brace of prickly varieties and fourteen brace of smooth varieties being entered. In the former class Mr. Woodham was first with Pearson's Long Gun, handsome even fruits 22 inches in length. Mr. Ward second with Duke of Edinburgh, small but neat; and Mr. Meads third with the same variety. The best smooth fruits were Tender and True from Mr. Gilmore; the same variety from Mr. Richards, The Gardens, Somerley House, Ringwood, being second; and Mr. Waite, Glenhurst Gardens, Esher, was third with Cardiff Castle.

**SPECIAL PRIZES.**—A number of firms offered special prizes for vegetables, and the competition was good for the majority, the awards being as follows:—Messrs. Carters' prize for four dishes of Peas Stratagem, Telephone, Pride of the Market, and Culverwell's Telegraph brought six competitors—Mr. Marriott; Mr. Wiles, Edgote Gardens, Banbury; Earl of Radnor; Mr. Osman, and Mr. R. Phillips, The Cedars, Meopham, Kent, securing the honours in that order. Messrs. Webb & Sons' prizes for a dish of Wordsley Wonder Peas were keenly competed for, eleven dishes being staged. Mr. H. Marriott was first with fine samples; Mr. J. Cook, Boston, second; and Mr. Muir third. Mr. T. Laxton, Bedford, offered prizes for Evolution Pea and John Harrison Long-pod Bean, the former being secured by Mr. Marriott with wonderful specimens; the Hon. G. J. Goschen, Hawkhurst; and Mr. Gilbert, The Gardens, Burghley, thirteen dishes being entered. Mr. Miles was first with the Beans, followed by Mr. Osman, and E. Williams, The Gardens, Peasmarsh, Sussex. Mr. House's prize for a dish of the Perfect Marrow Pea brought three competitors, Mr. Marriott being again first with fine specimens. Messrs. J. Wheeler & Sons, Gloucester, offered two prizes for Cucumbers Empress of India and Duke of Cornwall, but there was only one exhibit, Mr. G. Steggle, Faulkner's House, Hadlow, Tonbridge, being awarded the second prize.

#### COMMITTEES.

The exhibits before the Fruit and Floral Committees were not very numerous, but the new plants and miscellaneous collections of flowers made a good show.

**FRUIT COMMITTEE.**—Present: Harry J. Veitch, Esq., in the chair, and Messrs. J. Lee, G. Bunyard, W. Denning, G. Goldsmith, C. Ross, G. Paul, Sidney Ford, J. Roberts, A. Howcroft, James Smith, H. Webb, and R. D. Blackmore.



Mr. T. Laxton, Bedford, sent plants of The Captain Strawberry, to show its perpetual bearing character. The Committee expressed some approval of it, and the variety is to be tried at Chiswick. Several Melons were shown, but none was considered sufficiently meritorious to deserve any special recognition. Peas were shown by several exhibitors, Mr. Walker of Thame sending a box of New Zealand Peas with small neat full pods, and good examples of House's Perfect Marrow Pea were contributed.

FLORAL COMMITTEE.—Section A.—Present Mr. J. Fraser in the chair, and Messrs. E. Hill, J. Dominy, J. Woodbridge, J. Hudson, H. Herbst, J. Laing, G. Henslow, H. Williams, and James O'Brien. Section B.—Present Mr. Shirley Hibberd in the chair, and Messrs. G. Duffield, C. Green, W. Bealby, G. F. Wilson, J. James, W. B. Kellock, H. Cannell, H. Turner, and J. Douglas.

A fine stand of Iris Kämpferi varieties and seedling Japanese varieties was shown by Messrs. J. Veitch & Sons, the flowers were remarkably large in size and diversified in colour. The same firm also sent a box of handsome Ceanothuses, comprising C. Arnoldii, C. azureus, C. albidus, and C. Gloire de Versailles; and also a group of dwarf hybrid Rhododendrons in pots, many of the varieties being of exceptionally good colour. A vote of thanks was awarded to the Chelsea firm for a fine plant of Styrax japonica. Messrs. J. Carter & Co., High Holborn, sent a basket of a new dwarf Tropæolum, named "Beauty of the Border." This, a peculiarly striped and mottled variety, the prevailing colours being crimson and yellow, is a decided novelty. A basket of Rhodanthe Manglesi alba was also sent by the same firm. F. A. Phillbrick, Esq., Bickley, sent a plant of Oncidium cernuum, and Mr. Bridger, Penshurst Place, a stand of a yellow Carnation called Pride of Penshurst; the variety is pure yellow in colour and very free flowering. Cut blooms of seedling Carnations were sent by Mr. R. H. Munday, Basingstoke, and cut flowers of Montbrettias Pottsii and crocosmæ-flora from the New Plant and Bulb Company, Colchester. Messrs. Laing and Co., Forest Hill, sent two bunches of Laxton's Invincible, Carmine, Sweet Pea of good colour. From Messrs. Paul & Son, Cheshunt, came flowers of Campanula Tenorii and C. turbinata pelviflora, plants of Herniaria glabra aurea, Omphalodes Lucilæ, Euphorbia amygdaloides, and other plants. They also showed a Hybrid Perpetual Rose, named Madame Norman Neruda, of bright carmine colour. A vote of thanks was accorded to Messrs. Jacob Makoy & Co., Belgium, for Anthericum latifolium albo-pictum, a variety with elegantly striped leaves.

The following plants received first-class certificates:—

*Cattleya Gaskelliana* (De Barry Crawshaw, Esq., and Messrs. F. Sander and Co.).—Mr. Crawshaw's was a really grand plant, the flowers being of great size and very rich in colour.

*Dendrobium Griffithianum* (Sander).—A splendid spike of clear yellow flowers rendered this plant particularly noteworthy.

*Aerides Houletii* (B. S. Williams).—An excellent plant, bearing a large cluster of blooms.

*Begonia, Ruhm Von Erfurt* (Cannell).—This is a wonderfully brilliant scarlet variety, double and single flowers being borne freely on the plant, which should prove a most valuable sort.

*Tea Rose, Madame Eugene Verdier* (Paul).—This variety possesses a most pleasing yellow colour, and the blooms are of good size.

*Spiræa bullata* (Paul).—A very dwarf crimson variety, very compact in growth.

*Lathyrus latifolius delicatus* (R. Dean).—A very appropriately named variety, the flowers being veined with rose-coloured lines in a very attractive manner.

*Pelargonium Madame Thibaut* (Bealby).—A new Ivy-leaved variety, the flowers being double and bright carmine in colour.

*Gladiolus hybridus Lafayette* (Veitch).—New, and bearing flowers of immense size, buff colour with crimson throat.

*Clematis coccinea* (Veitch).—A basket of this was shown, the flowers presenting a very pleasing appearance. They are orange-scarlet in colour, and present a striking contrast to any others of the genus.

*Prunus Pissardii* (Veitch).—This was a striking plant with dark purple leaves. It should prove to be one of the most handsome of ornamental shrubs.

*Rhododendron Empress* (Veitch).—A splendid variety, and one of the finest of the many hybrids Messrs. Veitch have raised. The flowers were of a bright salmon-rose colour.

*Rosa lucida var. Rose Button* (Veitch).—This is a most charming little double Rose, the flowers being shown in bunches. It is remarkably floriferous, of a bright rose colour.

Miscellaneous Groups.—A remarkably fine collection of hardy cut flowers from Mr. T. S. Ware, Tottenham, attracted great attention, it being very bright and diversified, and the colours most tastefully arranged. Of the many fine groups of this description exhibited by Mr. Ware this season this is undoubtedly one of the best. Messrs. J. Laing & Co., Forest Hill, staged a magnificent collection of Begonias, which occupied the centre of one of the tables. The colours of many were most brilliant, and the group formed one of the most striking features of the Show. Messrs. Paul & Son, Cheshunt, showed a large and handsome group of perennial Phloxes, a well-flowered plant of *Lathyrus latifolius splendens*, and three admirable specimens of *Thua occidentalis erecta viridis*.

## CARNATION AND PICOTEE SOCIETY'S SOUTHERN SHOW.

JULY 22ND.

THERE was a goodly gathering of the southern Carnation and Picotee growers at Kensington on Tuesday last, and it was satisfactory to find that the number of exhibitors is increasing. The blooms were generally good, but those from Slough were superb, and well deserved the abundant honours they secured for Mr. Turner. As usual, there was a great disparity between the leading collection and the third, fourth, and fifth stands, most of these including small and occasionally rough blooms, but throughout there was a most satisfactory clearness and purity of colour.

The premier Picotee was, after a careful search, found in the single bloom classes, a beautiful example of Muriel from Mr. C. Turner; and the premier Carnation was selected from one of Mr. Dodwell's stands, a fresh clean bloom of Master Fred.

## THE VEITCH MEMORIAL PRIZES.

As at the Auricula Show earlier in the season, the most valuable and important prizes were those offered by the Veitch Memorial Trustees, which consisted of a Memorial medal and £5 for the best twelve Carnation blooms (Selfs and Fancies included) and six Picotee blooms, open only to amateurs and gentlemen's gardeners. Though the prize and medal might have been thought to furnish sufficient inducement for a good competition, only one collection was staged—namely, by Mr. James Douglas, gardener to F. Whitbourn, Esq., Great Gearies, Ilford, who was awarded the substantial honours for blooms which would not have been easily surpassed, and the probable presence of this redoubtable grower may have had a deterrent effect upon other would-be exhibitors. The blooms were all fresh, clean, and handsome, the following varieties being represented:—*Carnations*.—Back row—J. Douglas, Wm. Skirving, H. Cannell, and Admiral Curzon. Second row—T. S. Ware, Rob Roy, Miss Gorton, and Florence Nightingale. Front row—Jessica, Squire Whitbourn, Seedling (Dodwell), and J. Crossland. *Picotees*.—Brunette, Her Majesty, Zerlina, Constance Heron, Mrs. Payne, and Mrs. Gorton.

## CARNATIONS.

Taking the other classes in the order of the schedule, the Carnations first demand notice, the leading class being that for twenty-four blooms, not less than twelve distinct varieties, of which five collections were staged. Mr. C. Turner, Slough, won the chief award with very handsome blooms, as clean and bright as could be wished, arranged as follows:—Back row—Tim Bobbin, Florence Nightingale, John Keat, Mayor of Nottingham, Sybil, J. Douglas, Rob Roy, and Mayor of Nottingham. Second row—Wm. Skirving, Matador, Sir G. Wolesey, Mrs. Bridgewater, Wm. Skirving, Matador, Master Fred, Jessica. Front row—Jessica, Squire Penson, Robert Lord, Mrs. Barlow, Squire Llewelyn, Florence Nightingale, and A. Medhurst. Closely second was Mr. J. Douglas, who had remarkably fine blooms of Florence Nightingale, Wm. Skirving, Jessica, T. Moore, and Squire Whitbourn. Mr. E. S. Dodwell, Oxford, was third with an even collection; Messrs. Hooper, Bath, being fourth, and Mr. J. Hines, 81, Boamford Road, Ipswich, fifth.

The competition was much keener in the class for twelve blooms, dissimilar, seven exhibitors entering. Mr. J. Douglas took the lead with fresh and bright examples of a seedling (Dodwell), Miss Helen Lodge, Arthur Medhurst, J. Douglas, Florence Nightingale, Wm. Skirving, Rob Roy, J. Douglas, George, Sarah Payne, John Bayley, W. M. Hewett. The second place was secured by Mr. E. S. Dodwell, who had some very good blooms, the remaining prizes being taken by Mr. J. Lakin, Temple Cowley, Oxford; Mr. J. Hines; Mr. J. Buxton, Manor Street, Clapham; and Mr. S. Brown, Handsworth, the blooms in these stands being smaller and less smooth than the first two.

Of six blooms half a dozen boxes were shown, Mr. M. Rowan, Manor Street, Clapham, winning first honours with Mars, Falconbridge, Master Fred, Miss Erskine Wemyss, Florence Nightingale, and George, all good blooms. Mr. Arthur Brown followed with an even collection; Mr. T. Austiss, Brill, Bucks; Mr. M. Slack, Queen Street, Chesterfield; and Mr. H. Catley being respectively third, fourth, and fifth.

SINGLE SPECIMEN BLOOMS.—As usual there was a large number of beautiful blooms entered in these classes, but from comparatively few growers, one or two securing the majority of the prizes. *Scarlet Bizarres*.—Mr. C. Turner won first and third with Robert Lord, second with Master Fred, and fourth with James MacIntosh. Mr. E. S. Dodwell was fifth with an unnamed flower, as were most of his specimens. Thirty-four blooms were staged. *Crimson Bizarres*.—Mr. E. S. Dodwell was first and fourth, Mr. C. Turner second with A. D. Southgate, third with Thomas Moore, and fifth with E. S. Dodwell. *Pink Bizarres*.—Mr. C. Turner was first, third, and fourth with William Skirving, second and fifth with Squire Llewelyn. Twenty-two blooms were entered. *Purple Flakes*.—Mr. J. Douglas was first with Florence Nightingale and fourth with Squire Whitbourn; Mr. C. Turner being second, third, and fifth with Florence Nightingale. *Scarlet Flakes*.—Mr. E. S. Dodwell was first and fourth, and Mr. C. Turner second, third, and fifth with Matador. Twenty-four blooms were staged. *Rose Flakes*.—Mr. C. Turner was first and third with Jessica, second with Mrs. Bridgewater, and fourth with Rob Roy; Mr. J. Douglas being fifth with Jessica.

## PICOTEES.

A pretty display was made in the classes for Picotees, and the blooms on the majority were of excellent quality. The class for twenty-four blooms, not less than twelve distinct varieties, was the most important, five admirable stands being entered. Mr. C. Turner won the leading position with large, handsome, and wonderfully clear blooms of the following:—Back row—J. B. Bryant, Juliette, Mrs. Webb, Her Majesty, Jessie, Mrs. Gibbons, Orlando, Duchess. Second row—Mrs. Rayner, Louisa, Muriel, Mrs. Payne, J. B. Bryant, Zerlina, and Ethel. Front row—Dr. Epps, Mrs. Talton, Luey, Her Majesty, Mrs. Chancellor, Maude, Royal Visit, and Muriel. Mr. J. Douglas was second with smaller but very neat fresh blooms. Mr. E. S. Dodwell was third, Mr. J. Hines fourth, and Messrs. Hooper fifth.

Six stands were contributed in the class for twelve blooms, Mr. J. Douglas winning the premier honours with a very creditable collection, even, substantial, and surprising clear and bright in colours. The varieties were:—Back row—Mrs. Bower, Constance Heron, Jessie, and Clara Penson. Second row—Mrs. Payne, Her Majesty, Zerlina, and Estelle. Front row—Ethel, Princess of Wales, Miss Lee, and Mrs. Chancellor. The next position of honour was accorded to Mr. Dodwell for fine specimens of Jessie Brunnetts, Mrs. Payne, Tinnie, and Novelty, amongst others. Mr. Lakin was third with small blooms, Mr. Buxton fourth, Mr. T. Welton, Rectory Grove House, Clapham, fifth, and Mr. Haines sixth.

The same number of competitors entered the class for six Picotees as in the corresponding Carnation class—namely, six. Mr. T. Austiss was placed first with even samples of Favourite, Her Majesty, Mrs. Dodwell, Royal Visit, Mrs. Payne, and Mrs. H. Chancellor. Messrs. Catley, Rowan, A. Brown, and Meddick were the other prizetakers in this class, the majority showing small blooms.

SINGLE SPECIMEN BLOOMS.—These were well represented, but the same remarks will apply to them as to the Carnation classes. *Red heavy-edged*.—Mr. Turner was first, second, and third with J. B. Bryant, fourth with Brunnette, and fifth with Princess of Wales. Thirteen blooms were entered. *Red heavy-edged*.—Mr. C. Turner was first and second with Mrs. Brown, third



and fourth with Mrs. Gorton, and Mr. Douglas was fifth with Violet Douglas. Ten blooms were staged. *Purple heavy-edged*.—Mr. C. Turner secured all the five prizes with Muriel. There were ten blooms. *Purple light-edged*.—Mr. Turner was first and second with Her Majesty; Mr. Douglas being third with Nymph, fourth with Clara Penson, and fifth with Her Majesty. Nineteen blooms were entered. *Rose or Scarlet heavy-edged*.—Mr. C. Turner was first, fourth, and fifth with Mrs. Payne, second with Royal Visit, and Mr. Dodwell was third. Twenty blooms were staged. *Rose or Scarlet light-edged*.—Mr. Austiss was first and fourth with Favourite, Mr. Turner being second with Ethel, third with Evelyn, and fifth with Empress Eugenie. Twenty-two blooms were entered. *Yellow Grounds*.—Mr. Douglas was first, third, and fourth with Ne Plus Ultra, Mr. Turner being second with Janira and fifth with Mrs. Cavill. There were twenty-six blooms.

#### SELS, FANCIES, OR YELLOW GROUNDS.

Quite distinct from the preceding, and having a pretty effect in contrast with them, were the exhibits in the three classes of this section. The stands were extremely bright, and the diversified rich colours served to considerably relieve the monotony of the other blooms. With twenty-four blooms, not less than twelve varieties, Mr. C. Turner was adjudged chief honours for extremely bright and beautiful blooms very tastefully arranged as follows. Back row—Mary Morris, Lady Cathcart, The Governor, E. S. Dodwell, Lady Stamford, and Matador. Second row—W. P. Milner, Reverse, Elegant, Jessica, Florence Nightingale, and Lady Cathcart. Third row—Seedling, Mrs. Bridgewater, Sir G. Wolseley, Edith, Matador, and Jessica. Front row—Flirt, Edith, Virgo, Thos. Tomes, Unexpected, and Florence Nightingale. Mr. J. Douglas, who was second, had fine blooms of Arthur Medhurst, Rob Roy, Fancy Flake, and Queen. Messrs. Hooper were third and Mr. H. Catley fourth. Mr. E. S. Dodwell had a beautiful stand of twelve blooms, for which he was awarded first honours in that class, showing Florence, Miss Erskine Wemyss, Dean Wood, Dot, Mrs. Chamness, and some seedlings. Messrs. Lakin, Austiss, Hyam, and Meddick were the prizetakers in that order.

Four handsome collections of twelve yellow ground Picotees were also staged, but the premier stand from Mr. C. Turner was especially fine, including the following varieties:—Back row—Prince of Orange, Janira, and the same varieties repeated. Second row—Dove, Starlight, Eleanor, and Starlight. Front row—Mrs. Cavell, Lady M. Lascelles, Mrs. Cavell, and Mazzini. Mr. J. Douglas followed with blooms that were but few points inferior to the others. Ne Plus Ultra and Prince of Orange were uncommonly fine. Messrs. Hooper were third and Mr. Catley fourth.

*Plants in Pots*.—These formed but a very moderate display, as only two collections were entered. The class was for nine specimens in pots not exceeding 8 inches in diameter. Mr. C. Turner was adjudged first honours for strong plants bearing three or six blooms each, but of remarkable size and beauty. The Carnations were Edith (six flowers), Matador, Wm. Skirving, H. Medhurst, and Rob Roy. Picotees—Admiration, Brunnette, Rosy Queen, and Mrs. Payne. Mr. Douglas, who was second, had larger more bushy plants with eight to twelve blooms each, but smaller than the preceding. The Carnations were Rosy Morn, a seedling, Constance, Titania, Florence Nightingale, John Keet, and King of Yellows. Picotees—Her Majesty and Flavius.

Messrs. Veitch showed eight exceedingly handsome boxes of cut blooms of Carnations and Picotees. The flowers, which we understand had all been cut from plants grown in the open ground, were really admirable, and included many exceptionally good varieties. Messrs. Cross & Steer, Salisbury, exhibited two excellent stands of Carnations; and Mr. H. G. Smyth, horticultural sundriesman, Drury Lane, sent three boxes of Carnations. Mary Morris, this beautiful rose-coloured variety being most charming both in colour and form. Messrs. Paul & Son also sent an attractive group of Carnations in pots, the flowers being of good size and colour.



#### HARDY FRUIT GARDEN.

*Summer-pruning*.—Frequent and close attention to the work of spur formation and fruit-bud development is highly important. Shoot-nipping during the season of growth when well done contributes materially to both, but it is a positive source of mischief in the hands of careless or ignorant men. Guard well against crowding growth resultant from close nipping, and disbud Pears or Apples quite as freely as a Peach wherever the necessity for doing so becomes apparent. Without light and air fruit buds cannot be fully matured, and free admission should be given it among every part of a fruit tree. Well-ripened growth of moderate vigour usually betokens a fruitful tree. Mark now all barren trees with very vigorous growth. Do not shorten such growth now, but thin by cutting out enough of it to throw open the centre and outside of every spur. At the end of August cut each shoot 6 inches from its base, and bend the part above the fracture downwards in order to plump the basal buds without causing them to start into growth; then root-prune the tree early in September, and a good season's work will have been done towards converting worthless barren trees into profitable fruiting ones.

*Peaches and Nectarines*.—The hot dry weather caused the foliage of Peach and Nectarine trees to be more or less infested by red spider; dislodge this pest speedily by persistent syringing, or the weakened foliage will seriously affect the growth now and the fruit crop next season.

*Strawberries*.—If our directions have been followed about the preparation of young plants, the stock will now be ready for planting, and

not a day should be lost in doing this in view of obtaining a useful supply of early fruit next season. Let the rows be a foot apart and the plants a foot apart in the rows. After the fruit is gathered next season every alternate row will be destroyed, and part of the beds of strong-growing sorts will have the plants removed alternately from the other rows. Not all should be so thinned, however, for by retaining some to grow together thickly the fruit is so much shaded by the dense growth of foliage that its ripening is much retarded, and forms a nice succession to earlier fruit. As soon as fruit is finished from established beds clear weeds and litter from between the rows, apply a heavy dressing of manure, and dig it in so that the plants may have an ample store of nutriment to assist the development of strong crowns for another season. It is only upon soil of a very friable porous nature that top-dressing now without digging may be practised in safety. Soil of a close or heavy texture is apt to become trodden hard, and if not broken up now the plants suffer in a cold wet winter by an accumulation of water about the roots.

#### FRUIT-FORCING.

*FIGS.—Early Houses.—Red Spider*.—Although great perseverance in the application of water by means of the syringe will mostly be sufficient to keep red spider in check, yet when the trees have been several months in bearing it sometimes secures a hold, particularly where the roots have not been liberally supplied with stimulating food. When this is the case and succession houses are giving a supply of fruit, no time should be lost in applying an insecticide and throwing open the ventilators day and night, exposing the foliage to showers by the removal of the roof-lights.

*Succession Houses*.—The second crop in succession houses is now making good progress, and will need liberal thinning. The syringing must be attended to twice a day, and if red spider or scale appear apply an insecticide. The mulching must be constantly moist for the benefit of the surface roots, and maintain a brisk temperature from sun heat after closing until the fruit shows signs of ripening, when a drier atmosphere by night will improve the flavour; but no great reduction in the daytime will be needed, only air must be freely admitted. Give regular attention to stopping and tying, avoiding overcrowding the young growths and especially vigorous shoots, which will now require all the warmth and light that can be secured to them, allowing them to grow up towards the glass.

*Young Trees in Pots*.—Young plants which have been raised from cuttings or eyes must be potted without delay, so as to secure a good growth and allow of its becoming thoroughly ripened, nothing being gained by forcing a late growth which cannot be properly matured. Young trees in pots intended as an early batch for forcing the first time must be thoroughly ripened before they are taken into the open air for a season of rest, but under no circumstances should they be taken outdoors to ripen, as they will need to have the growths well matured, or they will give very unsatisfactory results. Therefore keep them under glass with a free circulation of air until the foliage gives indications of falling, when a short sojourn in a sunny position outdoors will insure a season of complete rest. Should the roots have passed into the mulching material they should be cut through by degrees, so as not to give a sudden check; and when the trees are taken outdoors they must have a warm dry position, the roots being protected by plunging in some dry or open material, as ashes, cocoa refuse, &c.

*PINES*.—Attend strictly to the ventilating and watering, especially those which are swelling off fruit. If the plants are grown in moderate-sized pots the state of the soil should be examined at least once a week, and others in lesser ones more frequently. Whenever water is needed give a plentiful supply with some stimulant intermixed, as that of guano, 1 lb. to 20 gallons of water. In watering pour it well up the plants so that the axils of the leaves on the stems may have the benefit of it as well as the roots, and see that the space above the soil in the pots is well filled. When the fruit is closely approaching maturity and begins to soften, keep it as free from condensed moisture as possible, which is especially needed during the early part of the day, as the sun when powerful is liable to scald tender-skinned kinds, as Queens and others of a similar nature. To prevent mischief from this source commence ventilating early in the day, and afford slight shade until the fruit is perfectly ripe.

In the ordinary practice there will be about this time a considerable amount of space available by means of a great proportion of the early-started plants being fruited, and the opportunity should be taken advantage of to thoroughly cleanse it in preparation for other plants, whether Pines or otherwise. From the fruited plants there will be a corresponding number of suckers available for starting. Select only the best of them, and start them at once, giving them a pit with a fermenting bed.

*MELONS*.—Houses in which the fruit is ripening will need gentle fire heat in dull cold weather, so that a little air can be admitted constantly, and the atmospheric moisture as well as that at the roots reduced. If the fruit give indications of cracking, cut the stems about three parts through below the fruits, and withhold water at the roots, but not to the extent of causing the foliage to flag. Plants setting their fruit should have a rather warm and well-ventilated atmosphere, impregnating the flowers daily, and stopping one or two joints beyond the fruits. When a sufficient number of fruits on a plant are set and swelling, remove all the flowers, and keep the laterals pinched and thinned as needed, so as to allow of the principal foliage having full exposure to light and air. Give a good soaking with tepid water when the fruits are swelling, and earth up the roots with rich compost. Place supports to the fruit in good time, and damp the house two or three times a day, closing early and syringing the plants at the same time. Admit air early; do not shade, or only when the sun is



powerful after a period of dull weather to prevent flagging. Keep the temperature through the day at 80° to 90°, and close before the temperature falls to 85°. If canker appear rub quicklime well into the affected parts, repeating as necessary. Syringing and an ammonia-charged atmosphere will keep red spider and thrips in check, and against aphides fumigate on two or three consecutive evenings, having the atmosphere cool and dry.

In order to obtain a late crop of Melons the plants should be placed out forthwith in a light, airy, well-heated structure, every encouragement being given to enable the plants to make a sturdy growth. Hardly any artificial heat will be necessary, as the plants will make rapid progress if due attention is paid to early closing, but a gentle bottom heat will enable the plants to become speedily established. Should dull weather prevail, gentle fire heat will of course be necessary.

#### PLANT HOUSES.

*Calanthes*.—The pseudo-bulbs of these beautiful plants if started as previously directed will now be growing vigorously. The small pots in which they were first placed are now well filled with roots, and the plants should without further delay be placed in the pots in which they are intended to flower. It is necessary that the plants are well rooted previous to shifting, at the same time the roots should not be allowed to become curled or crowded round the sides of the small pots before the operation is carried out. *Calanthes* do not need large pots; those 6 inches in diameter will be large enough for the largest pseudo-bulbs of *C. Veitchii*, while the *C. vestita* section can be grown to perfection in pots 1 inch less. The pots must be liberally drained and the plants potted in a mixture of fibry loam and peat equal parts, one-seventh of cow manure, a little broken charcoal, and a liberal dash of coarse sand. In potting, the soil should not be pressed too firmly, and must be worked carefully round the ball in which the roots are established. The pots should not be over-filled with soil, for abundance of water will be needed when they are growing vigorously. Water must be applied with great care until the roots are working freely in the new compost, for if rendered sour or saturated at first the roots seldom enter it freely afterwards, and the growth made is poor and puny instead of being vigorous.

Where the stock has to be increased and the two-year-old pseudo-bulbs were kept in consequence and placed in a box in heat to start, these will now be ready for potting. The majority of these old bulbs which often find their way, when potting these plants, to the rubbish heap, will, if potted in 3-inch pots and taken care of, make good growth, and another year good flowering plants; in fact many of them will flower late the first season. If room is limited, it is a good plan to place a number together in pans or baskets, and suspend them from the roof of any warm close house where they can be shaded from strong sun. At first they must be watered with great care and caution.

*Phajus grandifolius*.—These should be subject to much the same treatment as *Calanthes* from the time they commence growth to the time it is completed. If potted as directed and watered with the utmost care up to the present time they will now be growing vigorously with clean foliage. The cause of so many miserable specimens with injured foliage is over-watering and syringing in the early stages of development. If the pots in which they were placed is moderately well filled with roots and small in comparison to the size and strength of the plants, feeding with weak stimulants in the form of liquid manure every time water is needed may now be practised. Nothing is better for these plants than liquid made from cow manure and clear soot water, which should be given alternately in preference to mixing the two together. The effect of the latter is quickly discernible by the healthy dark hue of the foliage. These plants may be lightly syringed from the present time twice daily on fine days. The afternoon syringing should be done early and the house closed at the same time, for when growing vigorously they delight in heat and moisture. Air should be admitted daily to ensure a sturdy growth, which is the secret of fine stout large spikes of flowers.

*Cyclamens*.—Plants placed into 3 inch pots some time ago from seed sown in the autumn will now have filled them with roots, and be ready for others 2 or 3 inches larger. In potting the soil should be pressed more firmly into the pots than was necessary at the previous potting. The soil for these plants should consist of good fibry loam, one-seventh of cow manure and sand. The pots should be well drained, for abundance of water is needed when the plants are growing vigorously. Keep the frame in which they are growing close for ten days or a fortnight after potting, then admit air gradually until abundance can be given both day and night to keep the foliage dwarf and compact. Shade from strong sun, but allow every ray of light possible to reach the plants. Young stock in small pots should be potted as needed. Keep old plants liberally supplied with water until they show signs of growth, when they may be turned out, the old soil partially removed from their roots, and repotted in the same or a little larger pots, and then subject to the same treatment as the young stock.

#### THE FLOWER GARDEN AND PLEASURE GROUND.

*Flower Beds*.—Where the much-wanted rains have fallen no time should be lost in hoeing, levelling, and thoroughly breaking down the surface soil, as in but few cases no more waterings will be necessary. The more finely divided the surface soil, providing it does not quickly become "caked," the less rapid the evaporation of moisture, and, besides, this hoeing and levelling tends to check the growth of the weeds, encourages the growth of the plants, and gives the finishing stroke to the beds. Where possible either after rains or waterings mulch the surface of the beds and

borders with short grass, leaf soil, or old fine manure. Such moisture-loving plants as *Violas*, *Verbenas*, *Calceolarias*, *Begonias*, *Marguerites*, *Salvias*, *Dahlias*, *Stocks*, *Asters*, *Sweet Peas*, herbaceous plants generally, various annuals, and *Roses* in addition to mulching may well receive occasional supplies of liquid manure either during showery or dull weather. Any mulching, such as half-decayed farmyard manure, which may be given to *Roses*, climbers, or newly moved shrubs, which is at all unsightly, should be lightly surfaced with garden soil.

*Pegging Down Bedding Plants*.—In order to secure an even surface of colour it is advisable to peg down such plants as *Pelargoniums*, *Calceolarias*, *Verbenas*, *Iresines*, *Heliotropes*, *Marguerites*, *Cinerarias*, and *Lantanas*. Providing any of these that are naturally erect in habit have been planted in a sloping direction the operation may be easily and safely performed. Fairly strong pegs are required for the majority, and these may be cut from large shrubberies, from faggot wood, common bracken, or if the winter prunings of the Apple and Pear trees have been preserved, these if shortened and sharpened will serve to neatly fix down the shoots where required, as they bend readily, the two ends being thrust into the soil. Where the plants are pegged down the beds are more quickly and evenly filled, but the plan is not advisable in ribbon borders, or where the back rows are much the highest.

*Budding Roses*.—The long period of hot and dry weather has not been favourable to this work. Experienced budders are successful in nearly all weathers, but novices are advised to choose dull weather for the operation when possible. A short time after a heavy rain the buds "run" most freely, and the Briar shoots open easily, and when this is the case the buds, if not bruised when separated from the wood, will grow without fail. If there is but little sap in the Briars they should be heavily watered, and the budding delayed till they are found to open easily and have plenty of moisture to support them. The latter ought also to part freely from the wood, and should not get dry before being inserted in the stock. During very hot weather it is advisable to lightly shade the buds from bright sunshine, Rhubarb and other leaves being available for the purpose. It is a difficult matter to describe the process without illustration, and we will therefore merely state that the buds should be inserted as near the main stems of the Briars as possible, in order that the growths resulting may quickly become strongly attached to them. The farther they are from the stems the more liable are they to be blown out. Almost any kind of binding material will do, providing the bark of the stock is bound closely and neatly over the buds.

## THE BEE-KEEPER.

### SEASONABLE NOTES—SUPERING.

(Continued from page 60.)

ALTHOUGH it is impossible to lay down hard-and-fast rules for our guidance in the art of supering, yet there are certain maxims which we might draw up, and which, if attended to, would in ordinary cases bring success. But it is in the many unforeseen extraordinary cases that the exercise of the bee-keepers' judgment for the nonce must be promptly and judiciously put into execution. He must have a practical knowledge of—first, when to put supers on; next, how to get them occupied; and thirdly, how to keep the bees at work in them. Hives peopled with prime swarms are never so difficult to keep in supers as non-swarmed colonies; but in order to get very great results it is often the bee-master's aim to prevent swarming altogether, and it is in such cases that all provisions must be begun in good time, and the one end in view perseveringly worked up to. To have a hive in the manipulation of which the work of supering may be made easy is the first step to attend to, and the one important point is that it shall be such a hive that the space occupied by the bees can be readily expanded or contracted as the bee-master may desire. The Stewarton possesses this power in a remarkable degree, but there are two things in the Stewarton hive to which we object—first, the supers employed when filled are too large for ready sale; and secondly, the more important objection to our mind is the non-interchangeability (there's a word for you!) of the bars. The octagon shape may be considered to be the nearest approach to the spherical shape of the cluster, but we like to have every frame in our apiary able to take its place in any hive and in any part of a hive; and again, we hold that the best of all supers are sectional ones, each section weighing not more than 2 lbs. These are easily moved about, easily retailed, and of just the size to place whole on the breakfast table. Detach the bars with their comb from a Stewarton super, and at once they are easily crushed and soiled, of such various weights as to be difficult of retail, and some too large to put upon a honey-dish. We therefore prefer the oblong rectangular hive, made so large that expansion and contraction are easily obtainable, and upon which and in which sections may be fitted without loss of room, and of easy access to the bees.

With the bar-frame hive, such as has been illustrated and described in this Journal, the art of supering can be practised with pleasure



and success. We have dividers so constructed that by removing a wooden shutter access to front and rear of brood nest can be given to the bees through perforated zinc, oblong pattern. It is difficult to get the sections nicely or quickly finished off in rear and front of brood nest. The bees take to them very readily when they are exposed at the right time, but as we are generally called upon by the rapid increase in numbers to place sections over the frames before those below are finished, these latter are often left for a long time in this unfinished state, sometimes never nicely finished, but the honey either consumed or partly removed to the upper regions. We now have a frame of four sections exposed to view behind the glass walls of a powerful hive. They have been constantly glistening with honey, and then the quantity reduced again, while two boxes above containing some 56 lbs. of honey are nearly finished off. Knowing this, the obvious lesson learnt is to get the foundation drawn out below, and then to remove the sections with bees adhering to the boxes above. This we render easy by so placing the section rack over the ten centre frames that the available space below is easily get-at-able, and serves as a nursery for the sections, which soon are removed to the upper tiers, empty ones taking their place. It is very seldom, indeed, that the queen will pass into the upper racks. She passes from comb to comb, but does not like to go through any intervening passage, neither to go through small apertures. Perforated zinc is therefore more detrimental than useful over the top bars. The rack is so arranged that the bees have some three-sixteenths of an inch space between the entrances to the sections and the top of the hive bars. When the first rack of sections has been well started, if the bees still show want of room, another rack is placed over the first, having in it a few sections commenced below or in the first rank, and with the adherent bees.

Bee-keepers among our acquaintance have failed to keep bees in the sections when a sudden spell of colder weather has set in, through not having been careful to well wrap up the section racks. We are particularly anxious to see that our supers when properly arranged are well enveloped in flannel or other woollen coverings, and we use broad strips to tie up all tightly, so as to exclude the cold air and to prevent the escape of heat. We like to place flat bits of board over the top. Bees cannot secrete wax at a lower temperature than from 90° to 95°, and a much higher temperature is good to cause the quick drawing-out of foundation, therefore supers cannot be too carefully wrapped up; but the greater the heat the sooner will the scaling be soiled and turned yellow, therefore care must be taken to open up the racks at the proper time, so as to get the sections out as soon as possible after they have been sealed up. The middle ones will be ready first, and when they are taken the outer one should be brought to the middle, and new ones placed on the outsides.

Bees often swarm after the supers have been entered, leaving a lot of incomplete sections. This is generally the case where preparation for supering has not gradually and constantly been made from early spring. Now and then after the greatest care a sudden wave of heat, particularly heavy thundery weather, will cause supers to be deserted, but this is very seldom when all the preventive measures have been carried out which we have endeavoured to explain. Supers must in such a case be taken off, the brood combs examined, queen cells excised, honey extracted from the outer combs of the brood nest, and the queen caged for a day or two, supers replaced, and queen released when the bees seem to take to their work again. If pretty early in the season when this happens we should never hesitate to hive the swarm, give plenty of foundation, feed with syrup for a fortnight, having placed the swarm in the place of the old stock, and then super the new colony. Greater results will thus perhaps be obtained than if we fought the natural propensity, and the old stock will work up into a good colony by autumn with a young queen at its head.—P. H. P.

#### NOTES ON THE SEASON.

ALTHOUGH the weather during the latter part of May and beginning of June was dry with bright sunshine, the thermometer sank often at night during that time to 30° and 32°, consequently vegetation made little progress. Large tracts of Strawberries are almost totally destroyed through the drought and insects. Plums that promised a great crop have dropped; Apples and Pears are stunted; Gooseberries, where they were not overpruned, are a fair crop; but with the exception of the last-named and Currants, the fruit prospects are very poor.

I only removed the feeders from my hives on the 25th of June, as up till that time little or no honey was to be had. On the morning of the 26th it was doubtful whether I had acted wisely in removing the feeders, but a favourable change came, and on the 27th I put on supers, which were at once taken possession of by the bees, which wrought vigorously, especially in the afternoon, as it was too hot at midday. On Saturday the thermometer stood at 88° in the shade, but cooling down a little the next five

days, when it culminated in a severe thunderstorm and deluge of rain. During that one week the bees increased much in weight, the strong ones completing from 12 to 15 lbs. honeycomb in supers, besides storing much in the body of the hive.

Swarms or old stocks do not take to supers until young bees are hatching, unless these are in hives too small to be profitable. In such cases their whole ingatherings may be stored in a super, which I prefer to be stored in the body of a large hive, so that the bees will be kept in good heart, and then as they increase the supers will be filled far more rapidly, and more of them, than when bees are crowded into too small hives, which are often found at the end of the season with little stores and few bees for winter.

Early swarms, and stocks that swarmed early, are showing signs of swarming, which, if they do, means many stocks but little honey. There are different ways of managing July swarms as well as non-swarms. I very often keep the swarm off by placing it on the old stock's site; I then transfer about two-thirds of its combs to the new swarm, crushing all queen cells—not cutting, as that induces the bees to raise royal cells; the rest of the combs I leave to the old stock to raise a young queen to form a stock for next season. Another plan is, if there are any weak hives not likely to be profitable, if the combs are fresh and free from disease, join the swarm to it, placing a super at the same time. This is an excellent way of utilising weak hives or empty combs. My next plan is to double late swarms, as it is more profitable and agreeable to have a few good hives than many weak and worthless ones. In ten days of fine July weather two large swarms successfully joined will make great weight, while the combs of honey are of the purest. Then the old stocks are certain to have young queens, which enhances their value as stocks for next season.

Not only has it been in my own apiary that queens have been deposed in April and May, but from every quarter I am in correspondence with it has been the same, which has been a great drawback, many hives through this not yet being in a position to collect much honey. Bee-keepers will, however, learn from the lesson the importance of having young queens at the head of every stock, and to avoid all unnecessary feeding and meddling with hives after September, for rest assured that autumn feeding is one of the causes of queens being deposed in spring. In some of my hives I have bees that were bred last summer, so the bee-keeper should turn a deaf ear to those statements that it is absolutely necessary for the well-being of a hive to cause the bees to breed in autumn—valuable enough if hatched not later than September, but dangerous if later.—A LANARKSHIRE BEE KEEPER.

#### MOVING BEES.

WILL you kindly give me some advice in the pages of your Journal as to moving two hives of bees? I have two strong stocks of bees in bar-frame hives, and am unfortunately obliged to move them to another part of the garden, about 40 yards distant, where I have two swarms in skeps.

1, At what time of year do you advise me to move them?

2, Must I move them by degrees, a little every day, or can I pick up the hives in the winter and place them in their new quarters without injuring the bees?

3, Would it be better to keep them in the hives as they are, merely placing them beside the skeps, or should I drive the skep bees and unite them to the stocks?

4, If they are to be united would it be necessary to bring the hives gradually near the skeps before uniting?

If you will give me the benefit of your advice I shall be very much obliged.—ADELAIDE FEILBERG.

[Had you stated the position of all the hives it would have been easier to advise. Presumably they are facing the two straw hives; if not, turn them to face them, then separate the two frame hives (if nothing intervenes) say 5 or 6 yards laterally; then if the day is fine move them forward 5 or 6 yards daily towards the desired spot, but unless the day is fine do not attempt moving them.

1, Now is the proper time to move bees under the circumstances. Never move bees short distances unless in warm weather.

2, We have often moved hives 40 yards when no others were near. The bees in a few minutes on a fine day soon discover their hive, but if at all chilly all the flying bees would be lost. When bees have to be removed a short distance in cold weather move them several miles for three weeks or so, then take them back. If there had been one hive only might be removed the distance at once.

3 and 4, These questions are rather vague. If you wish to unite the bees of the straw hives do so, but if not let them remain as they are. This you must determine for yourself. When bees are driven they act not unlike a swarm settling in their new quarters, so that it is unnecessary at this season to have them near each other. Preserve the young queens if you double them.]





\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

**Mildew on Vines in a Greenhouse** (*F. J.*).—The appearance of this fungus is probably due to an excess of moisture in the atmosphere, too low a temperature, and insufficient ventilation, all of which are conducive to attacks of mildew. The plan of combating it now is to dust the leaves with flowers of sulphur, which should remain on them for a day or two, and then be syringed off. At the same time increase the ventilation and lessen the supply of moisture in the house, and if the weather should become cold and damp employ a little fire heat occasionally.

**Strawberries Failing** (*T. Smith*).—The fruit you sent was shaken to pulp. Some Strawberries are more liable to be attacked by mildew than others, and certain positions in gardens are also more favourable to the germination of the spores than others are. If we had one variety of Strawberry alone that became infested we should certainly destroy it, as there is no lack of varieties for producing a supply of first-class fruit.

**Mildew on Peas** (*J. H.*).—Your Peas are infested with mildew, which is difficult to destroy. We have checked it, however, by syringing them with a solution of salt and softsoap, half an ounce of the former and 2 ozs. of the latter dissolved in a gallon of water and applied at a temperature of 120°. Prevention is much better than cure, and this consists in having the ground trenched and enriched to a depth of 2 feet and supplying liquid manure occasionally in dry weather. In all probability liquid manure given in sufficient quantity to penetrate below the roots would benefit your Peas considerably.

**Scale on Acacias** (*A Lady*).—We know of no better remedy than the petroleum and softsoap mixture, prepared as recommended to an inquirer last week in our answers to correspondents, under the heading of "Pines and Vines," only in your case half the quantity of softsoap and half that of petroleum there given will probably suffice. If your plants are in pots they may be laid on their sides, turning the plants round and syringing them heavily. The mixture must be constantly and violently agitated during its application, and it should not be used in the morning, but after the sun has left the plants in the afternoon; if it shines on them while wet with this solution the foliage is liable to receive injury, but not otherwise.

**Maggots in Water-tub** (*Old Woman*).—These are the larvæ of an insect called *Cristalis tenax*, one of the drone flies, and which is in its mature condition harmless, and a haunter of garden flowers. This larva is also styled the rat-tailed maggot, from the peculiar telescopic apparatus by which it breathes. It is, in fact, a creature of high utility, one of Nature's scavengers, whose life-work it is to decompose offensive matters, and turn what might be otherwise poisonous into harmless gases. No injury could possibly be done by it to growing plants, since these are not its food, yet it might seem objectionable to use water containing the insect as an application to plants, and in that case either whatever has given the species a lodgment must be thrown away, or the creatures scooped out with a close hand net, which might probably be done. Nothing could be added of sufficient potency to kill them in the water without rendering it dangerous for garden uses.

**The Cabbage Palm** (*J. R.*).—The Palm which bears the above popular name is *Areca oleracea*. It is a native of the West Indies, a lofty tree 170 to 200 feet high, and 7 feet in circumference at the base; for 25 or 30 feet the bark is of an ash-grey colour, but from that to the top it is of a beautiful deep sea green. The leaves, when fully grown, are 20 feet long and are composed of a single row of leaflets, some of which are 3 feet long and 1½ inch wide, arranged on each side of the great midrib. When the herbaceous parts of these leaflets are removed, the inside exhibits numerous long fibrous filaments, which being spun are used for making cordage of all kinds, and fishing nets that are considered stronger than those made of any other material of a similar nature. The footstalk of the immense leaves have great broad bases, which quite envelope the trunk, and which being in the form of a hollow trough are used by the negroes as cradles for their children; on the inside of the very young footstalks are tender pellicles, which when dried are said to serve for writing paper, and the inside skin of the green leaves is said to supply the same material. The terminal bud called "the cabbage" lies among many thin, snow-white brittle flakes, and tastes like an Almond, but sweeter; this substance is boiled and eaten with meat in the West Indies in the same manner as Turnips and Cabbage, and it is considered not only a luxurious but an extravagant dish, seeing the removal of the terminal bud involves the destruction of the tree. The flower stalk, before the bursting of the spathe, is pickled while young and tender. The trunks serve as gutterings, the pith makes a sort of sago, and the nuts yield oil by decoction similar to that of Elæis. The woody portion of the trunk is very hard, but so thin that it is not adapted for timber purposes, the only use to which it is applied being for walking sticks and ramrods. After the trees are felled a sort of grubs are bred in the pith, which are eaten and esteemed a great delicacy in Martinique and St. Domingo; they are about 2 inches long, and the thickness of a finger; strung on wooden skewers and placed before the fire, as soon as heated they are strewn over with raspings of crust, pepper and nutmeg; this powder absorbs all the fat, which would otherwise escape, and when properly roasted they are served up with orange and citron sauce.

**Dr. Hogg Grape** (*M. C. T. B.*).—The following description is given in Mr. A. F. Barron's "Vines and Vine Culture":—"A round white Muscat Grape; midseason; first-class; one of the best-flavoured and best-constituted of the smaller Muscat Grapes; very deserving of cultivation. Growth free and vigorous, producing firm moderate-sized wood, which always ripens well; very fruitful. Leaves medium-sized. Bunches long, measuring from 12 inches to 18 inches, and tapering to rather a narrow point; shoulders long and rather loose, drooping, always well set. Berries medium-sized, round, on strong stalks. Skin membranous, very clear, almost transparent, and, when quite ripe, assuming an amber tint. Flesh firm, very sweet, and with a rich Muscat or Frontignan flavour. This is a seedling raised by the late Mr. Pearson of Chilwell about 1869 from Duchess of Buccleuch, and was exhibited before the Fruit Committee in 1871, when it was awarded a first-class certificate. It is now very general in cultivation, taking the place of Chasselas Musqué. Succeeds well in any ordinary vinery, but requires a little more heat than the Black Hamburgh to ripen it thoroughly. It is, however, one of the hardiest of its class." It is the finest of the white Frontignan Grapes, equalling Chasselas Musqué in flavour, but superior to it in size of bunch and berries, and the latter never crack their skin as that variety does.

**Potting Cyclamens** (*W. R. S.*).—The following extract from our "Greenhouse Manual" may be of service to you:—"The time of starting the established plants is in the end of July, the beginning of August, or later, for after the plants have flowered, or whether they flower or not, they are kept under glass until the middle of June, and then plunged in frames or out of doors. Drying-off the roots or corms impairs the vitality of the corm, and destroys the majority of the roots, which are as perennial as the corms. From the end of July they should be examined frequently to see when they begin to grow, and if the soil is dry at that time water is given. Withdraw the pots from the plunging material, take the plants to the potting bench, turn them out of the pots, remove as much of the old soil as will come away freely without injuring the roots, and repot in the same size of pot. After repotting place the plants in a cold frame, keep them close and moist for a few days, and then admit air freely. Take care not to overwater, and sprinkle overhead every afternoon on closing the frame. By the middle of September they will be growing freely; the pots will be full of roots, and the plants may be shifted into 6 or 9-inch pots, or be flowered in those in which they were first potted; in either case they may be removed to a house with a temperature of 55° at night, placing them near the glass, and admitting air freely. A stove, or any house where there is a temperature of 55° at night, is suitable. Here they may remain until they flower, when they should be removed to a house with a temperature of 45° to 50°. Two parts of light fibrous loam, one of sandy peat, one of leaf soil, and a sixth part of silver sand and small charcoal, forms a suitable compost." This manual would probably be of great use to you, and can be had from this office post free for 10d.

**Nectarine Leaves Skeletonised** (*B. L.*).—The injury to the foliage is neither caused by insects nor fungus, but is the result of defective root-action or a deficiency of food for maintaining the trees in a healthy state. Of this we have no doubt whatever, and if you lift the roots and place them in fresh loam with a mixture of calcareous matter, and at the same time accord the trees otherwise good management, they will produce very different foliage, stouter and greener, that will resist the effects of the sun. The transparent patches in the leaves show a deficiency of chlorophyll. There is, indeed, little or no substance there, and those weak parts shrivel and drop out. We have only once before seen a similar case, and the trees were completely restored by the means above indicated. If there is no fruit on the trees you may lift them at once, and keep the foliage fresh by syringing and shading until new roots form and take possession of the fresh soil; or the lifting may be done immediately the crop is gathered. If it must be postponed, the best thing you can do in the meantime is to apply liquid manure copiously to the roots, ventilate early in the morning, and in very hot weather shade the foliage slightly either by spreading netting on the glass or sprinkling it with limewash applied with a syringe. The trees have probably been overcropped. They are certainly in an enfeebled state, and urgently need renovation. An abundance of fresh roots working freely in good soil will have a magical effect, and if you can carry out our suggestions this summer you will probably have healthy trees next year.

Name of Plant (*Clifford*).—*Galega officinalis alba*.

#### COVENT GARDEN MARKET.—JULY 23RD.

HEAVY supplies of soft fruits to hand, meeting a depressed market. Prices again lower.

##### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. ..	½ sieve	1 6 to 5 0	Oranges .. ..	100	6 0 to 10 0
Cherries .. ..	½ sieve	7 0 12 0	Peaches .. ..	per doz.	4 0 12 0
Chestnuts .. ..	bushel	0 0 0 0	Pears, kitchen ..	dozen	0 0 0 0
Currants, Red ..	½ sieve	3 0 4 0	„ dessert .. ..	dozen	1 0 5 0
„ Black .. ..	½ sieve	3 0 3 3	Pine Apples English ..	lb.	2 0 3 6
Figs .. ..	dozen	2 0 0 0	Raspberries .. ..	per lb.	0 3 0 4
Grapes .. ..	lb.	2 0 5 0	Strawberries .. ..	lb.	0 2 0 9
Lemons .. ..	case	15 0 21 0	St. Michael Pines ..	each	2 0 6 0

##### VEGETABLES

	s. d.	s. d.		s. d.	s. d.
Artichokes .. ..	dozen	2 0 to 4 0	Mushrooms .. ..	punnet	0 0 to 1 6
Beans, Kidney ..	lb.	0 9 0 0	Mustard and Cress ..	punnet	0 2 0 0
Beet, Red .. ..	dozen	1 0 2 0	Onions .. ..	bushel	2 6 3 0
Broccoli .. ..	bundle	0 9 1 0	Parsley .. ..	dozen bunches	2 0 3 0
Brussels Sprouts ..	½ sieve	0 0 0 0	Parsnips .. ..	dozen	1 0 2 0
Cabbage .. ..	dozen	0 6 1 0	Potatoes .. ..	cwt.	4 0 5 0
Capsicums .. ..	100	1 6 2 0	„ Kidney .. ..	cwt.	4 0 5 0
Carrots .. ..	bunch	0 3 0 4	„ New .. ..	cwt.	5 0 9 0
Cauliflowers .. ..	dozen	2 0 3 0	Rhubarb .. ..	bundle	0 4 0 0
Celery .. ..	bundle	1 6 2 0	Salsafy .. ..	bundle	1 0 0 6
Coleworts .. ..	doz. bunches	2 0 4 0	Scorzonera .. ..	bundle	1 6 0 6
Cucumbers .. ..	each	0 3 0 6	Shallots .. ..	lb.	0 3 0 0
Endive .. ..	dozen	1 0 2 0	Spinach .. ..	bushel	1 0 2 0
Herbs .. ..	bunch	0 2 0 0	Tomatoes .. ..	lb.	0 6 0 0
Leeks .. ..	bunch	0 3 0 4	Turnips .. ..	bunch	0 3 0 0
Lettuce .. ..	dozen	1 0 1 6	„ New .. ..	bunch	0 6 0 0





## HAYMAKING.

## THE MANAGEMENT OF GRASS LAND FOR HAY.

(Continued from page 62)

WHEN the seven-acre field to which special reference was made last week was first taken in hand, we were walking over it and considering ways and means for its improvement, when our attention was arrested by the sight of an ant hill upon which the grass was long and of a dark green colour, in striking contrast to the brown, stunted, starved appearance of the other grass. Closer inspection of the ant hill showed that its extraordinary fertility was owing to the excrement of rabbits and to its drainage. Here was a hint from Nature which showed clearly how to bring the land from a state of semi-barrenness into one of high fertility. It said in language too plain to be mistaken, First drain the inert soil so that water may percolate freely though it and pass away, and the air enter it to impart warmth and some fertility; it will then be in condition for its true purpose of a food vehicle, and its pores may be charged with nutriment for the grass roots with an absolute certainty of benefit. Valuable as this knowledge is, some caution is requisite in its application. Poor land may doubtless be brought into a thoroughly fertile condition in a single season if necessary; but such a mode of procedure involves a heavy outlay for which an adequate return can hardly be expected at once, and it will generally answer better to follow the progressive method of improvement to which we have called attention, both because the home farmer can afford to wait, and he will then not bestow an undue proportion of the manure at his disposal upon one portion of the farm at the expense of the remainder. Rash measures are rarely satisfactory in the end, however praiseworthy and apparently justifiable that end may be.

When artificial manures are used largely it is important to know that nitrogen, phosphorus, and potash are our three indispensable elements for plant food, and that safe proportions to begin with are about a half part of the nitrogen to one part each of the phosphorus and potash. Probably the very best method of applying manure to grass would be a dressing of farmyard manure and wood ashes in October, followed by the mixture of nitrate of potash, nitrate of soda, superphosphate, and steamed bone flour about the middle of February. The autumn dressing is in course of preparation now, the dung being carted from the yards upon a bed of ashes of sufficient thickness to afford enough for mixing with and covering the mixen when it is turned, so as to arrest and absorb gases generated in the mixen by the heating which is inevitable in heaps of half-decayed manure. The beneficial effect of wood ashes is evident in the vigorous growth of Clover and Trefoil among the grass. We had a few cartloads of ashes alone spread upon a somewhat poor piece of grass last autumn and added no dung, but put dung upon the adjoining piece of grass by way of experiment. The contrast in the two pieces was remarkable and instructive. The ashes caused a strong dense growth of Clover and Trefoil, all the more striking from the fact of the somewhat feeble growth of grass among it, while the dung stimulated a much stronger growth of grass than of Clover. Our soil is naturally thin and poor, and while valuing highly such hints and formulæ as are offered for the general guidance of farmers, we strive never to forget that soil is a vehicle for food; that however we may store it with nutriment, that store is bound to be exhausted sooner or later, and therefore we must study its peculiar requirements, and learn by experiment and watchfulness how much, how often, and when manure may best be applied in order that the grass may derive full benefit from it.

Drainage is to be regarded as an indispensable preliminary step in the improvement of the soil: without it vain will be our efforts, and our application of manure will be decidedly wasteful. "On all wet soils," says Professor Sheldon, "no improvements can be made to pay until the primary one of drainage has been done; and drainage alone in many cases effects greater changes for good than any other single improvement that can be named." It is obvious, then, that an operation of such vital importance must be well done, and this can only be effected by having the trenches excavated, the pipes laid and tested with water before any of the soil is put back, and then the actual covering of the

pipes must be watched closely, and the first layer of soil be rammed carefully upon them before the work can be left entirely to the hands of an ordinary labourer. A pipe disarranged; an improper slope, will lead sooner or later to a stoppage, which, apart from the injury to the soil, is also an expensive affair when drains are made at the ordinary depth of 4 feet. We call special attention to this important matter perforce of dear-bought experience, and from knowing how frequently drainage is entrusted to incompetent men at per rod; the lines being marked, the pipes carted, and the remainder of the work left comparatively unwatched.

(To be continued.)

## WORK ON THE HOME FARM.

*Hand Labour.*—The finishing of the haymaking has set the men at liberty in good time for thinning and hoeing Turnips, Carrots, and Mangolds, all which, as well as the main crop of Potatoes, have derived much benefit from the rain which has frequently fallen since the hay was saved. The advantage of sowing Mangolds in April was never more apparent than now, the earliest sowings being a fine vigorous plant in striking contrast to the later sowings, which are not half the size of the earlier plants and have suffered much from flea in the hot dry weather. The only possible objection to early-sown Mangolds is the liability of an exceedingly small per-centage to bolt to seed. The same remarks are certainly applicable to Carrots this year, quite half the later sowings proving a failure, while nothing can be more satisfactory than the flourishing appearance of the early ones. Turnip fly has been troublesome, but the timely driving of the sheep over the young plants while wet with dew early in the morning has had the usual good effect of coating the plants with dust and knocking off the fly. The hayricks are in course of being thatched, and will be finished as soon as possible, as we have kept a portion of the crop of outlying pasture in reserve for filling our silo, and some men are required for filling it now. Spudding and pulling Thistles, hedge-clipping, turning mixens, tarring and painting outbuildings and fences, repairing stock yards and other enclosures, are all matters to be seen to between haying and harvest. Hop-washing has been done for the fourth time, and the foliage is now clean and healthy.

*Horse Labour.*—A green crop of Mustard upon clean land in course of preparation for Wheat has been ploughed in and more Mustard sown. The hot dry weather has so much helped the work of clearing a fallow foul with couch grass that we have been able to pronounce it clean, and apply a dressing of lime fresh from the kiln at the rate of 100 bushels per acre. Laid in small heaps upon the land the lime is soon slackened, and is then at once spread and ploughed in. The land cleared of winter Tares required for Turnips has had a dressing of dung for ploughing and sowing at once. The horse hoe is in almost daily use among the root crops and Hops. The value of work so done by a light strong tool is incalculable. Surface-stirring in hot dry weather serves both to destroy weeds and to check evaporation. It cannot be too often explained that the more the surface is stirred the better does the soil retain moisture.

*Live Stock.*—Ewe and teg sheep may now be dipped without fear of harm to wounds made at the shearing. Lambs should have been dipped when the ewes were shorn; if this was not done let them be dipped now to render them safe from the attacks of maggot fly during the busy time of harvest. We have invariably found Cooper's dipping powder excellent for this purpose, and also as a cure for scab, which we once had in an outlying flock. A watchful eye must be given to pastures now, and a change given to cattle before herbage is so closely eaten as to become scarce.

## METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.


Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain	
	Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
1884.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	1n.		
July.											
Sunday .....	13	29.916	72.5	67.0	E.	62.2	81.8	57.9	114.4	52.2	—
Monday .....	14	29.981	65.3	60.6	S.	62.9	74.3	54.2	121.4	49.1	0.026
Tuesday .....	15	29.957	62.6	61.6	S.W.	63.4	73.6	57.0	112.5	54.1	0.098
Wednesday ..	16	29.702	64.1	62.9	S.W.	63.3	71.0	61.6	107.8	56.4	—
Thursday ....	17	29.781	63.7	59.6	S.	62.5	73.7	53.4	122.1	48.4	0.070
Friday .....	18	30.58	63.7	58.0	S.W.	62.2	69.4	51.1	115.6	46.7	—
Saturday ....	19	30.133	57.3	53.7	N.E.	61.2	67.9	48.6	115.8	45.3	—
		29.933	64.2	60.5		62.5	73.1	54.8	115.7	50.3	0.194

## REMARKS.

13th.—Fine hot day; cool pleasant breeze in evening.  
 14th.—Slight shower early; fine day; shower in late evening; cloudy night.  
 15th.—Wet in early morning, and showery during day, but some sunshine.  
 16th.—Heavy rain early; dull day; fine pleasant evening.  
 17th.—Fair day, at times cloudy; very heavy shower about 4.15 P.M.  
 18th.—Fine, but not very bright.  
 19th.—Fine, but frequently cloudy; some hot sunshine in afternoon.  
 A rather unsettled week, without much clear bright sunshine, giving the impression of more rain than really fell. Temperature about 3° below that of receding week, but still above the average.—G. J. SYMONS.





## COMING EVENTS

31	TH	Liverpool and Southampton Shows (two days). 8TH SUNDAY AFTER TRINITY. BANK HOLIDAY.
1	F	
2	S	
3	SUN	
4	M	
5	TU	
6	W	

### POTATO LIFTING—"SEED" POTATOES.

**P**OTATO lifting will now be the order of the day. We have already lifted Ashleaf Kidney, Myatts', Snowflake, and Beauty of Hebron. Later sorts are still growing, and the late abundant rains may still help them to a heavier return. So far we have seen no signs of the dreaded disease, but after these thunderstorms it may soon make its appearance. I would advise all who have still early and second early sorts in the ground to examine them at once, and lift all that have the skin sufficiently "set" to bear handling. The season has been so dry that in some instances the tubers have ripened earlier than the tops would lead one to suppose, and no amount of rain will benefit them. On the contrary, it may spoil the crop, for the moisture now in our more than ordinary warm soil may induce the half-ripened tubers to start growth, and this, of course, does not improve the quality. As soon as the blight is discovered the tops should be pulled out, not cut off, and carried away at once, then lift the crop on the first fine day, allowing the tubers to dry for an hour or so in the sun, and store in dry sheds. Just a word of warning. Do not pull the tops out of gross-growing late sorts before they part from the tubers pretty freely, because if the stems are not pulled clean out the probability is that for a day or two the crop will be flooded with sap drawn up by their own roots, making it difficult to lift them clean and dry for some time. If there is danger of this it is far better to lift them at once, even if the skin does get ruffled a little. Better that than run the risk of losing half of them by disease.

Many may think that the question of "seed" Potatoes is not a seasonable subject for July, but I venture to say that the most of our great growers will agree with me in saying that it ought to be the first thing to be considered after the crop is in dry quarters. During showery weather each lot of tubers should be picked over, and the requisite quantity of seed of each selected, the very small sent to the pigs and the others put ready for use. I prefer medium-sized whole tubers for planting; they should be all as near of a size as possible, and of the most approved shape.

The best way to dispose of Potatoes intended for next year's planting is undoubtedly to set them on end close together in shallow boxes, in which they may remain till they are planted out in the spring. Since I have practised this plan I have had better success with Potatoes than I ever had before, which has led me to the conclusion that there is more in this little matter than many of us suppose.

In an ordinary way these tubers are laid upon shelves or in boxes, two or three deep. They are covered upon the approach of frost, and too often forgotten till they have white shoots pushing from every eye. These are, of course, no use. They have to be rubbed off for them to make a fresh start. Some even will place them in boxes and put them in a little heat to "get them away" again, and, without much thoughts of "hardening off," plant them

in cold soil in March; and if you venture to suggest a more humane practice they will probably say they are "only Potatoes."

We have a sort of shallow boxes; into these the "sets" are placed with their growing ends up as soon after they are lifted as possible. They are thus exposed to the full light, and become green at the tips. In the corners of each box is fixed upright pieces of wood about 5 inches long, so that the whole of the boxes can be placed on the top of each other. They thus occupy little room, while at the same time the tubers have light, and if protection from frost is necessary straw can be packed round them without danger of breaking the shoots which may be pushing, and which it is of the utmost importance should be retained, and kept from being blanched and drawn. As soon as the weather will permit, say the end of February, they are taken outdoors, and either some old lights placed over them or other means taken to throw the wet off them. A sprinkling of fine dry soil is placed over the tubers and well covered up at nights as long as there is any danger of frosts. By the time they are planted they are generally pushing a few roots; they are carefully lifted from the boxes on the squares and placed in the rows. This may seem much trouble to take with "only Potatoes," but really it is no more trouble—indeed, it is less in some respects—than the ordinary mode of dealing with them, and far more satisfactory in the end.—  
A WORKING GARDENER.

Of late years more attention has been paid than formerly to the satisfactory production of the most useful of all garden crops—the Potato. This is in part due to the encouragement that has been given by the offering of prizes for the best tubers, in part to the teachings of successful cultivators through the press, and in part by the introduction of new varieties. It is only according to the nature of things that the best attention should be given to that which costs the most. New varieties of Potatoes are necessarily costly, and when they have been obtained they have been cultivated with care. The result has been excellent crops of clean tubers. The same care in selecting and preserving the seed, also improved culture, as applied to the good old sorts have had similarly good results; hence Potato culture now is better conducted than it was a dozen years ago, and a greater weight of better produce is raised in the majority of gardens.

At present Potatoes, both in fields and gardens, are looking remarkably well, and there is a hopeful prospect of an abundant yield. The recent heavy rains have been of great benefit to the late crops, which are now in the full vigour of growth; but some of the early crops are in danger, as if very much more rain should fall either the disease may be incited or supertuberation produced. A few years ago, when heavy and continuous rains followed a term of hot dry weather, great loss followed in many districts by the partially ripened tubers growing again and producing clusters of small and almost useless Potatoes, the parent tubers which ought to have formed the principal crop being quite spoiled. Where the second growth did not occur disease set in, but the greatest loss was caused by supertuberation.

It is surely wise to bear in mind the lessons of the past, and to take such steps as may be practicable to avert such occurrences, which in many cases were disasters, as those alluded to. Many plots of Potatoes now need examination. The tubers are ripe or nearly so, and will certainly be safer out of the ground than in it. It is not of consequence that the foliage has not quite decayed. To wait for its total withering may be simply to wait for the ruin of the crop. Much work presses in gardens no doubt, and something must be reluctantly left undone, but whatever is deferred an effort should be made to secure the crops of early Potatoes while the tubers are still in sound and good condition.

It only needs to be said, as a reminder to those to whom



the hint may be useful, that tubers for culinary purposes must be stowed in total darkness; those for seed may have light, but it is very questionable if browning them in the sun is of any benefit whatever, while in the case of tubers not quite ripe it may be injurious.—EXPERIENTIA DOCET.

### DELPHINIUMS.

PLANTS with bright blue flowers are not common, and are usually of dwarf growth; but in Delphiniums we have plants of stately habit attaining to a height of over 6 feet, being fine for back rows in borders. Their flowers are borne in long spikes, some very close and without much branching, whilst others branch considerably, and the branched parts of the spike are extremely useful for cutting and mixing with other flowers. The full spike is most effective in large vases, imparting a stateliness that is never obtained by the employment of a number of sprays of flowers varying little in height. The peculiar form of the flowers gives a fitness for association with other plants which is strikingly effective and pleasing. One of their great merits is their hardiness and ease of culture. They will grow almost anywhere in an open situation, but they are not seen at their best in shrubby borders, as the soil is too poor or shaded to allow of their standing forth in their full proportions. A rich soil, deep, well drained, and light rather than wet and heavy, is the most suitable; and the situation should be open, although a position sheltered from high winds is desirable. The soil where Delphiniums are to be grown should be well and deeply stirred, working in plenty of manure, leaf soil, or the refuse of the rubbish heap, whilst the refuse from the potting bench—corks and all—are good for mixing with and improving soils that are heavy, as also is sand, ashes, and charred refuse.

The best time to plant is in early spring just when they are pushing the stems from the crowns; and this, too, is the best time for propagation, as the rooting is accelerated by fresh growth, and the divisions soon become established. I have divided the plants many times in spring, and find they do much better than from divisions made in autumn. When divided at the latter time the chances are that wet will act very disastrously on the cut part of the division, often causing decay; and slugs, which are very fond of Delphiniums, do much injury. Every bud that can be detached with a portion of the root-stem or crown will grow, but too much division weakens the plants, and the divisions are not likely to flower well the first season, the soil firmed moderately about them, and if dry watered. They should be planted with the crown about 2 inches beneath the surface.

The divisions made in spring will flower a little later than plants that are not disturbed, the usual time of Delphiniums being in early June onwards; and they not only continue some time in flower, but when the first flower stems are beginning to wane fresh ones issue from the base and form another display of bloom, which, if not equal to the first, is very serviceable for cutting and effective as well. The only thing to guard against is not to be in too great a hurry in cutting away the first flower stems and to keep the first from seeding, or the second growths will be poor; hence when the first flowering stems have bloomed to the points they may be removed, and the young ones from the base will by that time be considerably advanced. During May and onwards liberal supplies of water or liquid manure in dry weather will help the plants, and a mulch about the plants will cause them to flower finer and longer whilst encouraging a second growth. Some enriching material placed over and around the crowns, pointing it in lightly in spring, is all the care established plants need; and about every third year they should be lifted and divided, planting the same day or so soon as possible. Stakes should be put to the plants in good time, securing the stems to them with soft tarred twine, and where the growths are too numerous they must be reduced, reserving the strongest and most promising.

The varieties are abundant, and where a number are grown it is remarkable how many fine forms can be raised by a careful selection of seed. Very good varieties can be raised from a packet of seed, which may be sown in March, forwarded in a hotbed, pricked off, grown on, and hardened for final planting out in May. Most will flower the first year, but better the following season. The seed may also be sown as soon as ripe in light soil in the open border, and duly watered they will come up quickly, and the following spring they may be planted out where intended to bloom.

Some of the best single varieties are Belladonna, sky blue; Brilliant, deep blue; Bicolor Grandiflorum, large; Magnificum, fine; Madame Rougier, fine spike; Azureum, light blue; Madame Stenger, light blue; Leonie Barbe, light blue; Pulchrum, light blue; Hendersoni, dark blue; Madame Lelandais, sky blue; Conspicuum, dark blue; and Lifeguardsman. In doubles, which are more durable and very suitable for cutting, very fine are Madame Richalet, blue, fine; Pompon Brilliant, violet blue; Keteleeri, sky blue; Amadé Hans, bright blue;

Alopecurioides, dark blue, fine; Beatsoni, deep blue; William Pfitzer, sky blue; Madame H. Jacotot, sky blue; Protée, violet blue; Hyacinthiflorum, blue; Obelisque, sky blue; Magnetisme, blue; and Donateur, dark blue. Some have white centres, and others are very beautiful from the lustre that pervades the flowers, and is beyond description.—G. ABBEY.

### POTTING STRAWBERRY PLANTS.

As now is the time to pot all Strawberry plants for fruiting next spring the operation will be general, and a few words on the matter will no doubt be acceptable to many. I have fruited Strawberry plants in 4, 5, 6, 7, and 8-inch pots. The first size is too small, excepting for very early-forcing-plants. The 8-inch pots are too large for any advantage to be gained from them. They occupy far too much space for one thing, and the plants do no better than those in 6-inch pots. Indeed, all things considered, 6-inch pots are by far the most suitable in which to grow Strawberry plants for forcing. Our crops from these have been finer than we could ever obtain from any other size; we use no other now, and we would advise all to adhere to them as much as possible. We have tried two plants in one pot, but no good came of this. One thoroughly good fully developed plant is the best, and there is then no danger of failure.

I do not like new pots for Strawberries. The soil always dries away from the edge of them and leaves a vacancy all round, which is not beneficial, but I am very much in favour of clean pots for the plants, and would never use dirty ones. They should also be dry and sufficiently drained. It is not a quantity of drainage that is needed but a little well arranged. Half a dozen pieces of broken pots properly placed in the bottom will make as efficient drainage as half a hundred thrown in roughly. Over the drainage of each it is well to place some of the roughest parts of the loam, and then potting must be done with the proper mixture. Excessively rich mixtures I do not value. They undoubtedly force the plants to make large leaves and altogether showy exteriors in the autumn, but those soft-grown plants do not come out well in spring. They do not force freely or fruit heavily; they assume a rusty appearance in the foliage at that season, produce plenty of bloom, but the majority are "blind" and never form choice fruit.

A compost of a very satisfactory character consists of a fourth decayed fibrous loam, adding an 8-inch poful of ground bone manure to every wheelbarrow-load of the soil, and if any other manure is added I would only use a small quantity of horse droppings, but the loam and bones are capable of producing splendid fruitful Strawberry plants. Sand should never be used in potting Strawberries, and the roots should never be disturbed any more than is necessary. The soil must be pressed firmly around the sides and finished off neatly about an inch below the rim of the pot. Pressing with the fingers and thumbs is generally not sufficient, a small blunt-pointed piece of wood should be used. After potting the plants must always be placed on boards or a thick layer of coal ashes to prevent worms entering the pots.—A KITCHEN GARDENER.

### TREES AND SHRUBS FOR THE SEASIDE.

HAVING noticed in the *Journal of Horticulture* at different times queries from correspondents as to the best shrubs for planting at the seaside, it occurred to me that the following observations would be acceptable. Many shrubs which will thrive in one locality would be killed in another, and it depends on what kind of shelter the different shrubs or trees have when planted. It is very wrong to plant in positions exposed to the direct sea breezes those shrubs that are thriving in a sheltered position, although they may be not 100 yards away. Many gentlemen have made great mistakes in this by having noticed a few shrubs thriving in a sheltered place and thinking the same will do in a more exposed place. I know places within a mile from the garden under my charge where the Arbutus, Laurustinus, Portugal Laurels, Veronicas, &c., are doing fairly well, whilst they have been killed to the ground here, and in a winter like the past. To enjoy a garden on exposed coasts shelter must be provided, and experience will soon show where the shelter is required. It may be that at the exact place where the shelter is required it may obstruct some view. In this case low-growing plants like the Willows or Tamarisk may be employed; belts of these break the force of the wind very much.

The following trees form a very good belt for protecting the smaller shrubs—Pinus austriaca, P. Pinaster, P. insignis, with a few Sycamore and Wych Elm intermixed. They will have to be planted rather closely, so as to shelter one another, and the belt should consist of from four to six rows. It must be borne in mind that if planted



thinly (as they would be inland) the violent gales would soon uproot them. If the seaward side is wanted to be kept bright the following may be planted in the outside row—The Golden Alder, Laburnum, Sea Buckthorn (*Hippophae rhamnoides*), and Mountain Ash (*Pyrus Aucuparia*). These do fairly well exposed to the rough gales, and they should also be planted in the inside row with a few white and scarlet-flowering Thorns, as a bright background to the low-growing shrubs. *Cupressus macrocarpa* is the best Conifer for planting as single specimens inside the shelter.

The following shrubs I have noticed doing very well when sheltered:—*Arbutus*, white and yellow Broom, *Buddleia globosa*, *Cotoneaster*, *Veronicas*, *Laurustinus*, Portugal Laurel, Lilacs, *Escallonia macrantha*, Holly (*Ilex Hodginsii*), *Euonymus*, *Hydrangea japonica*, *H. paniculata grandiflora*, Sweet Briar, *Deutzia scabra*, *Ulex europæa flore-pleno* (double-flowering Furze), *Pernettya*, *Aucuba japonica*, and *Osmanthus ilicifolius*.

I may mention that the trees and shrubs should be well staked, and if the position is very exposed a thick band of the different varieties of Alder may be planted in the outside rows.—A SEACOAST GARDENER.

### CHOICE ALPINE PLANTS.

**RAMONDIA PYRENAICA.**—What a charming and highly interesting alpine is this! Easily grown in almost any situation or soil, and always pleasing and attractive, it is doubly so when during the summer months it is producing in profusion for some weeks (provided the plants are large) its pretty violet-purple flowers, with a conspicuous orange eye, which are borne on short stems rarely more than 6 inches in height. It is a very distinct alpine, which even those who know little of hardy plants cannot fail to recognise after having once made its acquaintance. It inhabits a somewhat varied though by no means extensive area among the Pyrenean and Piedmontese Alps, oft-times on the steep and almost perpendicular faces of the rocks. When so situated, however, it is generally where moisture is in abundance, as it is impatient of drought, preferring protection from hot sun. This, however, is of not so great moment as a plentiful supply of moisture in a well-drained position. Plant it in equal parts of peat and loam, together with a liberal addition of silver sand or grit—it delights to send its tiny fibres into moist sand—and success will invariably attend the operation. From its extremely prostrate habit of growth it is not to be recommended as a border plant, since heavy rains keep the plant almost wholly covered with earth, but on a mound above the ordinary level it may be made as equally at home as in its native habitat. It is chiefly increased from seed, though now and then some few plants throw out offsets; but to detach these with roots is a very dangerous operation, and should always be avoided. Sow the seed as soon as ripe. This will be about the middle of August, and the seedlings will appear the following spring. Do not be discouraged by the slow growth of seedlings, which is remarkable; not more so, however, than that of older and established plants, since the largest rosettes I have ever seen did not exceed 9 inches in diameter, and these were very old and very fine examples. When the seedlings are of sufficient size they may either be potted or pricked out in small colonies on the rockery. By so doing a goodly patch will soon be made. This method of grouping the smaller alpine is to be strongly recommended, especially in the case of such plants which are easily reproduced from seed.

**CAMPANULA PULLA.**—No new arrival this, no novelty; but in how few gardens do we find it! Among the many members of its genus it holds a prominent position, and I venture to remark it will be many years before it becomes common in our gardens. It is rarely seen in large quantities, and rarer still in large spreading masses, which years alone will form; but it is when seen in this form, covered with hundreds of its lovely blossoms, that those who behold them never forget them, and I well remember a lovely patch similar to that just described which I saw at Kew two or three years since. It was a glorious specimen, fully a yard square, covered with lovely rich violet-purple blossoms—a sight sufficient to repay a long journey.

This *Campanula* has been considered by many growers of alpine to be somewhat fastidious as to soil and situation. With regard to the former I cannot say that that is my experience. Peat is the generally prescribed soil for it, and indeed in such was the remarkable example at Kew to which I have referred. I have grown it well, however, in sandy loam, and know a variety of cases where it is growing and doing well in loamy soils. Of this much I am convinced, that it will wear itself away far more readily in pure peat soil than in either a mixture of peat and loam or sandy loam. I prefer about equal parts of each. As regards situation, I will

cite two instances before giving my own experience, and which will show plainly the wide difference between the ideas of planters. For the Kew specimen a position at the foot of a tall Cypress, which kept the soil comparatively dry beneath it at all seasons, had been selected. On the other hand, Mr. Ware used to grow it in a bed of peat considerably below the ordinary level, which received the rainfall from a roadway near; consequently the bed was continually moist and very often wet, together with the shade of a high hedge at the back, and encircled by short hedges on all sides. There they grew well and flowered freely, but were not permanent, as was the case with the Kew plant. Here, then, we have the two extremes of comparatively dry and moist situations, in both cases the plants doing well. This, then, should encourage all who grow hardy plants; indeed no collection is complete without it. For my own part I always select a shady moist situation, with a good depth of soil and free drainage. Give it abundance of room superficially, and encourage it to spread over its allotted space by every possible means, for it well repays attention. It was originally introduced from Austria about the year 1779, but has since been found among the mountains of central and southern Europe, generally speaking on sunny slopes. It is easily and readily distinguished from all other Harebells by its large richly coloured drooping bells, which are borne singly on stems from 2 to 6 inches high. Nothing is more charming than its lovely flowers. It is readily increased by division, and also by seeds. The latter will require careful watching, as the seeds are particularly minute.

**OURISIA COCCINEA.**—A most beautiful, distinct, and rare alpine plant, rather uncertain, perhaps, in some soils and under some conditions, but trivial hindrances such as these must be overcome; indeed the enjoyment of success is thus greatly intensified. Avoid in the first place any approach to a stiff or retentive soil. In such it will linger and die, nor will the slugs leave it while a green leaf remains; nay, more, I have even seen them hard at work devouring the rhizomes of this plant. And in the second place do not select a spot where the sun will have full play upon it. Such soils as sandy loam, or loam and peat mixed, suit it well, to which may be added well-decomposed manure to about one-fourth that of soil. It requires abundance of moisture at all times; and whether cultivated in pots in frames, on the rockery, or in the front row of the border, a somewhat shady position must be secured it; indeed I consider damp and shade both essential to its well-being. In planting it on the rock choose a position where it can ramble over some cool projecting and shady ledge of rock. Here, as is the case with pot plants, these overhanging shoots always flower freest. The plant is of recent introduction, and is at present little known and understood. It belongs to the Scrophulariaceae order, is of good habit, producing panicle clusters of crimson-scarlet flowers, somewhat resembling a *Pentstemon*, on stems from 6 to 9 inches high. It is a native of Chili, and should find a place in all collections of choice plants.—J. H. E.

### LARGEST MONTHLY RAINFALL.

As I cannot perceive that anyone has answered your Pershore correspondent's question in your Journal of the 10th inst. as to whether the largest quantity of rain falls in the month of July, and on the greatest number of days in June, I venture to give you my experience during the fifteen years that I have kept a rain-gauge in the annexed table. From it, it appears, that the popular notion that the greatest quantity of rain falls in July is not strictly correct, for only in two months of July in the fifteen years was that the case, but a larger quantity than the average does fall in July. As to the greatest number of days on which rain falls, that is so uncertain that no opinion can be formed, except that it is not in the month of June.

Year.	Month during which the greatest Amount of Rain fell.	Month during which Rain fell on the greatest number of days.	Year.	Month during which the greatest Amount of Rain fell.	Month during which Rain fell on the greatest number of days.
1869	September	November	1877	July	December
1870	December	October	1878	August	August
1871	September	October	1879	August	July
1872	June	January	1880	December	December
1873	March	August	1881	August	August
1874	August	October	1882	December	July
1875	July	January	1883	October	July
1876	September	September			

Average per month in fifteen years, 2.69 inches; average for the month of July in fifteen years, 3.36.—H. NEUMANN.

**ROOT-BOUND CHRYSANTHEMUMS AND ITS PREVENTION.**—I am much obliged for the kindly references to me, when discussing this sub-



ject, by your correspondents "Thinker," Mr. Waring, and Mr. Pithers, Co. Meath. All seem generally to agree with my recommendations that for general purposes and private conservatory decoration March is time enough to strike the cuttings. I am afraid Mr. Waring will not get the majority of Chrysanthemum growers to agree with him (page 68), where he says, "Rooted suckers certainly make the finest plants." Perhaps some of your readers who grow for show purposes would give us their experience—the point is of importance. "Will Mr. Murphy give me the names of the varieties that flowered as described page 25?" This would be an intrusion not to be permitted on your space. Mr. Cannell has 800 varieties, and as I am always trying different varieties each year, I have grown a large number of them, and only failed partially with one—the large Anemone reflexed, such as Fleur de Marie, old Gluck, St. Margaret, &c. All the free-flowering kinds, the Japanese, and early varieties submit to this treatment.—W. J. MURPHY, *Colonel*.

#### ROSE A. K. WILLIAMS.

A PRESS of more important matters made me pass by the reply by Mr. W. J. Murphy as to this Rose. In the matter of Alfred K. Williams being an empress he is perfectly welcome to his opinion, and if I am in a "miserable minority," this, too, no doubt I shall take cheerfully. The character and constitution of Alfred K. Williams Rose is, however, quite another matter. In reply to my opinion, based on the practical experience of others as well as myself, he writes—"I have looked hastily through your report of the National Rose Society, held since I wrote, and find it conspicuous in every winning stand, and some of the exhibitors, I believe, from the locality of your correspondent. No further proof is necessary." This is a somewhat *ex cathedra* style of settling an argument. Doubtless all the great growers, even if this Rose proved as weakly with them, would have large stocks of this glorious variety, and therefore be able to exhibit some blooms, perhaps even a profusion, but this would not make my assertion incorrect. Neither does the fact that with Mr. W. J. Murphy, "and those who grow it around him, no other Rose comes near it," make my assertion incorrect. What I wrote about the Rose was my actual experience and that of others in this neighbourhood. Mr. W. J. Murphy jumps to the conclusion that it was prominent in the stands of National Rose Exhibition—some of the exhibitors from my locality; well, that does not make my assertion incorrect. I have cut several lovely blooms of it myself, but that is no proof that I did not during the last very mild winter lose somehow several plants of it, and three of my neighbours were in a like plight. Unfortunately I could not be present at the National at Salisbury, but several of my neighbouring friends showed there, and that most successfully, but I doubt much if any one would have been able to stage a triplet of this Rose. Hence I take it that with us we still consider a further proof of the robust constitution of this glorious Rose is necessary.

If, however, we want the proof of the robustness of the Rose, I need no further proof of the correctness of my assertion than is contained in your issue of last week in the few lines from "One Who Knows." This writer speaks of its "baffling the skill of all the great rosarians." What will Mr. Murphy say to this? But "One Who Knows" has done good service by explaining that the difficulty (weakness of constitution, or whatever it may be) exists only after the transplanting, as, for instance, when ordered from the nurseryman. Certainly it is after this move that the great mortality takes place; but I had two old plants not many feet apart that had survived this period, and made good wood and gave good blooms last year, yet one of these died last winter, and the other appeared dead this spring. However, I left it in, and was rewarded by a strong shoot coming up from below the surface. A third plant has been decidedly delicate. Personally I desire to thank "One Who Knows" for the hint how to meet the difficulty.

During the many years that I have written in your pages—and I now flatter myself that I am among your very oldest contributors, having written my first note to you about thirty years ago—I have kept one thing continually before me, whether writing on Roses or other matters, always to give my own experience, not hearsay of others, but my own practical experience, and to back it up with the experience of others, verified by actual seeing. That it does not agree with the experience of Mr. W. J. Murphy no one regrets more than myself in this particular. That it agrees with the experience of "all the great rosarians" would appear to be the opinion of "One Who Knows." Perhaps you will once again "good naturedly extend so much of your space to" your old correspondent "Y. B. A. Z." I am only in my humble way a searcher after truth.—Y. B. A. Z.

I MUST thank "One Who Knows" for his letter respecting A. K. Williams. The failure of this beautiful Rose under transplanting is quite my experience, and its success under the replanting with dormant buds is happily mine as well. In the autumn of 1882 I removed seven plants budded on dwarf standards, and in 1883 they made beautiful growth. Owing to their exposed position in my garden I removed them to a more sheltered place, and as cut-backs this year they have been a miserable failure. Out of four bought plants of the same Rose only two are existing, and these are as good as dead. I hope and believe that "One Who Knows" has solved a most difficult problem.—H. B. B.

GREENLAND VEGETABLES.—In Greenland attempts have been made to raise some of the common plants of European gardens. At the Danish station of Godthaab (latitude 64°), close to the open sea, Turnips, Radishes,

Lettuces, and Parsley are almost the only plants that can be cultivated with any success. The Turnip, indeed, requires a favourable summer to produce anything like tolerable specimens. The Cabbages are scarcely worthy of the name; but at two inland stations up the fjord, about thirty miles north of Godthaab, the climate is strikingly different. Here, Dr. Rink informs us, Turnips always come to perfection; Carrots prosper well, and attain a fair size; and Cabbages, though unable to develop thick stalks, yet produce tolerably large leaves, which the provident Danes stow away for winter use. Attempts have been made to cultivate Potatoes, but the tubers never attain a size larger than marbles, and are only grown and eaten as curiosities. Under the most favourable circumstances Green Peas only produce shells, in which the peas are barely recognisable. This is within the Arctic Circle, or at least on its immediate borders. In South Greenland—the site of the old Norsemen's settlements—horticulture is practised under more favourable circumstances. At some of the posts, in about the same latitude as Christiania, good Carrots have been produced, and in a forcing frame Strawberries have grown well and yielded fruit for several years, but they afterwards died, owing probably to the severity of the climate. At Julianshaab Turnips often attain a weight of more than half a pound, and are fit for table in the middle of July. Radishes are fit to be eaten in the middle of June. Rhubarb grows pretty vigorously, and can be raised from seeds. Green Cabbage attains a good size, but never the normal taste and pungency of the vegetable. At Jakobshavn, in 69° 13', our good friend Dr. Pfaff used to raise a few Radishes, and the locality being sheltered, the tiny patch of earth on the rocks, which in that remote place passed for a garden, produced "crops" almost as luxuriant as Godthaab in the south.—(From Cassell's "The Countries of the World.")

#### STRAWBERRIES.

THE notes published last week were interesting and seasonable. In my opinion now is the best of all times to discuss the merits of Strawberries. In late autumn or early spring when many might be thinking of renewing or extending their plantations of them, extensive growers may have the motive or inclination to give advice, but with the recollection of the recent grand crops still fresh in the memory, many facts might be profitably noted now which would not be thought of a month hence.

Our best early Strawberry, and the best I know, is Black Prince. This season we gathered the first fruits of it on the 1st of June, and in five weeks afterwards we had still many fruits ripe on the same plants. Many have an impression that the fruits of this choice variety are small, but many of our fruits are as large as a Green Gage Plum, and none of them is smaller than a Damson. It is a capital variety to bear; others may be thin or bare, but Black Prince never fails to produce a paying crop. The fruits are wonderfully firm, some of them being almost black in their fully ripe richness, and they are all of a beautiful colour for preserving. All who taste it in good condition like it exceedingly too for dessert. It has many good points, more than any other variety in cultivation. For forcing very early it is unique.

Keen's Seedling is another favourite Strawberry of mine. It, too, assumes a rich colour, and when fully ripe in dry weather the flavour is good and pleasing in the extreme. It is a soft, mellow fruit, and more suitable for sending to the house as gathered than packing off to a long distance. It is most prolific, and stands very high in the class of first favourite Strawberries. The Vicomtesse Hericart de Thury I do not like. It fruits freely, but many of the fruits remain too small. They have a peculiar red colour which is not pleasing. There is nothing soft and mellow about the fruits when fully ripe. It will never be grown extensively here, I would not be sorry if I had none of it. President, to my mind, is the finest of all the main crop big-fruited Strawberries. It is nearer perfection in all points than any other of the kind which I can name. British Queen I have none of, and I have no desire to possess it, as it is far too uncertain; good in flavour it most undoubtedly is, but when properly grown many others are but little inferior to it.—J. MUIR.

#### WATERING PLANTS.

THIS is a subject which has been treated of frequently in the Journal, but not too often if the importance of the operation is taken into consideration. Good potting is essential to success, but carelessness in the application of water will quickly nullify the benefits of perfect potting. Too much and too little are the extremes to guard against. Supposing anyone to be growing four dozen plants; all may be watered rightly until growth is satisfactory, then there comes a day when one of them is so dry that the pot in which it is growing sounds like an empty one if struck with the knuckles. This plant is permanently injured, the young roots which were forming fast to support the plant are dead, and although the man in charge may determine that nothing of the kind shall happen again to that particular plant, his good resolution is too late. Once dry is once too much. By-and-by another plant in the same batch may be subjected to the same ordeal, and so it goes on until nearly the whole of the plants are thrown into an unflourishing condition. There is no excuse for anyone who has the plants in charge, and can examine them twice daily. Staking and tying, and everything else connected with growing plants, are all of minor importance to watering. There is another side to the question which is equally important. Besides the possibility of giving too little there is also the chance of giving too much. Of the two evils it is difficult to say which is the greatest. Both are decidedly bad, and those who go to the one extreme generally practise the other; indeed a man who lets some of his plants become too dry generally makes up his mind, when reprimanded for



it, to avoid the same thing again, and for a time he waters most assiduously—too much so in many cases, as giving large quantities of water when none is required, simply to make sure of the plant not becoming too dry, is a most improper way of watering. There is a happy medium, easily found and followed, of keeping plants in a growing state without going to extremes, and we would advise all men who have plants to water to adhere to it. Surface dribblings have often been decried, and must be so now and always. Sham watering of every description are delusions of the worst form, which will soon become apparent. Watering pots full of soil before they contain many roots is a common practice, and a decidedly bad one, as it is at that time that the soil is most liable to become sour, and if it gets into this state before the roots have taken possession they cannot be expected to do much good in it afterwards. When plants have abundance of roots, and the pots, beds, and borders are well filled with them, it is more difficult to do harm with the watering pot than when few roots are there; but printed rules cannot be taken as invariable guides, but much can be accomplished by what one of your esteemed correspondents would call "thinking."—A. K. G.

### LINUMS.

ALTHOUGH, perhaps, the greater number of the Flax family in cultivation at the present time are annuals and comparatively useless as garden plants, the few perennials left are of considerable importance in assisting us to make our flower beds and mixed borders both interesting and attractive for a large portion of the year.

In enumerating the best species we may commence with the dwarf *Linum campanulatum*, which has pretty shining yellow flowers. Some of the varieties of *L. perenne* are very beautiful, the intensity of the darker shades of blue being hardly approached by any other class of plants with such a free-flowering habit. They harmonise well with other bright tints, and assist in lighting up those of a duller hue. The short duration of the individual flowers has often been urged against their general cultivation, and it is true that the flowers only last one day; but no sooner is one gone than another is ready to take its place, the succession being maintained during the summer months. The ease with which they are cultivated may also be urged in favour of their admission into every well-kept collection of hardy plants. The lighter the soil and the sunnier the position the better the plants are suited, and the more satisfactory will be the result. *L. monogynum*, a pure white-flowered species of peculiar merit as a rockery plant, is also a perennial and a native of New Zealand. Nesting among or between stones it is quite at home, forming a large tuft of bright glaucous green leaves and beautiful large white flowers. It is easily propagated by cuttings. *L. flavum*, a yellow-flowered herbaceous perennial species, distributed also under the name of *L. luteum*, is extremely close to the next—*L. arboreum*, although the difference in the one dying down in winter and the other being a shrub is great enough to make them at all times distinguishable. It has an upright stem from 12 to 18 inches high, smooth, and angular. The flowers are produced on short peduncles at the ends of the branches, and the bright yellow petals veined or striated. Fresh flowers open every morning with the sun, and continue in succession during June, July, and part of August. Native of Germany. *L. arboreum*, the Tree Flax, unlike all the others, forms a bush or shrub, and in sheltered situations will attain a height of several feet. Introduced to this country as early as 1788 by Dr. Sibthorp, it is to be regretted that its free-flowering habit has not gained it a wider popularity than it at present possesses. It begins flowering early in April, and continues until the end of August. Native of the Levant.—D.

### IVY-LEAF PELARGONIUMS.

I LIKE the double-flowered varieties of these very much. They do not take the place of either single or double Zonals, but they have such distinctive features of their own as to give a tone to the conservatory. The single varieties I do not care so much for, and therefore grow very few of them. Their cultural requirements are very simple. Now is the time to propagate, in order to have good plants for next summer and autumn. They require to be kept growing through the winter months in much the same way as decorative Pelargoniums are managed. In March they should be placed into 7-inch pots, and in these they will form good plants. They will require to be pinched perhaps twice when young, so as to lay a good foundation. The shoots springing from the base thus formed are allowed to droop over the side of the pots and down below the stage on which they flower. We have them mixed with *Begonia Sedni*, still one of the best of Begonias as a front-row plant, and the effect is both novel and pretty. Some of the strong-growing varieties, such as *Madame Pagès*, are best suited for climbing up pillars.

The sorts I prefer are *Anua Pfitzer*, *Gloire d'Orléans*, *Madame Jeanne Wonters*, *Gazelle*, *Mons. Dubus*, *Album Plenum*, *Sylphide*, *Eurydice*, and *Finette*.—B.

### EAST LOTHIAN INTERMEDIATE STOCKS.

ON paying a hurried visit to Ockenden, the country residence of T. W. Board, Esq., M.P., I was much impressed with the usefulness of East Lothian Stocks, both as an effective bedding or border plant and as a source of useful cut flowers. The habit in the various colours are uniformly dwarf, compact, and branching, the colours bright and distinct, the flowers double and fragrant. I think it is a great mistake that such beautiful plants should be banished from the flower garden for the sake of masses of gaudy scarlet Pelargoniums or yellow Calceolarias, or, still worse, to give place to carpet beds, a craze which I hope is now on the

wane. Mr. George, the able gardener at Ockenden, wishing his plants to be in perfection about the end of July, does not sow his seed till February, and I have no doubt, from the appearance of his plants, that they will continue to be a mass of bloom till frost cuts them off in late autumn. The strain is certainly an excellent one, supplied, I understand, by Messrs. T. Methven & Sons of Edinburgh.

Amongst other matters worthy of notice in this well-managed establishment is a very fine example of extension-trained Peach tree, it having covered some 25 feet of wall in three years.—R. INGLIS.

### ALLIUM PEDEMONTANUM.

THE plant represented in the annexed woodcut (fig. 17), deserves all that can be possibly said in its favour, for it may be said to be truly an alpine bulbous plant of rare merit, and destined to assist largely in the embellishment of our hardy bulb borders all through the earlier part of the season. It is fortunately quite devoid of the disagreeable garlic smell usually characterising Alliums which must be tolerated with the showy flowers of the others. For making clumps in the mixed border or



Fig. 17.—*Allium pedemontanum*.

the rock garden this bulb is undoubtedly a superb and exceedingly desirable acquisition, as it increases quickly and without becoming in the least troublesome, so compact is its habit of growth. It is also a most useful pot plant, with a considerable advantage over other spring bulbs in the length of time it remains in bloom, and even after being cut the flowers are quite fresh for a long period. As in all probability it will bear forcing well, it might be had in bloom soon after Christmas. It forms tufts of from four to six narrow grass-like leaves, having a very graceful drooping habit, and above which rise in great profusion the charming umbels of drooping dark rosy-pink flowers. It is increased by division or seeds, which ripen plentifully.—M. S.

GLASS HOUSES IN THE BOTANIC GARDENS, SYDNEY.—We understand that the firm of T. H. P. Dennis & Co. of Chelmsford have been entrusted with the carrying out of a series of glass houses for the Botanic Gardens, Sydney, New South Wales, under the superintendence of



C. Moore, Esq., and to the designs of Mr. Fawkes, managing partner of this firm. The scheme comprises a complete arrangement of winter gardens, &c., of Messrs. Dennis & Co.'s patent wrought-iron construction; and the work, already sanctioned by Government and now approaching completion, consists of two ranges of span houses, all 20 feet in width, one adapted for stove plants and the other for Orchids. In each case a central tiered stage is provided, as well as side stages next the glass, the latter so arranged with slate sides and perforated slate bases that plunging and propagating operations may be easily carried on. The houses are provided with the most recent improvements in ventilators, which are so disposed that fresh air may be admitted at pleasure, either under or over the plants, or both. In the former case the air impinging upon the pipes is heated before it reaches the plants. The same firm are commissioned to supply the whole of the heating apparatus for the above series of houses. The apparatus consists of a single large Dennis patent horizontal tubular boiler, with mains, valves, and connections, so arranged that each part of each house may be heated independently.

### NEW CARNATIONS AND PICOTEEES.

THE following new flowers obtained awards from the National Carnation and Picotee Society held at South Kensington last week.

Scarlet bizarre Carnation Joseph Crossland, exhibited by Mr. Douglas, raised by Mr. Simonite. It has bright scarlet and maroon flakes on a clear good white ground. First prize in its class and first-class certificate.

Mr. H. A. Rolt obtained the second prize for Mr. Dodwell. It is a distinct and good flower, with broad scarlet and maroon flakes.

In the crimson bizarre class the first prize and a first-class certificate were awarded to Mr. Douglas for Mrs. Francis Whitbourn, one of the very best flowers in this class. The colour is pinkish crimson and purple, in good well-defined flakes. It is one of Mr. Dodwell's seedlings.

The second prize and a first-class certificate was awarded to Mr. Douglas for Crimson King (Dodwell), one of the darkest flowers yet raised, a very distinct and desirable variety.

Mr. Charles Turner of Slough obtained a first prize and first-class certificate for heavy rose-edged Picotee Duchess (Fellowes). It is a better flower than Constance Heron, by the same raiser, of the largest size, with a broad well-defined scarlet edge and good white ground.

The same awards were given to Mr. Turner for Maude (Fellowes), one of the best light rose-edged flowers yet raised. It has broad smooth petals, with a clear white ground. The first prize in the light purple seedling class was also awarded to Mr. Turner for Juliet, a very large purple flower, with a good white ground and well-defined purple edge.

Orlando (Fellowes), also exhibited by Mr. Turner, is a very promising flower in the rose-edged class.

Messrs. Jas. Veitch & Sons of the King's Road, Chelsea, were awarded first-class certificates for the following varieties selected from a large assortment of border flowers, nearly all of them being of great merit.

Celia, delicate rose-pink, one of the most distinct and charming of the whole group.

John Barnet has large deep pink flowers, with a tinge of rose, the flowers of good form.

Mrs. Glen.—A very fine yellow variety, with broad well-formed outer petals. This was selected as the best of yellows, but the Judges thought highly of Miss Mary Anderson, which is also clear primrose-yellow, and scarcely inferior to it.

Harvester.—A very finely formed buff-coloured variety, which is certain to become immensely popular. It is the same colour as Florence, which has fringed petals, while this variety has smooth well-rounded outer petals.

The same firm also obtained a first-class certificate for a very distinct and freely flowered Pink named Rose Perfection. The flowers are self-coloured and of a deep rose.

### THOUGHTS ON CURRENT TOPICS.

"STRAWBERRY time," alluded to by Mr. Luckhurst last week, has ended with many for the season—at least, the fruit-gathering time has; but the time for planting is with us, and those who have taken care to obtain strong well-rooted young plants, and insert them promptly yet carefully in good soil, will have the finest of fruit before they are a year older.

As in most other things, there are two methods of planting Strawberries, a right and a wrong, and I think it will be safe to say that more are planted wrongly than otherwise, simply because the wrong way is the quickest. The difference between right and wrong in this matter is very simple. If you want to do the work as it should *not* be done, plant with a dibber; make smooth round holes 3 or 4 inches deep, be careful to let the roots hang straight down, then plunge the dibber down by the side of them, pressing them all of a heap against the smooth firm side of the cavity. That is a very ready mode of planting and an excellent example of art working against nature. Plants thus wedged in will not grow freely, yet every year they are so planted in thousands.

THE right way of planting is the exact opposite of the straight-down-sticking-in-root-crowding process. The young plants

which root naturally tell as plainly as plants can tell how the roots should be disposed. They do not go straight down in a bundle, but radiate from the collar, more approaching a horizontal than a vertical position, and always separated, never packed together. Take, then, a lesson from Nature in planting Strawberries, spreading out the roots—that is, planting with a small fork, trowel, or hand, never with the dibber, and although a little more time will be occupied in the work the gain in the end will be great. Those who cannot perceive there can be so much difference between the two modes of planting had better try them fairly as I have done, and then I think they will never plant with the dibber again.

As to varieties of Strawberries, there is no doubt that most or all are good under certain favourable conditions, while most or all are indifferent under differing circumstances. The Strawberry is, in fact, a capricious fruit. Even the most generally useful form of all, Sir Joseph Paxton, fails in some soils, and the productive President is in some places worthless. Loxford Hall Seedling I have seen most satisfactory in every respect in some gardens, while in others it would scarcely grow at all. Helene Gloede is in some places very good, in others quite indifferent; and so it is with most others, including British Queen.

It is greatly to be regretted, says a correspondent, that this fine-flavoured Strawberry is so seldom seen now, as none of the larger varieties can equal it in richness of flavour. But surely British Queen is not a small Strawberry? Well grown, I think not many are larger; a few are, but only a few. It is one of the largest as it is the richest of Strawberries; but fickle. In some soils it fails, in others it succeeds. In a garden in the south of England, almost a town garden, where the soil is light on gravel, it thrives better than any other variety and forms the staple crop. It is grown very much as described on page 63, and more of this delicious Strawberry might be had if care were taken in choosing sheltered positions and relying mainly on young plants. Weak runners, cold heavy soils, and dibber-planting cannot be expected to produce the finest examples of this large and splendid Strawberry.

NEXT to it in point of flavour is, I think, Dr. Hogg. The fruit of this is also larger and of better colour, while the plant is more hardy and vigorous. Still, it thrives best under the conditions referred to—light rather than heavy soil, and sheltered rather than exposed positions. A fruiterer tells me that Londoners have found out the merits of this variety, and the fruit, neatly packed in baskets, sells for more money than any other sort; and he also tells me that hundreds of baskets are labelled Dr. Hogg, and charged for accordingly, that are selected examples of Sir Joseph Paxton. My thought on that is—if Londoners are never duped more seriously than by that "sharp practice" they will not be much hurt, still Dr. Hogg is decidedly the richer-flavoured fruit. The said fruiterer could this year readily sell good examples of the variety named for 6d. a pound when ordinary sorts were going a-begging and could not be disposed of at any price. I think this is plenty about Strawberries at once and pass on.

I THOUGHT Mr. Iggulden wrote very sensibly on the subject of exhibiting on page 64. Certainly, as a rule owners of gardens gain more than they lose by permitting their gardeners to win a few prizes, if they can, at exhibitions, and if they fail they make strenuous attempts to improve their culture. Some gentlemen, however, have been compelled to prohibit their gardeners showing because the gardeners preceding them indulged in it immoderately. That is where mistakes are sometimes made that might be avoided with advantage to all.

By the way, I thought it a little curious when I read "I consider Foster's Seedling the best early white Grape, and would place Buckland Sweetwater second to it, both succumbing to Golden Champion and the Duke of Buccleuch." How the best and the second best should succumb to the third or fourth named without the latter being superior to them I do not exactly see; but, then, I fail to see everything; but I cannot fail to see the massacre of Muscats at June shows, and I think it a mistake to offer prizes for this fine Grape so early in the season.

It is very gratifying to read that the National Carnation and Picotee Show was so successful, and that the numbers of exhibitors are increasing. There is no reason why they should not increase still more considerably, since such a vast number of persons in town and country can grow these delightful flowers. They rank amongst the very best of plants for town and suburban gardens,



and are being grown more extensively year by year. I think the reason why there are not more exhibitors is that ordinary cultivators hesitate to stage their blooms because they do not understand how to dress them; and it cannot be expected they will enter the lists if there is the slightest suspicion that the assistance of experts, however good their motive, is given to their friends in the smaller classes.

WITH the object of widening the interest in the shows of the Society in question, and of encouraging the extended cultivation of Carnations and Picotees, would it not be well to offer prizes for undressed flowers of Carnations grown in borders? Prizes for, say, the best stand of six or twelve white and scarlet Cloves and rose-coloured Carnations, also for stands of flaked varieties and bizarres, could scarcely fail to meet with a response, and the wonder would be great indeed if the prizewinners in these classes remained satisfied with these productions. It is practically certain they would be induced to aim higher and attempt to produce more refined and perfectly finished flowers. High-class florists cannot be made in a season. Ordinary cultivators, yet great admirers of the flowers under notice, need some inducements to enter on somewhat equal terms with each other. They must see a chance of some kind of winning a prize, or at least of avoiding feeling humiliated by the great disparity of their humble products with those of the highly skilled cultivators and experienced exhibitors. Splendid blooms can be grown in beds, and some of them need little or no dressing; but so long as the feeling exists that only flowers produced by plants in pots and delicately dressed are fit to stage, so long will exhibitors be few. Open the portals wider and invite the tyros in, and the probability is that exhibitors will be more numerous and tyros become fewer, because they will naturally grow into expert florists. These thoughts are humbly submitted to the attention of those officials of the Society mentioned, who are so commendably engaged in promoting the improved culture of the most beautiful and sweet flowers of our gardens.

THE Journal has of late been rich in appliances, Foster's Rose-holder, Ward's Grape-troughs, and Bennett's ligatures being eminently worthy of the prominence that has been given to them. All alike appear to possess the virtue of simplicity with efficiency, and as it is reasonable to suppose they will not be offered at prohibitive prices, they can scarcely fail to be tried by many who require articles of this kind in their practice.

I OFTEN think there is more in a small article a few inches long than in an elaborate paper of two or three columns. The very suggestive and useful note on page 66 on the brilliant but often disappointing A. K. Williams Rose in a case in point. "One Who Knows" has done good service in communicating his experience, and those who have so far failed, as many have undoubtedly done, to grow this fine Rose to their satisfaction will do well to try plants in the "dormant bud." There will not be much for the money, but it will be far more satisfactory to see the dormant bud break boldly and grow strongly, eventually producing magnificent blooms, than to watch larger plants, because a year older, dwindle away as many have done during the past two years.

MR. BARDNEY tells us how to stop decay in Melons, and the method is simple enough—namely, raising the temperature 5° at night; but I cannot help thinking if he had stated the temperature of his house before he applied the remedy—the danger temperature of a damp house—that his note would have been just a little more complete and possibly a trifle more serviceable to some of the readers he commendably hopes to assist. I wonder what he thinks about the matter, but perhaps shall not have to wonder long, and perhaps also I may merit a rebuke for my obtuseness and temerity. Time will tell.—A THINKER.

#### NARCISSUS BICOLOR HORSEFIELDII.

(THE KING OF DAFFODILS.)

CONSIDERABLE discussion has lately taken place in the *Manchester City News* concerning the origin of this handsome Daffodil, and as it is one of the most generally appreciated of the varieties grown at the present time the following extracts from letters upon the subject will doubtless be of interest to many readers.

Referring to a previous communication from Mr. Broome of Didsbury, Mr. Brockbank gives the following remarks:—"Mr. F. J. Broome states that it was James Percival, sen., who honoured Horsefield by naming the bulb, and presented him with the copper kettle about 1851. This sentence contains many errors. The facts are as follows:—Until 1854 Horsefield

retained the stock of bulbs of his Daffodil, and they were not dispersed until after his decease in that year, when they were sold for the benefit of his widow. This was the 'letting out' to which I referred. There were twenty-eight blooming or full-sized bulbs, and nine small ones. The former were all sold at 1s. 6d. each, and 8s. were given for the lot of small bulbs. These thirty-seven bulbs were all the produce up to Horsefield's death, and according to the rate of increase in Daffodil bulbs they would represent the growths of about eight years; according to which calculation the first flower might have been produced in 1847.

"The 'letting out' was attended by many florists, for the fame of the Horsefieldii Daffodil had spread far and wide. Amongst those present was John Duckworth, landlord of the 'Swan Inn' at Pilkington, and it was he who offered a copper kettle to be competed for the season following. It was then arranged that a Narcissus Show should be held on that occasion. The Show was held the following spring at the 'Swan,' and it is interesting to note that there were twenty-three varieties of the Narcissus exhibited. The winner of the copper kettle was Joseph Allen, first, the present landlord of the 'Eagle and Child' at Whitefield, where the Botanical Society's meetings are now held, and the custodian of their interesting library. He was a purchaser of three bulbs at the letting-out, and afterwards he bought the nine small bulbs from the widow. Mr. Duckworth presented the copper kettle accordingly, but this was the only occasion upon which the prize was given, and the only Narcissus Show that was held."

Mr. James Percival, Smithy Bridge, Rochdale, replying to these statements gives the following history, which is undoubtedly correct:—"I may state that I have seen James Horsefield, the only living son of the late John Horsefield, and he quite verified my remarks as given by Mr. Burbidge at the late Narcissus Conference held in London in April last.

"I cannot see how Mr. Brockbank conceives the idea of robbing Mr. Horsefield of all the merit in raising this fine seedling Daffodil, for had it not been for the fine pod of seed which he detected in his garden, sowing it and watching it with the greatest anxiety for the result, we should not have had any Narcissus Horsefieldii now. But of the batch of seedlings there were two other forms, one of them something like a Narcissus major, another something like the form called N. princeps. I told Mr. Brockbank, when I saw him in March last, that these forms were thrown away because they were poor varieties, and certainly they are so, even compared with the old Narcissus bicolor; but I may say now that the two varieties are still in existence, and that I am in possession of them both. I should like to know what the fine forms of the wild Daffodil were, finer than the N. bicolor previous to the advent of the variety Horsefieldii, either in gardens or the Mersey Meadows or elsewhere. Are the Lent Lilies of the Mersey Meadows finer than elsewhere? Granted they are so, then the question arises, What insect could find out this particular fine form of Daffodil to fertilise this particular flower in this garden to bring forth that noble seed vessel, to produce that noble flower Narcissus bicolor Horsefieldii? Let me tell Mr. Brockbank that Horsefield was fully alive as to the objects to be gained by cross-fertilisation. Previous to raising this Daffodil he raised a Tigridia (the Tiger Flower), named Tigridia conchiflora var. Watkinsonii, which he sold to T. D. Watkinson for £10. It is figured in Paxton's 'Botanical Magazine' about 1850, and was fertilised by pollen from T. pavonia.

"I may tell Mr. Brockbank that it was I that named the Narcissus, at the request of Mrs. Horsefield, at the letting-out. There were two Narcissus Shows, and I was one of the judges at both Shows. The kettle referred to as being given was not offered, as Mr. Brockbank states, by Mr. Duckworth, but by a Joseph or Joe Allen—not the same Allen who won the kettle."

#### ROSE WILLIAM ALLEN RICHARDSON.

PERMIT me to supplement the remarks of "S. W." at page 34 with respect to the above Rose. It is a delightful Rose, especially in the bud state. In size it is almost identical with the Tea Madame Falcot. The colour is deep rich orange yellow, a shade quite new and distinct, the margins of the petals shading off to sulphur-white. This shows to good advantage the richness of the predominant colour. Having recently handled some hundreds of its buds for buttonhole use, I have noticed many which have scarcely a shade of that rich colour which so marks the original plant. This, I am informed, is due to the age of the plants, and that many of the flowers produced from one-year-old plants often come colourless, but two-year-old and upwards always attain that richness of colour which is fast making it famous—in short, it is one of those charming varieties which attract admiration from all who see it.—E. JENKINS.

#### ROOT-BOUND CHRYSANTHEMUMS—CULTURE.

WHEN we have opposite extremes in the cultivation of any particular class of plants, we may generally take the happy medium with a fair chance of being on the right road. It is not very often such examples of Chrysanthemum-growing as those of the correspondents to the Journal in the recent issues are brought into notice. Mr. Murphy commences by praising "an excellent man in his profession," and, referring to his Chrysanthemums, remarks, "Those are already root-bound; the roots have reached the edge of the pots." Does Mr. Murphy or his friend really mean to call a Chrysanthemum root-bound because the roots have reached the edge of the pots? If, as "R. P. B." surmises, and which I am inclined to think is the



case, the plants have been insufficiently potted, they will in a sense very soon become root-bound, and, taking this to be the case, our friend is certainly rather behind. But to suit the argument, we will consider the plants have been properly potted, in which case there is nothing extraordinary in the roots having reached the edge of the pots by the end of June. Some of my earlier plants were in that state by the middle of the month, but they were not root-bound. When the plants are well potted the roots will work about the centre of the pots for many weeks before they exhaust the soil, and by that time they will have reached a stage of growth that further freedom for the roots is not required, as I will try to explain. I can quite understand an employer objecting to larger than 10-inch pots (perhaps there would be far more Chrysanthemums grown if they took less space), but to talk about 14-inch pots for ordinary plants of Chrysanthemums is taking a very extreme measure. I might say that the general size for very early struck trained specimen plants is a 12-inch pot. My advice to this grower is to let his plants alone.

In treating of the other extreme, that of "R. P. B.," I can but presume that he simply grows a few plants for decoration, and does not desire good exhibition blooms. I should be very sorry to find my plants at the end of June in 60-size pots or small 48's, for I do not gather what is meant by a 4-inch pot. My 60's measure nearly 4 inches, and ordinary 48's  $5\frac{1}{4}$  inches. "R. P. B.'s" plants I should say are root-bound indeed, and not likely to make specimens. His system of one shift only will be thought by most growers rather a loose one; no softwooded plant more repays for good treatment than the Chrysanthemum.

In giving a short account of my simple culture I would first say that a collection of Chrysanthemums should be divided into three sections—spare rooters, medium rooters, and strong rooters. For this a grower must know his varieties; if not, he must watch his plants closely to avoid overpotting, and according to the need of his plants will he use discretion as to size of pots for final potting.

I prefer cuttings, as far as I can get them, taken off at a level with the soil, and not suckers in the ordinary sense, as I am of opinion they root more freely, and do not club or throw up other suckers as those taken with roots from beneath the soil. It matters little if they are inserted singly or in store pots. If the quantity is large or the plants cannot be attended to daily the latter is perhaps the best, at least it is my plan. I like to commence striking cuttings about the middle of December in a cold frame, made frost-proof if possible, and with favourable weather to be able to pot them into 60's by the beginning of March or earlier, placing the strongest into full-sized 60's, and the weaker ones into small 60's. From six to eight weeks later they are shifted into 32's and 48's respectively, and my final potting commences by the third week in May, and continues throughout June as the plants are ready, so that the last are finished by the end of June. My largest pots are 10 inches in diameter, commonly called 16's, but not the small 9-inch with narrow bottoms of some potters. A 10-inch pot should be  $8\frac{1}{2}$  inches across at the bottom. My second size are  $8\frac{1}{2}$ -inch, or full 24's, and a few 28's, rather smaller than the 24's, for the very spare rooters, so that the plants have pots suitable to their growth.

For soil I prefer one-half of good yellow loam, rather stiff, yet with as much fibre as possible; the other half is composed of equal portions of sharp gritty sand and decayed stable manure, then to every six bushels I add one bushel of small charcoal and 10 lbs. of dissolved bones. I am very particular as to using the soil in just such a moist state only as will allow of it being rammed home as tight as my rammer can drive it. Treated thus the plants will not be root-bound, because in two or three weeks some of the roots have reached the edge of the pots. They will continue making roots and growing freely until August, especially with the occasional use of weak guano water. Should the dissolved bones not be used the plants will require liquid manure oftener. With the plants well root-bound by the middle of August we find the plants well grown and ripened, proper attention having been taken to keep suckers and laterals off as fast as they appear, and securing all the leaders possible at this stage, as it is a mistake to reduce to the exact number of blooms required until the buds are secured. I keep the plants rather quiet while the buds are forming; strong supplies of liquid manure "blind" the buds, but afterwards the plants will take large quantities of solution of guano and sulphate of ammonia. I finally finish off with pure sulphate of ammonia, half an ounce to the gallon, until the blooms are fully expanded, and then gradually reduce the supply.

I have endeavoured to show a system without hard-and-fast rules. To treat on the thousand and one peculiarities of the different varieties would be an endless task, which no one would like to commence, and these the cultivator must try and master for himself. I say Try, for I find after fifteen years the Chrysanthemum is to a great extent my master. I would just remark in conclusion that I have simply treated on plants grown for exhibition as cut blooms.

Another time I may be able to treat on specimens and for decoration.  
—N. DAVIS, *Camberwell*.



FROST IN JULY.—Mr. R. Savill, Watford, Herts, writes as follows:—"Upon the night of the 24th of July (Friday) my neighbour had a plant of Vegetable Marrow killed by the frost, and several other plants were much damaged."

— RULES FOR ALLOTMENT GARDENS.—A correspondent desirous of framing a few simple rules for the management of the above, will be obliged if copies of any that have worked well in country districts can be forwarded to him through this office. They may be addressed to the Editor.

— WE regret to learn of the death of a provincial nurseryman of repute—Mr. WM. CROWDER, which took place at his residence, Lincoln Road, Horncastle, on the 23rd inst., at the age of fifty-seven. Mr. Crowder was well known in the locality as the proprietor of nurseries at Thimbleby, Horncastle, and Tetford, and had gained a wide business connection.

— THE GARDENERS' ROYAL BENEVOLENT SOCIETY.—We are glad to learn that Capt. Hargreaves, The Mount, Bishopstoke, has decided to open his grounds on Bank Holiday, August 4th, for the benefit of the above Society, and has also kindly promised to pay for a band, so that the receipts at the gates may not be used for that purpose. Mr. George Forty, the gardener, hopes to be enabled to send a good addition to the augmentation fund as the result of his employer's thoughtful generosity. For this fund Mr. Cutler has received £524 16s. 6d., and expects this amount will be much increased, as he trusts the collections will be very large on "Gardeners' Monday," and so do we.

— MESSRS. JAMES CARTER & Co., High Holborn, send a box of BALSAM FLOWERS of a very choice and excellent strain. The blooms are full and well formed, over 2 inches in diameter, and varied in colour. Some pure white blooms are very handsome. Several brilliant shades of scarlet are represented, with salmon, pink, crimson, purple, and mauve. Several of the flowers are particoloured, streaked, striped, and mottled, and have a handsome substantial appearance.

— THE annual Exhibition of the Northern Section of the NATIONAL CARNATION AND PICOTEE SOCIETY will be held in the new Town Hall, Manchester, on Tuesday, August 12th, 1884.

— THE large quantities of IMPORTED PINE APPLES which are now seen in the London markets have necessarily greatly reduced the prices; and during the present week we have seen on the hawkers' barrows in the City some really fine fruits, 3 to 4 lbs. each, at 6d. each, and at 9d. and 1s. fruits that are better in appearance than many home-grown ones at exhibitions. The growers' price must be exceedingly small.

— THE magnificent SMOOTH CAYENNE PINE APPLES which Mr. R. Nicholas exhibited at Kensington recently were splendid samples of English-grown Pines, and very rarely are such fine even fruits seen either in gardens or at shows. Not one of the specimens shown was under 7 lbs. weight, and several were above that, one handsome fruit being 10 lbs.—a very unusual weight. It is satisfactory to find that this grand fruit is not quite neglected by English gardeners, as, notwithstanding the great difference in the price of the home and foreign-grown samples, the former are far superior in flavour, especially such varieties as the Black Jamaica, which is the chief favourite with many growers at the present time.

— MESSRS. E. WEBB & SONS, Wordsley, Stourbridge, send us samples of their NEW PEA WORDSLEY WONDER, which they describe as "the earliest blue wrinkled Marrow Pea." It is a very prolific and useful variety, with pods of medium size, mostly in pairs, and extremely well filled, the pods containing from eight to twelve peas, the majority containing ten. Some very handsome samples of this variety were exhibited at Kensington at the last Fruit and Vegetable Show, and then



attracted much attention from the experienced vegetable growers present. The height is about 2½ feet, and the flavour of the peas is very satisfactory. It will unquestionably soon find many friends.

— "MODERN WINDOW GARDENING" (London: Houlston & Sons) is the title of a new work by the indefatigable Mr. Samuel Wood, whose productions we have had frequent occasion to notice, and unfortunately not always in the most flattering terms. In the present work, however, there is a perceptible improvement in diction and accuracy. The book is by no means confined to the subject expressed in the title, for of the 176 pages only sixty-three are devoted to window gardens, the remaining portion being occupied with flower, fruit, and vegetable gardens. Lists of plants, fruit, and vegetables are given, with cultural instructions, mostly brief, but reliable.

— MR. C. BURTON, writing in reference to SCALE ON ACACIAS AND PINES, observes:—"In answers to correspondents, page 85, the Editor kindly recommends petroleum and softsoap for the purpose of cleansing, which I presume are infested with the white scale so common to Acacias. As there is a certain amount of risk in the hands of the inexperienced, it may be of service to some if I give a remedy that has answered without the slightest injury. First take one small-sized bottle of Fowler's Insecticide, dissolve the whole contents in one quart of hot boiling water, let it remain until lukewarm; then with an ordinary small-sized paint-brush wet as if painting the trunk and main stems; then with a piece of wet sponge, holding the twigs and foliage in the palm of the left hand, wash the whole carefully over, not using the sponge too wet. At that strength there is a great deal of foam. The scale will immediately assume a blue colour, and in a few hours may be syringed off. Double that strength may be safely applied. This latter strength in a pint of water will very effectually destroy scale on Pines applied with a piece of sponge tied to the end of a stick in the usual way."

— THE ninth summer Exhibition of the CHARLTON AND KID-BROOKE HORTICULTURAL SOCIETY was held on July 23rd and 24th last in the grounds of Charlton Park, kindly lent by Sir Spencer Maryon Wilson, Bart., for the occasion. This Society, which at its commencement was founded with modest pretensions, is now gradually developing into a first-class suburban show. Every effort has been made on the part of the Committee and their indefatigable Secretary, Mr. Coates, to render the Show a success and an improvement on former years, and we have no doubt but that, as the Society becomes more generally known, there will be no lack of first-class exhibits. The plants exhibited in the leading classes were admirable examples of cultural skill on the part of both professionals and amateurs. Special prizes were offered for the best staging of plants for quality and effect, and for the best group of plants arranged for decorative effect. In both classes there were numerous entries, and the competition so keen that the Judges had great difficulty in adjudging the awards. Mr. Jeffery, gardener to J. Young, Esq., Blackheath, was first in the special class for staging of plants, quality and effect, with very effective and choice plants; and Mr. Nute second with graceful and well-arranged plants, but not quite so choice in its composition. In other classes the principal prizetakers were Mr. Andrews, gardener to Lady Wilson; Mr. Shrubbs, Mr. Hadd, Mr. Garland, Mr. Reece, Mr. Jeffery, Mr. Nute, Mr. Taylor, and Mr. Baker.

— "M. S." writes:—"Some of the most curious and interesting plants in gardens are the STYLIDIUMS, for although not showy enough to merit cultivation on that score alone, their peculiar structure will recommend them to private cultivators who like to show something unusual to their visitors. They are chiefly natives of the colder regions of Australia, and if not actually hardy out of doors in our climate, thrive exceedingly well in a cool frame. The Telegraph Plant, the Sensitive Plant, and many other horticultural curiosities quite sink into insignificance when a comparison is made with the above in point of interest, and their requirements are so few that they may be cultivated with a fair amount of success by the most inexperienced. *S. graminifolium* and *S. assimile*, most generally in cultivation, are both very curious in the movement of their styles, which are jointed, having a singular elasticity, which, being touched by anything on the under surface, start with violence to the other side of the flower, and suddenly emit a shower of pollen, by which the flowers are fertilised and made productive."

— THE EVENING FETE AT THE HEALTH EXHIBITION on Wednesday, the 23rd inst., the proceeds of which are to be devoted to the Hospital Fund, was a great success, and was undoubtedly one of the

most brilliant gatherings ever seen in London. The Exhibition and grounds were most beautifully lighted, some thousands of coloured lamps being employed, and the fountains were very tastefully illuminated, producing some very novel effects. Numerous choice groups and collections of plants were contributed, very prominent at the entrance being a group of Pitcher Plants, Orchids, and miscellaneous new and rare plants from Mr. B. S. Williams, Upper Holloway, and Messrs. Fromow & Sons, Turnham Green. Mr. Aldous, Kensington, and Mr. C. Turner, Slough, also contributed imposing groups of plants. Mr. Hudson, gardener to J. F. Atkinson, Esq., Gunnersbury House, Acton, staged a group arranged in his usual artistic and effective manner, which was much admired by many visitors. Messrs. C. Lee & Sons, Hammersmith, also had a choice group of hardy shrubs. Mr. T. S. Ware, Tottenham, had a beautiful display, the large wire baskets and stands being tastefully filled with hardy flowers, which well proved what charming effects can be produced by a judicious selection and care in the arrangement. Roses were contributed by several firms, and at the stalls presided over by the ladies a rapid sale at large prices was effected. The Prince and Princess of Wales were present, and added materially to the funds by their exertions in the sale of flowers.

## ROYAL HORTICULTURAL SOCIETY.

JULY 22ND.

SCIENTIFIC COMMITTEE.—Sir J. D. Hooker in the chair.

*Vine Coccus*.—Mr. Pascoe exhibited some specimens from vineries in Jersey, together with two parasites upon them, a Chalcid and an unknown species. The coccus produced a large web. The species was not known.

*Sarracenia flava*.—Mr. G. F. Wilson showed a fine specimen of this plant grown in the open by a pond's edge. He said that *Dionæa muscipula* grew at the same place and had stood three winters. He also showed a species of *Lysimachia*, which always comes up in North American peat in which *Cypripedium* are imported. It was referred to Kew for name. He also exhibited *Begonia diversifolia* from Mexico. It had pink flowers and innumerable bulbils like the Himalayan species, by which it was propagated.

*Orchis pyramidalis* var. *cylindrica*.—Mr. Ridley reported that this was the name of the species exhibited by Mr. Loder at the last meeting. It is a native of Greece and Dalmatia. One flower was remarkable for having two labella.

*Fasciated Agapanthus*.—Mr. Murray said that he had observed a number of plants at Calais remarkable for being all fasciated, the flowers being normal. Mr. Wilson observed that he had known a case of *L. speciosum* being constantly fasciated.

*Large Foliage*.—Mr. Bennett exhibited leaves of *Aristolochia Sipho*, remarkable for the size of the leaves. Sir Joseph Hooker observed that the fineness of the foliage of the trees at Kew was very remarkable, notwithstanding the dryness of the atmosphere in the early part of the present summer.

*Antigonon leptopus*.—Mr. Lynch exhibited sprays of blossoms illustrating the climbing properties of the peduncles and pedicels of this plant, resembling the Vine and Virginian Creeper in this respect, their tendrils being homologues of flowering branches.

*Embryo Buds of Cedar*.—He also exhibited several of these top-shaped structures, not uncommon in the Cedar of Lebanon.

*Proliferous Spelt Wheat*.—Mr. MacLachlan said that he had seen a quantity of spelt in this condition on the Continent, resembling the so-called Egyptian Wheat, a variety of Revetts.

*P. Nordmanniana* Attacked by *Aphis*.—Mr. MacLachlan also reported on some branches sent to the last meeting by a horticulturist whose trees are nearly ruined. They were infested by a species of *Lachnus*. The only remedy to be suggested was to syringe with a fire engine with some antiseptic fluid, as the trees were over 20 feet high.

*Potato Fungus*.—Mr. Plowright sent specimens of Potato which had been artificially impregnated with spores, but protected on a portion of the stem about 5 inches from the base with cotton wool, so that no spores could attack them there. A quantity of spore-charged water was poured upon the foliage and upon the surface of the earth in the pot. In four days (July 9th) the fungus developed itself on the foliage and stems above the cotton wool. It gradually extended itself until the leaves and stems were entirely destroyed, excepting the parts protected. Four tubers were found, one diseased and three healthy. The diseased tuber remained attached to the stem; the diseased parts of it were farthest away from its attachment, so that in this instance the disease was believed by the experimenter not to be transmitted to it by the stem. Mr. Murray raised the question whether this conclusion was justified, as the tuber had not been cut open. The specimens were therefore referred to the Sub-Committee appointed to carry out experiments at Chiswick for further examination and report.

*Mushrooms Replaced by other Fungi*.—Mr. B. Fitter, of Thirlmere, Edgbaston, forwarded to the Secretary some Fungi which had made their appearance on Mushroom spawn. They were transmitted to Mr. W. G. Smith for examination and report, who replied as follows: "The fungus on the Mushroom bed is *Agaricus cristatus*. It has an offensive smell. This *Agaric* is capable of ousting the Mushrooms from beds. *A. fastibilis* and *A. dealbatus* do the same, so does *Xylaria vaporaria*. The bedding material so exactly suits the mycelium of these fungi, that if the spores once light on a bed, the resulting fungi are easily able to oust the rightful possessor."

*Rhubarb Stalks Dried*.—The Secretary reported that the sample sent by Mrs. Jones of Bedford was made into a preserve, but proved a failure. The stalks consisted of little else than woody fibre and were uneatable, while the syrup partook of a poor flavour of Rhubarb, the chief value of the stalks having been already expressed.

*Clematis Proteus*.—This variety is remarkable for bearing double flowers



in July, but a month later it throws up only single flowers. The double flowers were exhibited on a former occasion. Mr. Noble now sent single flowers from the same plant. It is of a pale lavender colour.

*Styrax japonica*.—A little-known species was exhibited by Mr. Veitch with flowers not unlike the common *Syringa* (Philadelphus). It was figured in Siebold's "Flor. Jap.," tab. 23.

*Black Currant, pale-fruited var.*—Mr. Plowright sent a branch of this variety for information as to its origin. It was referred to Mr. Barron.

*Diseased Pear Trees*.—Specimens of branches attacked by some disease were received from Mr. F. Forster of Daventry, who observes of it: "When the tree is first struck in a fresh place the bark gradually thickens and looks thick and full of sap, then small cracks appear, then a brown spot, and the place finally cankers away." It was referred to Mr. Murray for examination and report.

*Primula Rusbyi* (?)—A plant with small lilac flowers was sent by Mr. R. Dean of Ealing, received from North America. It received a first-class certificate, and was forwarded to Kew to ascertain the correct name.

*Begonia*.—A very rich-coloured *Begonia*, King of Kings, was sent with blossoms of *Pelargonium Henry Jacoby* for comparison by Mr. Cannell.

*Teratology*.—The Rev. G. Henslow exhibited several specimens illustrative of metamorphoses in flowers. *Double Purple and White Hyacinths*.—In these the difference appeared to be that in the former the petals are multiplied indefinitely, and are then continued into a small green mass of minute leaves in the centre, while in the white the transformation is not so complete, open carpels being found in the centre. *Petaloid Carpels in Hesperis matronalis*.—On dissecting the flowers of the plant brought by Mr. Loder to the last meeting Mr. Henslow found some transitional states well shown of carpels partly foliaceous and green and bearing ovules, the other part being petaloid. *Monstrous Begonias*.—Several modifications of the flowers of *Begonia*—e.g., antheriferous styles, absence of ovaries, petaloid styles, superior ovaries, ovuliferous petals, or such metamorphoses being peculiarly characteristic of *Begonias*. *Fuchsias* with petaloid anthers and with foliaceous sepals.—These forms are not infrequent in this genus, and have been previously described, as by Dr. Suringar in *Gardeners' Chronicle*. The petaloid variety of anthers is called "scaramouche" (Bull. de l'Acad. Belg., xviii., part 2, 505.) Virescent carpels, a feature characteristic of the Alpine Strawberry. Foliaceous bracts in a *Heracleum*, Ivy, Aster, and multiplication of spathes in the white variety of *Anthurium Schertzerianum*. *Anemone* with petaloid bracts to the involucre, and another specimen with a second flower in the axil of a bract of the involucre.

*Hybrid Digitalis*.—The Secretary also reported on some hybrids between *Digitalis lutea* and *D. purpurea*. These have been twice described (by Koelreuter, Acta Acad. Petropol. A.D. 1777, and by the late Prof. Henslow, Trans. Camb. Phil. Soc., 1831). In both cases, as in the present received from Mr. A. Dean, the former was the female parent. The fig. of the corolla given by Prof. Henslow is of a darker purple than any of Mr. Dean's, though he reports that earlier blossoms were of that character. There is some variability in the size of the flowers, some being scarcely larger than normal flowers of *D. lutea* (less than 1 inch), others reaching  $1\frac{1}{2}$  inch, but none attaining to the average length of *D. purpurea*—2 inches to  $2\frac{1}{2}$  inches. The purple spots characteristic of *D. purpurea* are sparsely scattered or wanting: hence the spikes of flowers much more resembled *D. lutea* than *D. purpurea*.

*Antirrhinum majus* (monstrous).—He also reported on specimens sent to the last meeting by Mr. Cannell. There was some slight difference in the structure of the two kinds, though both had a very similar double appearance. In one with a yellow colour prevailing the posterior petal was normal with a purple apex, but the four usual stamens had petaloid anthers, the latter reproducing the orange lips characteristic of the corolla. The posterior or fifth stamen was present and similarly constructed; this was accompanied by two additional and narrower filamentous processes, but without anthers, one being on either side of the posterior stamen. The carpels of the ovary were separate, the apex of one being sometimes petaloid. In place of the axile placenta was a petaloid structure apparently made of abortive stamens, sometimes free, with variously formed yellow appendages in place of anthers, and sometimes joined together. This contained a second similar but more rudimentary structure within it, and which was succeeded by a third. The purple form was not very dissimilar, having only the filaments free from the corolla, the anther lobes being ovate in form, orange below, and dark purple above. The ovary, as in the previous case, was open, and a corolla protruded from the interior. The limb of the latter was approximately regular, with orange papillæ round the margin. This contained petaloid structures, apparently representing abortive stamens.

### SEED-GROWING IN ESSEX.

THE farms of Essex have long been famous for producing, in anything like favourable seasons, early and heavy crops of grain. Earlier they might naturally be expected to be than those grown in the northern counties, but their superiority is due quite as much to skilful cultivation and good natural soil as to the valuable climatic advantages which they enjoy. That the present year is likely to prove a favourable one for farmers in all parts of the country we note with great satisfaction, and that Essex farmers in particular will probably enjoy a bountiful harvest we have gathered from personal observation. With few exceptions the crops are heavy and rapidly approaching a ripe condition. That the fertile Essex soil is capable of producing remarkable crops besides those of Wheat, Barley, and Oats, a visit to one of the most notable farms in the county—that of Messrs. J. Carter & Co. at St. Osyth—amply testifies. The famous High Holborn firm possesses land in this district to the extent of nearly 1500 acres, and it may be said that not a yard of it is wasted, two-thirds of it being in the neighbourhood of Dedham, devoted partly to the growth of annuals, but chiefly to the cultivation of seed Wheat and Barley; and the remainder in and around St. Osyth, the latter portion being almost entirely occupied by flowers.

It may readily be imagined that so large an extent of ground, when

covered by the wealth and variety of flowers which masses of annuals produce, presents an appearance not easily forgotten, and affording a striking contrast to the rich fields of tall and waving grain which form, as it were, a background to a gigantic floral picture. This is indeed the case, for flowers are viewed in an aspect which probably affords no parallel in any other part of the country, and they are present in such a striking diversity of habit, hue, and size that a first view, which at first is positively startling in its brilliancy, becomes speedily transformed into one of indescribable charm. An acre of flowers! The idea of such a quantity presents a pleasurable prospect to the mind; but a hundred acres of all the brightest and most popular annuals in gorgeous array gives an effect which it would be vain to endeavour to describe.

Our visit to St. Osyth was preceded by a hasty survey of the Hill farm at Dedham, where many annuals were flowering brightly in masses of moderate extent. Of these the most notable was *Godetia Lady Satin Rose*, which, though comparatively new, is already becoming immensely popular; the rosy-crimson flowers are lighter in colour than those of *G. Princess of Wales* or *G. Lady Albemarle*, and are of a particularly delicate and attractive hue. Though exceedingly profuse in flower, this variety is of compact bushy habit, and would thus prove a useful pot plant, for which purpose it will doubtless be largely employed when its adaptability is fully recognised. Another less known but very pretty annual which was in flower near the *Godetia* was the pink *Lavatera trimestris*. The flowers are large in size and very showy, the plant growing from  $2\frac{1}{2}$  to 3 feet high; it is certainly one of the most beautiful of annuals, and there is little cause for wonder that both the pink and white variety should have been so greatly admired by Lavater, from which circumstance they are said to have acquired their generic name. The *Lupinus* were one of the most striking features at the Hill Farm, one of the handsomest varieties being *L. hybridus atro-eoccineus*. This is rose and white in colour, and is perhaps the most showy of the annual *Lupinus*; *L. hybridus insignis* is of somewhat similar hue, but is of a slightly darker shade. A fine mass of *Tom Thumb* yellow *Tropæolum*, and attractive beds of *Clarkia integripetala* white, *Convolvulus minor* blue, *Love-in-a-mist* (*Nigella damascena*), *Saponaria calabrica marginata*, and *Viscaria coeli-rosea* were also noteworthy. The only vegetable crop was a breadth of about an acre of a Pea known as *East Anglian*, which is described as a "dwarf Ne Plus Ultra;" it certainly bore a very heavy load of large and well-filled pods, and is of useful dwarf habit, but whether the peas are equal in flavour to those of the fine variety mentioned is debateable.

A pleasant drive of twelve or fourteen miles from Dedham to St. Osyth enables the visitor to see some of the finest fields of Wheat that could be seen in the country, and amongst them several acres of Messrs. Carters' Royal Prize Red were in fine condition, the straw being surmounted by ears of immense size. The flower farms, however, are reached at last, their vicinity being announced by the rich perfumes which the flowers disseminate long before the latter are seen. The sleepy little village must be one of the pleasantest of English rustic dwelling-places at this period of the year, for it is surrounded by beautiful flowers, and the air is loaded with pleasant odours from the occupants of adjacent fields. The rich and glowing masses of colour which those occupants form when seen stretching away almost as far as the eye can reach proved that the brief glance at the flowers on the Hill farm was but the foretaste of a crowning pleasure. The annuals are more numerous, in larger masses, and they appear even brighter, but brief allusion can only be made to the most popular of them.

The first to attract attention was a large breadth of *Tropæolum Empress of India*, which is one of the many *Tom Thumb* varieties raised at St. Osyth. It was selected from the *Scarlet King* of *Tom Thumbs*, and is of a distinctly darker shade, the colour being a dark glossy scarlet, and the flowers borne in such profusion as to suggest the appearance of a sheet of brilliant colour. This was perhaps the most striking bed on the farm, and elicited great admiration. Although not in its immediate vicinity we will continue our remarks on the other *Tropæolums*, which are grown so largely here. Of these the dark foliage of the *King of Tom Thumb* varieties render them decidedly superior to the older sorts, and the selections of scarlet, golden, spotted, ruby, and *King Theodore* were excellent in colour. A beautifully spotted variety named *Ladybird* is very attractive, and the delicate creamy white flowers of *Pearl* are, though small, very charming and free. The latest addition to the *Tom Thumbs* is *Beauty of the Border*, the colours being a novel combination of crimson and yellow, many of the flowers being spotted in a very pleasing manner. This is a very distinct variety, and should become popular. These annuals are grown in masses of perhaps one to two acres in extent, and their remarkable profuseness of bloom and varied and showy colours render them brilliant in the extreme.

The annual *Chrysanthemums* are grown in very large quantities, as might be expected from their rapidly increasing popularity. The three well-known varieties, *Lord Beaconsfield*, *Mr. W. E. Gladstone*, and *The Sultan*, were flowering in large and handsome masses, as was the beautiful *C. tricolor Burridgei*. Of the double forms *Dunnetti's Double White* and *Double Golden* are grand selections, the flowers of the former being almost equal to those of the large-flowered perennial *Chrysanthemums* in size and colour.

*Godetias* are to be seen in great variety; in fact, they are grown by the acre, all the more popular older sorts being largely represented amongst the newer forms. In the former category may be classed the many beautiful varieties of the *Whitneyi* type, the popular and charming *The Bride*, *Dunnetti*, and the small-flowered and dwarf-growing *reptans*. These, however, are out-classed by the brilliant *Lady Albemarle*,



Princess of Wales, and Lady Satin Rose, and the attractive Spotted Carpet. A breadth of about an acre of Lady Albemarle exhibits the merits of this splendid Godetia in perfection, but it is questionable if it is not surpassed by Lady Satin Rose, which was described above. Spotted Carpet is prettily spotted with crimson, but is not as effective in the beds as the crimson varieties.

Few flowers are grown at St. Osyth in larger quantities than Larkspurs, and nowhere can better selections be seen. One bed of perhaps two acres in extent of the dwarf rocket varieties was strikingly good, the close Hyacinth-like spikes of bloom being remarkably large in size and diversified in colour. A splendid bed of Auricula-eyed Sweet Williams also attracted great attention, the flowers being excellent alike in size, form, and colour. Near them, about half an acre each of three varieties of another sweet-scented flower—namely, purple, white, and yellow Sweet Sultans, were doubly attractive, the handsome flowers disseminating a pleasing perfume. Eschscholtzias are also cultivated extensively, the most attractive variety being, perhaps, Rose Cardinal; but Mandarin is bright and showy, as are the well-known orange-yellow sorts crocea and californica. To allude, however briefly, to every flower that added to the charms of St. Osyth at the time of our visit would be manifestly impossible. In addition to those already mentioned, brilliant masses of such popular annuals as Linums, Marigolds, Rhodanthes, Candytufts, Phlox Drummondii, Sweet Peas, Clarkias, Convolvulus, Mignonette, Poppies, Leptosiphons, Lobelias, and numerous others, were in splendid bloom, and increased the effect of a display of unequalled beauty.

These notes would not, however, be complete without reference to the vegetable crops, which form an important feature of these seed farms. The three famous Peas, Telephone, Stratagem, and Pride of the Market, were well represented; but their merits are now well known and need no recapitulation. Several acres of Fern-leaved Parsley bore forcible testimony to the popularity of this selection, while another vegetable that meets with equal favour—namely, that excellent Cabbage, Heartwell Early Marrow, was largely grown. Other vegetable crops were Incomparable Crimson Celery, Mammoth Beef-heart Cabbage, Jersey Wakefield Cabbage, and Champion Broccoli, and all were in excellent condition.

The task of maintaining in cleanliness and order an extent of ground covered with such an immense variety of occupants is not by any means a light one; and when to this is added the task of selecting and improving the various crops, and hunting out and destroying intruders of doubtful hue, it will be conceded that every credit is due to the skilful and experienced manager of the farms for the more than admirable way in which his duties are performed—a credit which extends to the firm he represents for the energetic and able management of their Essex seed farms.—W. P. W.

## THE INTERNATIONAL FORESTRY EXHIBITION.

### SECOND NOTICE.

THE question that was being asked by many people before this, the latest of special exhibitions, had been opened was, Will it pay? Could a vast building and a large uncovered space be filled with articles connected with forestry in so novel and attractive a manner as to draw sufficiently large crowds to make the undertaking a success financially? Judging by appearances the Executive have succeeded in doing both. On the occasion of our last visit to the Exhibition it was uncomfortably crowded. True, the advertising element was of the most pronounced type, sometimes, if not to the exclusion of those exhibits most akin to forestry, at least to the placing them in the background. But as it seems the only way of drawing the shilling from the purse of the ordinary sightseer to provide him with things novel and pleasing to the eye and ear, why those who have the more scientific part of the question at heart must put up with this state of matters. In the out-of-door exhibits there is not much to complain of in this way, but in the main Exhibition building practical forestry seems to have been allocated to the corners left after more pretentious though less useful exhibits had been provided for. Unfortunately the catalogue is so arranged to be of little use in enabling visitors to find special collections. We have to thank Mr. McLaren, the courteous Secretary of the Scottish Arboricultural Society, for kindly helping us to much interesting matter which would have been otherwise overlooked.

The shrubs and Coniferae bedded out in the open ground fill some six or seven acres, in conjunction with the sheds of machinery devoted to sawmilling, planing, &c., modes of fencing, and several systems of greenhouse glazing and other matters of general interest. The Lawson Seed and Nursery Co., Edinburgh and London, have been allocated the space on each side of the entrance to this outside space, and have arranged their produce in a very satisfactory manner. Large plants of Coniferae with standard Sweet Bays are placed in the background, while in the main body of the group are several plants of the variegated Retinospora plumosa, variegated Lawson's Cypress and others. Some very pretty Japanese Maples are in the foreground. Next to these on the left-hand side Messrs. Little & Ballantyne, foresters to the Commissioners of Woods and Forests, have the most tastefully executed arrangements on the ground. The specimens are all good of their kind, and are planted wide enough apart to show the distinctive feature of each, while the ground between them has been sown with grass, which has already formed a thick green sward. Elæagnus japonica variegata was very fine among a number of other good things, Podocarpus Koriama being also notable.

Away to the right Messrs. Methven & Sons, Edinburgh, have directed their energies more to showing the adaptability of shrubs to hardy bedding effects than to exhaustion. Collections of ornamental species, although from a firm with such resources as are possessed by the above, these are not wanting. The bedding arrangements were effected with dwarf Ivies, Retinosporas, Lawson's Cypress, and Japan Spindle Trees in variety. A summer-house made on the Balmoral estate from native Scotch Fir is placed in the centre of the Messrs.

Methven's group. The beauty of this common wood for cabinet work is shown in a remarkable manner in the wainscoting of this building as well as in some articles of furniture exhibited in the building.

Behind this is a small collection of rare Coniferae, &c., from Messrs. Jas. Veitch & Sons, Chelsea. The central plant is a grand example of the Umbrella Pine (*Sciadopitys verticillata*). By far the best example of *Abies polita* shown is also here, as also fine specimens of *Abies Hookeriana*, *A. Veitchii*, *A. Tsuga Sieboldiana*, *A. brachyphylla*, *Quercus cuspidata*, the fruit of which is used as a food, *Olea ilicifolia*, *Arthrotaxus selaginoides*, &c. In a neighbouring group Messrs. Ben. Reid & Co., Aberdeen, had the following very fine; indeed for robust health these northern-grown plants were superior to any shown—*Arthrotaxus Doniana*, *Abies acicularis*, *A. Alcockiana*, *A. Pattoni*, *A. Engelmanni*, and *A. Alberti*. In Messrs. Ireland & Thomson's group were the largest variety of the Pine tribe in the Exhibition, numbering over 100 sorts in all. Some of these were more curious than beautiful, as was the case with *Abies excelsa viminalis erecta*; but others, such as the drooping *Wellingtonia*, *Picea compacta pyramidalis*, *A. mucronata*, *A. inverta pendula*, and *Buxus japonica*, useful for planting on lawns. This, and a neighbouring collection were the only ones which showed good plants of the Scots Fir. A variegated form of this was also shown, as well as a yellow-leaved Spruce, &c.

Messrs. James Dickson & Sons, Newton Nurseries, Chester, also showed a large and fine collection, the Coniferae, &c., being generally represented by the commoner kinds. A very varied collection of Horse Chestnuts were remarkable, and some fine varieties of Japanese Maples with wonderful names were noted. The prettiest of these were *Toyamanishiki*, *Taniyuki Benioshadara*, *Okima Taimennishiki*, *Iwamotonishiki*, and *Sangotsu*. A most instructive collection of over forty kinds of Hollies were grouped by Messrs. Cunningham & Fraser, Edinburgh. The plants were in the most robust health, and the leading kinds were all represented, as well as some not very commonly met with.

Several examples of hothouses and modes of ventilating and glazing are exhibited. Messrs. Drummond & Lindsay, Edinburgh, exhibit an indestructible system of glazing which we had not previously seen. Mr. Helliwell, Brighouse, Yorkshire, has an example of his patent glazing, and the Pennycok Patent Glazing and Engineering Company showed their new sashbar of zinc and lead, with combined system of glazing with putty. This is a remarkably simple, and apparently an efficient system of glazing, worth the attention of those wishful of keeping down garden expenses. The conservatory erected by Messrs. Mackenzie & Moncur had been sold. Instead of being painted the woodwork in this building has been varnished, the general effect being very good indeed. Their patent system of ventilation is introduced in this house. Messrs. Robertson & Sons, Messrs. Meikle and Philp, and Mr. David Lowe have each examples of modern conservatories, besides many accessories required for these, the "Finsbury" boiler, shown by Mr. Robertson, being an obvious improved form of the "Loughborough" type, so popular among amateurs. In the Windsor Park exhibits of the Royal Woods and Forests is shown a fence of cleft oak pales, deer and rabbit-proof, which is of great durability, and most suitable for enclosing garden ground where the expense of a wall is objected to. Close by are examples of trees which have been grown in the midst of a rabbit warren, the protection afforded by Mr. N. Ahlbottn's tree-protective composition having been sufficient to keep these destructive creatures away.

The interesting collection of cones, seeds, &c., staged in the exhibition building we must reserve for another notice.

## UTRICULARIA VULGARIS.

THERE is an account of the *Utricularia vulgaris*, accompanied by a figure, in the *Field* of June 21st, at page 879, which is deserving of some notice. Allusion is made by the writer to the vesicles or bladders at the outset of his observations, in a sentence wherein he confidently remarks that he at first supposed them to be "fruit vessels" provided with "mouths," by which little fish were held fast (description being very suggestive of a jam-pot-bearing plant).

Proceeding to quote from Bentham's "Handbook of British Flowering Plants" with respect to its distribution, and from Mr. Darwin's observations with regard to some of its characteristics, the floating root-like branches are described as extending to a length of from half an inch to one inch; but this is evidently a *lapsus calami*, for detached branches from fully developed plants are generally 6 to 12 inches long, and we have seen specimens measuring nearly 18 inches in length within a few days of the date mentioned in the first line of the communication in question.

As regards the numerous bladders which, in some stage of their growth, contain both air and fluid, thereby naturally contributing more or less to the buoyancy of the branches, it is asserted that "these bladders, in reality, exercise no such functions," and that in the case of fish being captured thereby, "it is solely due to their restless inquisitiveness." Some of Mr. Darwin's experiments are related in connection with *U. vulgaris*, and it is not easy to reconcile the manifest errors and discrepancies until we discover that the experiments in question were chiefly confined to the rarer specimens of *U. neglecta*.

The paper is a remarkable one. As an instance, the writer mentions having "watched a large worm which had been caught in a small bladder after a violent and protracted struggle swim off minus a small portion of his tail!" In referring to the plant as "one of the numberless and unlooked-for enemies which assail the denizens of our rivers in all stages of their existence," the author, in a paragraph immediately preceding the one recording the catastrophe that befell the large male worm has considerably prepared his readers for the surprising announcement affecting the capacity of its vesicles, "that animals enter the bladders." Related as a personal discovery, all this is amusing enough, but when it is subsequently stated that "the *Utricularia* is seldom met with in rivers," we begin to realise that the river side may be approached by animals with comparative safety, although it is not easy to understand the consistency of the assertion that



"it is one of the enemies which assail the denizens of our rivers in all stages of their existence."

It is very interesting to know that microscopic fish are liable to be destroyed if hatched in an ordinary glass prune jar wherein has been placed bladder-bearing specimens of the *Utricularia*; but are not such conditions factitious or fortuitous? This is answered by the correspondent of the *Field* towards the end of his communication, where he states his intention to introduce the *Utricularia* "in a piece of shallow water where he has lately found a mass of roach spawn." The fish, even in their very small stages of growth, do not appear to be victims to the vesicles to any appreciable extent. Nor need it be apprehended that when introduced into rivers where the young fish abound the presence of the plant will prove fatal to the fish, for when and where have specimens of *U. vulgaris* been discovered in flowing water having in their vesicles or bladders fish in any stages of their existence?—SPES.

#### GERANIUM TRAVERSII.

IN reading "M. S.'s" interesting notes on "Cranesbills," I noticed that he had omitted to mention *Geranium Traversii*, a hardy species recently introduced from New Zealand. It is of prostrate habit, with greyish silvery leaves. The flowers are about the size of those of *G. cinereum*, perhaps a little larger, light rose in colour, prettily pencilled with bright purple, and are produced freely along the prostrate, leafy, much-branched stems. There is also another hardy Cranesbill which I venture to think deserves notice—viz., *G. tuberosum*, which should be grown in warm sandy loam. The flowers are large, but not so circular as most of the other hardy species, bright pink. Stems erect, 12 to 15 inches high.—P. R.

#### ORCHID NOTES.

CARE IN THE TREATMENT OF ORCHIDS.—Some years ago the culture of Orchids was considered one of the mysteries of horticulture, and for a considerable period it appeared to be the object of those who had been the most successful with these plants to represent their practice in as complicated a manner as possible. In later years, however, there has been a great change, and people gradually discovered that Orchids were not so remarkably fastidious but that they would thrive under ordinary intelligent treatment, and that really they did not need so much care and skill as Heaths and other hardwooded plants which had been grown to perfection. Unfortunately this has led to another extreme, and the idea is getting abroad that Orchids will succeed with very little attention; in fact, that they are almost too simple in their requirements to necessitate the supervision of an experienced grower, and may be safely left to the care of the under gardener, or even of the apprentice. This is a deplorable mistake, and has already produced bad results in several large collections. A few days since I visited a garden where a year or two ago the Orchids were a credit to the establishment, owing to their then receiving the personal supervision of the head gardener. Now they are relegated to the care of an assistant scarcely out of his teens, and the result is unsatisfactory in the extreme; indeed, unless a change is soon effected, the collection will be practically ruined. It is not the observance of an intricate system of culture that insures success, but attention to the simple details, such as the supply of moisture, the temperature, and general cleanliness. The keen eye of an experienced overseer will quickly detect the slightest indication of bad health or the appearance of insects, and these first signs must receive prompt attention to prevent any serious injury. All who have been accustomed to growing Heaths know how quickly an experienced eye can detect indications of sickness, when anyone unfamiliar with those plants would think they were in perfect health. It is similar with Orchids, but as a rule the signs of illness are more readily discerned than in hardwooded plants. In any case it is equally unpleasant to a true plant-lover to see the objects under his care unhealthy, especially when these results can be so readily avoided. This note is intended as a hint to any young gardener who is inclined to become somewhat careless in regard to his Orchids, for if he desires to keep his plants in satisfactory condition he must watch them closely and see that there is no neglect in their treatment, or he may soon have reason to regret his want of thoughtfulness.—J. T.

ONCIDIUM KRAMERI.—This very strangely formed yet beautiful Orchid is rarely seen in first-rate condition, and it is seldom that so handsome a flower has come under our notice as one which a Lancashire correspondent sends us this week. It is really butterfly-like in form, with fine "antennæ" and beautifully marked "wings," and poised as it is upon a slender stem, it has a most natural appearance. The bloom sent was finely coloured, the shades of yellow and brown being clear and rich in the extreme, and the flower generally of unusual size.

STANHOPEA EBURNEA.—The same correspondent sends a flower of this fine species, which is less well known in gardens than the large-flowered and strongly marked *S. tigrina* and one or two others. As the name implies, the flower is ivory white, and in substance also it has some resemblance to ivory, the lip being exactly like a piece of that material carefully carved and highly polished. The most striking and pleasing character is, however, its powerful fragrance, which very strongly resembles the odour of Hyacinths. It is not a new introduction, as it has been in cultivation since 1828, when it was first imported to this country from Brazil, and is still included in several of the nurserymen's lists.

#### BEGONIAS AT FOREST HILL.

RAPID strides have of late years been made in the improvement of the Tuberous-rooted Begonias. No one would have dreamed a few years ago that this deservedly popular class of free-flowering plants would have attained to such a high standard of perfection as they now have. Certainly no class of plants can lay greater claim to popular recognition than these. Useful alike to the professional and amateur gardener, these popular plants include nearly every shade of colour, and thus are emi-



Fig. 18.—Begonia Distinction.

nently suited for the exhibition tent or the decoration of the greenhouse, conservatory, window, and dwelling-rooms. In consequence of this a great demand is made for the finest varieties. No one has done more towards effecting a great improvement in this race of Begonias than Messrs. Laing & Co. of Stanstead Nurseries, Forest Hill, S.E. This firm make their production and improvement a speciality, as they are grown by hundreds of thousands to supply the demand for them. Everyone interested in them ought by all means to pay a visit to Messrs. Laing and Co.'s Stanstead Nursery, where they will see one of the richest sights they ever beheld. A large and spacious show house is devoted to a collection of some thousands of the finest types grown in pots and in baskets. It is indeed a splendid sight to behold such a vast collection representing every shade of colour, which, mingled together, present a gorgeous mass of bloom, exciting the admiration of visitors.

It is astonishing to what perfection Messrs. Laing & Co. have brought these plants as regards size of flower, habit, and variation of colour, and as proof of this the above firm have received from time to time a number of first-class certificates. Among the most striking varieties in flower in the Begonia house at the time of my visit were Canary Bird, a pretty dwarf-growing double of a canary colour; General Gordon, a fine carmine double; T. Hewitt, large crimson double; Dr. Duke, an immense brilliant scarlet; and Prince of Wales, a splendid large and deep scarlet double. The single varieties were still more striking, especially noticeable being Her Majesty, a pleasing novelty with delicate rose-pink flowers; Mrs. Weekes, white beautifully margined with lines of red; Distinction, a charming variety, lovely crimson with a white centre; Stanstead Surprise, a superb crimson; Torey Laing, another fine variety, yellow suffused with crimson; Bridesmaid, an exquisite white, the finest of its class; Golden Queen, a fine large chrome yellow; Mr. A. Forbes, a striking novelty, carrying fine vivid crimson flowers; Lady Chesterfield, one of the large-flowered section, with immense well-shaped flowers of a rich carmine



crimson colour; and the Hon. Mrs. Gosehen, a fine, erect, round, and deep rose. These are only a small quota of the many hundreds of grand varieties grown there.

Messrs. Laing devote great attention to producing a race of pendant habit suitable for hanging baskets. They have succeeded in selecting several suitable varieties which are very effective for the purpose. These are tastefully arranged in wire baskets, which have the outsides covered with growing Lycopodium. A few Palms of light graceful foliage are

Like most other plants the Begonia has its special diseases, among which may be mentioned a species of fungus, which often proves destructive to it. To counteract this evil Messrs. Laing & Co.'s Begonia grower, Mr. Pope, uses a mixture prepared by himself, and which is named by him "anti-fungoid." It is said to answer the purpose very effectually.

In concluding these brief notes I ought not to omit mentioning that in addition to Begonias being a speciality with this firm, Caladiums receive much attention, there having been many splendid new varieties



Fig. 19.—A GROUP OF BEGONIAS (from a photograph).

arranged with the Begonias in the baskets, this adding considerably to the effect. The principal varieties used for this purpose are Magenta Queen and Purple Emperor—single varieties. The double varieties, however, are very suitable for this mode of culture on account of their drooping habit of growth. Not only are Begonias grown in pots, but also in almost countless numbers in prepared beds outside. These make a considerable display during August and September, and thus serve as an illustration of their growing value for bedding-out. We may safely predict that this showy race of Begonias will equal the Zonal Pelargonium for summer bedding ere long.

raised here, in addition to their Dracænas, Crotons, and other plants. Orchids are now claiming a large share of their attention, and it is proposed to build more houses for their accommodation. Time would not permit us to inspect the vineyard and other nurseries, hence my notes are confined to the Begonias—the principal object of my visit. All those who have not yet made a call and seen this wonderful collection of Begonias should do so without delay.—T. W. S.

[The engraving (fig. 19) represents a portion of the remarkable group of Begonias shown by Messrs. Laing & Co. at the last Crystal Palace Show, and which was by general consent the most handsome group of Begonias



ever exhibited in London. All the best of the innumerable superb varieties raised by the firm were included, and amongst them the new type of edged varieties were particularly noteworthy, as it is quite a distinct break from the ordinary self-coloured forms. The flower shown in fig. 18 is one of the best of these, and is named *Distinction*, but our artist has not drawn the margin quite clearly enough, nor is the flower quite the full size. The clear white ground affords a beautiful contrast with the delicate rose-tinted margin, and the general fine proportion of the flower is another recommendation.]

### THE HERBACEOUS BORDER.

FROM the middle of June to the middle of July the weather was very dry, and many plants suffered in consequence, but the following have been fine.

*Echinops*.—These curious plants, strong-growing, and 4 to 6 feet in height, with Thistle-like foliage and abundance of large globular heads of bloom. *E. Ritro* has deep purplish-blue flowers; and *E. spinosus*, white flowers. The tall growth renders them available for back rows, where they have a singularly fine effect.

*Achillea Ptarmica fl.-pl.*—One of the most useful of flowers for cutting from the middle of July onwards, and one of the most effective of border plants. Its numerous erect stems of 2½ to 3 feet in height terminate with large heads of pure white double flowers, are very effective, and last a long time. *A. serrata fl.-pl.* is very similar to the preceding, the flowers being larger, less double, and of a pure white. They do well in any light soil, and are readily increased by division in early spring.

*Lathyrus grandiflorus*.—This is the finest of the Everlasting Peas. *Lathyrus latifolius*, and its white variety *alba*, are very fine for cutting, and should be in every garden where flowers for cutting are in request.

*Potentilla formosa*.—This blooms splendidly and is very showy, its bright cherry-red flowers being produced in the greatest profusion, the plant being spreading and attaining a height of 2 feet.

*Lychnis chalcidonica fl.-pl.*—This produces large heads of bright scarlet double flowers, which are fine for cutting, the plant attaining a height of 3 feet. It is one of the finest and showiest of border plants. It is increased by division in spring when beginning to grow, and likes a generous soil.

*Coreopsis lanecolata*.—The large bright golden-yellow flower heads, with a brownish disc, are about the middle of July produced in the greatest profusion and over a considerable time. It is very showy and extremely useful for cutting. It attains to a height of 3 to 4 feet, doing well in most any soil, and is increased by division in spring or from seed. *C. tenuifolia* is of smaller growth, having finely divided foliage, the flowers being bright yellow and very freely produced on stems about 2 feet high. It is a very desirable plant.

*Gentiana gelida*.—This grows freely, having stems about 12 inches high, terminated with six or more bright blue flowers. It likes a cool situation, but not shaded, and will thrive in an ordinary border. *S. Andrewsii* grows to a height of 2 feet, producing numerous flowers in terminal clusters, which never pass the bud state, and are of a bright purplish blue. It likes a cool but not shaded position, and good loamy soil.

*Campanulas*.—*C. Hendersonii* commenced flowering early in July, and lasts longer than any other *Campanula*, flowering through the summer. It grows about 18 inches, and has a numerous array of flowers of a mauve or purplish blue colour, the plant forming a neat, compact, pyramidal outline, and is one of the showiest. *C. grandis* and *C. grandis alba*, though old-fashioned, are very fine, forming a bush about 3 feet high of numerous spikes of bloom thickly set with blue and white (respectively) salver-shaped flowers. *C. grandiflora*, or the one I have under that name, is the finest of the genus. The stems rise about 18 to 24 inches, are slender, and bear numerous large salver-shaped flowers, somewhat drooping, of a bright purple-blue, and is distinct in habit and bloom from all other *Campanulas*. There is a white variety, *C. grandiflora alba*, which is also fine. It flowers at the same time or at the middle of July. *C. nitida fl.-pl.* grows about 1 foot high, and has numerous axillary flowers, very double, and bright blue. *C. macrantha*, from its erect pyramidal habit and numerous stems rising to a height of about 4 feet, producing numbers of large purplish blue flowers, has a fine effect, especially for back rows in borders. *C. Van Houttei*, with its erect stems bearing dark blue flowers, is very showy, attaining a height of 2 feet. *C. Van Houttei pallida* has pale lavender flowers, and is very singular-looking. *C. persicifolia alba plena* has long spikes 3 feet high, thickly set with pure white double flowers, and is one of the best. *C. pyramidalis* and var. *alba* are fine in back rows. The stems, crowded with large salver-shaped flowers, rise to a height of 6 feet or more in good soil, and are very effective. These are best treated as biennials; indeed, most of the *Campanulas* are readily raised from seed, and are even finer than those from cuttings or division. *C. pulla* is doing well, reaching a height of 6 inches, much higher than usual, and may be due to the rich soil, that of an ordinary border of light loam over gravel. Its drooping deep purple bells have a charming appearance.

*Helenium pumilum*.—Unlike others of the genus, this does not exceed 2 feet in height, and produces numerous bright yellow flowers some 2 inches across, and continues for a long time in bloom, the flowers being useful for cutting. It is readily increased by divisions or offsets in spring.

*Bupthalmum salicifolium*.—This forms a neat symmetrical bush about 3 feet high, and bears numerous golden-yellow flowers, which are very effective. It does well in ordinary soil, and is useful for cutting.

*Alstræmerias*.—*A. aurea* has bloomed and keeps on splendidly, its bright orange flowers rendering it very showy. This is perhaps the hardiest. *A. peruviana* has not done so well; although it has a warm border, yet it has given fair heads of bloom of rosy-crimson, and splashed with other shades of colour. *A. pulchella* is white striped with red; *A. psittacina* is crimson, splashed green and brown; and *A. tricolor*, white, cream, and yellow. All are doing fairly, but they are on a south border in light soil over gravel. *A. chilensis* is dwarfer than the preceding, and so are *A. peregrina* and its var. *alba*; the latter is very dwarf. All are useful for cutting, the flowers being very durable. They increase rapidly, and although a warm situation is advisable they give the best results from a rather strong loam, and if in light soil must have generous treatment during growth.

*Gaillardia grandiflora*.—This commences flowering in June, and continues up to autumn. The flowers are pure yellow, 3 inches across, and are very different from *G. picta*, which has crimson, yellow, and orange flowers, much finer than the species from a decorative point of view, but the species is a more interesting perennial, and flowers over a lengthened period.

*Gillenia trifoliata*.—This bloomed well in the dry weather, its panicles of white flowers being very fine. It grows to a height of about 3 feet, and does well in light soil, and is a fine border plant and useful for cutting.

*Galega officinalis alba*.—This gave its profusion of white Pea-shaped flowers, growing fully 5 feet high, and is fine for cutting. It is useful for shrubby borders or back rows.

*Papaver cambricum*.—Unquestionably this is far ahead of all the yellow Poppies, and does grandly in any light soil. We have a plant that gives white flowers as well as deep yellow. I attribute this change to the bees; and whilst noting this circumstance may mention that *P. nudicaule* has changed to its white form, or *P. nudicaule album*. These have done well, and besides being highly decorative are not to be despised for cutting. Other Papavers have done badly except *P. orientale* which I bloomed well. *P. nepalense* and *P. pilosum* have not flowered.

*Anchusa italica*.—This Borage-like plant grows strongly, attaining to a height of 6 feet, its sky-blue flowers being very acceptable, and it continues through the summer, being readily increased by seed.

*Delphinium cashmirianum*.—This flowered freely. Its deep blue or purple flowers, quite 2 inches across, being borne in a lax corymb about 2 feet high, give, in connection with the dark green palmate foliage forming a tuft, a very pleasing effect. *D. nudicaule* did not exceed 12 inches in height, and the flowers were numerous, of an orange-red colour. These are readily increased from seed.

*Gypsophila paniculata*.—In elegance this is one of the finest border plants. It forms a symmetrical bush a yard high, and is covered with white flowers or minute buds resembling *Agrostis nebulosa*; in fact, it has the elegance of the finest grasses studded with minute white stars. For cutting it is the most elegant of all plants, imparting a lightness which is charmingly effective. It will grow in any light soil, and is readily raised from seed.—G. A.

### SHEFFIELD BOTANICAL AND HORTICULTURAL SOCIETY.—JULY 24TH, 25TH, AND 26TH.

THE success of this the first Exhibition of plants, flowers, and fruits which has been held in the Society's beautiful grounds for a considerable number of years, was unfortunately marred by the very unfavourable weather, as a heavy fall of rain commenced almost immediately the Show was opened, and continued with little intermission during the greater part of the time until its close. It was intended to have been a two-days show only, but at the close of the second day, as the Committee had up to then been so unlucky in the weather and consequently the takings at the gates, the exhibitors unanimously consented that it should remain open for a third day. The ill luck of the Committee, however, still continued to follow them, as rain fell heavily nearly the whole of the third day, so that the takings at the gates for that day would not meet the small necessary expenses incurred in keeping the Show open. The Committee, however, deserve every praise for the spirited way in which they had unitedly worked to endeavour to bring together, in this the best of all places for doing so, a show worthy of such a centre of horticulture as Sheffield, and it is to be hoped that the unavoidable financial failure they have this time experienced will not deter them from endeavouring to achieve success next year, and to profit by the experience they have this year gained. The Show, considered as such, was eminently satisfactory as a first attempt; and here I would like to suggest for the consideration of the Committee that at an early date they invite representatives from the various other horticultural societies in the town and neighbourhood to confer with them as to the means to be adopted for a grand united effort to be made in 1885, which should have the effect of bringing together a show such as those held annually in Manchester and in Liverpool, and of making the Botanical Gardens, as they should be, the centre of horticulture for Sheffield and district.

A comprehensive schedule had been prepared, and prizes amounting to over £250 offered in sums ranging from 2s. 6d. to £6.

*Groups Arranged for Effect*.—Two classes were devoted to groups of plants, one being for nurserymen and the other for amateurs or gentlemen's gardeners, the size of the group, conditions, and prizes offered being the same in each class—viz., 100 square feet of space, first prize £6, second prize £4. In the nurserymen's class the first prize was taken by Mr. Hiram Shaw, Richmond. Second, Messrs. Fisher, Son & Sibray. These were two very fine groups, the first-prize one being most tastefully and effectively arranged. The group from the Handsworth Nurseries contained the best and most valuable plants, but was much too solid and heavy in arrangement. The first prize in the gardeners' class was taken by Mr. W. Hannah, gardener to Thomas Wilson, Esq., Oakholme, with a beautiful group, in which the quality of the plants and the arrangement were equally meritorious. The foliage plants consisted



of very fine Crotons, Dracænas, and Ferns, conspicuous amongst which were fine specimens of *Dracæna amabilis* and *Goldiana*. A marked difference between this and the second-prize group was in the number of flowering plants it contained, which in Mr. Hannah's group were plentiful and good. The second-prize group was arranged by Mr. W. Winter, gardener to J. Tasker, Esq., and was a very good and tastefully arranged one, which called forth much praise.

**Stove and Greenhouse Plants.**—Of these there was a fine display in all the several classes or sections. In that devoted to nurserymen Messrs. Fisher, Son & Sibray were the largest and most successful exhibitors; Mr. Hannah, the like position amongst gentlemen's gardeners. In one class, however, for six stove or greenhouse plants, restricted to growers within seven miles of Sheffield, the first prize was taken by Mr. J. Walker, gardener to B. P. Broomhead, Esq., Broomhall Field, with a very evenly matched collection, consisting of *Crotons variegatus*, majesticus, and *Johannis*, *Cycas revoluta*, *Impatiens Sultani* fine, and *Asparagus plumosus nanus*, a grand plant. Mr. Hannah was placed second with a collection scarcely inferior. For six plants, open to all, Mr. Hannah was a long way first with very fine plants of *Phyllotænum Lindenii*, *Cordylina indivisa*, *Crotons majesticus* and *variegatus*, *Dracæna Youngii*, and *Anthurium Warocqueanum*.

**Crotons.**—In a class for six Crotons, distinct, Mr. Hannah was placed first with large, clean, and grandly coloured specimens of *C. Mortii*, *Queen Victoria*, *variegatus*, *angustifolius*, *Wiesmanii*, and majesticus.

**Table Plants.**—For these good prizes were offered in each section, consequently there was a large number of exhibits. In the nurserymen's class, Messrs. Fisher, Son & Sibray were again the most successful. In a class for six Palms for table decoration they exhibited a beautiful collection, consisting of *Areca lutescens*, *Dæmonorops Lewisianus*, *Calamus ciliaris*, *Geonoma gracilis*, *Kentia Canterburyana*, and *Cocos Weddelliana*. In the amateurs' and gentlemen's gardeners' class, open, Mr. Sheridan, gardener to Mrs. Harmor, Ranfall, was first with admirable examples.

**Orchids.**—Of these plants there was not a large display, but some good specimens were shown. In the nurserymen's class for six exotic Orchids in bloom, Messrs. Fisher, Son & Sibray were first with fine specimens of *Dendrobium thyrsiflorum*, twelve spikes; *D. Bensoniæ*, a large basketful; *Cypripedium barbatum nigrum*, *Vanda tricolor*, and *Cattleya Leopoldi*. Mr. Hannah was first in the gardeners' class with good plants of *Masdevallia Veitchii*, *Odontoglossum Alexandræ*, and *Disa grandiflora*, a fine piece. For a single specimen, Mr. Walker was placed first with *Vanda tricolor*; Mr. Hannah second with *Cattleya gigas*. For three plants, limited to Sheffield growers, Mr. Walker was first with *Dendrobium Dearii*, *D. Bensoniæ*, and *Miltonia spectabilis*.

**Ferns, Exotic and British.**—Of these a large number were exhibited in both classes. For thirty-six varieties of British Ferns, distinct, some beautiful collections were staged, Mr. Jno. Eadon taking first prize and Mr. H. Davy second. For six varieties Mr. Eadon was again first, Mr. J. W. Newsham second. Messrs. Fisher, Son & Sibray were first in the trade class for six exotics with grand plants of *Todeas grandis* and *pellucida*; Mr. Hannah being first in the gardeners' class with the six finest specimens in the Show, amongst which were grand examples of *Adiantum farleyense* and *gracillimum* and of *Gleichenia Mendelli*.

**Coleuses** were well shown by Messrs. Sheridan and Simmonds. The first prize six, from Mr. Sheridan, were *Idia*, *Pompadour*, *Wizard of Woking*, *G. Simpson*, *Mrs. G. Simpson*, and *Sunrise*.

**Selaginellas** were remarkably good from Mr. Speight, gardener to Mrs. Fawcett, Clarke House, his pans of *apoda* and *denticulata elegans* being almost unsurpassable.

**Begonias.**—These were finely shown as plants in pots by Messrs. Fisher, Son & Sibray, and as cut blooms by Messrs. Cannell & Sons, Swanley, Kent, whose blooms of both double and single varieties astonished all who saw them, both for their wondrous size and brilliant colours. The same exhibitors also set up a very fine lot of *Zonal Pelargoniums*, cut blooms, in a most attractive style peculiarly their own.

**Roses.**—Prizes amounting to over sixty guineas had been offered for these, and the good display occupied a large space. Messrs. Fisher, Son & Sibray exhibited in a class for twelve Roses in pots (Perpetuals) and were first, in addition to which they had about 100 plants in pots not for competition—dwarf vigorous healthy plants, each carrying about half a dozen expanded blooms. In cut blooms the first prize for thirty-six varieties, single trusses, was carried off by Messrs. Paul & Son, Cheshunt, with a very fine lot, the second prize going to Mr. Proctor, nurseryman, Chesterfield. In the class for twenty-four the same exhibitors were again the prizewinners, but with a change of position, Mr. Proctor being first, Messrs. Paul second. The contest in this class was very close, and some excellent blooms were staged. In classes for eighteen Hybrid Perpetuals, six Teas or Noisettes and six new Roses sent out since 1881, Messrs. Paul were in each case placed first. The six new Roses staged by them were *Pride of Reigate*, *Queen of Queens*, *Duchess of Connaught*, *Merveille de Lyon*, *Pride of Waltham*, and *Ulrich Brunner*.

In the class for amateurs the first prize for thirty-six varieties (a silver cup given by the Mayor of Sheffield) was carried off by the Rev. J. W. Pemberton, Romford, Essex, with fine blooms; Mr. Thomas B. Hall, Rock Ferry, Birkenhead, being placed second. The stand of the last-named contained the premier bloom in the Show, a grand *A. K. Williams*, which was stated by the Judges to be the best bloom they had seen this season. In the three next classes—those for twenty-four, eighteen, and twelve blooms—Mr. Hall was an easy first, he being the only competitor. In the class limited to growers within seven miles of Sheffield, Duncan Gilmour, jun., Esq. (gardener, Mr. Holland), carried off the leading prizes with fine blooms. The first prize for a single bouquet of Roses in this class was won by Mr. T. B. Hague, a similar prize for two Rose bouquets going to D. Gilmour, Esq.

**Cut Flowers.**—The first prize for a collection of twelve stove or greenhouse varieties was won by Mr. Hannah, second Mr. Sheridan. Mr. Hannah was also first with a hand bouquet. For a bride's bouquet and a ball bouquet Mr. T. Earnshaw was first in each case. In two classes for six buttonhole bouquets, Mr. Walker and Mr. J. Simmonds gardener to G. Fisher, Esq., Endcliffe Grove, each won a first place. Carnations and Picotees were shown in fine condition by Messrs. Fisher, Son & Sibray, and Mr. B. Simonite.

**FRUIT.**—For pot Vines Mr. Sheridan was a good first with both black and

white Grapes, his Vines being well grown and carrying each eight or nine good bunches. For two bunches of black Grapes Mr. Simmonds was first with very good examples of Mill Hill Hamburg, the bunches being about 1½ lb. each, with very large and well-coloured berries. Mr. G. H. Shaw, Howden, Yorkshire, was second with much larger bunches of Black Hamburg not well coloured. White Grapes.—First Mr. C. F. Shorter, second Mr. Sheridan. Muscats.—First G. H. Shaw, second J. Simmonds. The first prize for one Pine Apple was awarded to Mr. J. Sutton, gardener to — Garside, Esq., Worksop Manor, for a very fine Providence. Mr. Simmonds gained a first prize for one Melon with a large fruit of Blenheim Orange, also a first for Cucumbers with two very fine, smooth, straight examples of Carter's Model. For six Peaches Mr. Shaw was first with Grosse Mignonne, Mr. J. Sutton second with Dr. Hogg, scarcely inferior to those placed first. Six Nectarines.—First J. Walker, second J. Sutton. For Tomatoes, four distinct kinds, three fruits of each, first G. H. Shaw, Esq., with very fine specimens of Hathaway's Excelsior, Sutton's Perfection, Sutton's Earliest of All, and Shaw's Perfection, a very large and smooth variety, colour a very dark crimson—a very fine show variety.

**Miscellaneous.**—Large groups of plants, not for competition, were contributed by Mr. B. S. Williams, Holloway, London, and Messrs. Fisher, Son and Sibray, Handsworth, Sheffield. The groups shown by the first-named exhibitor filled a space of about 30 feet by 10 feet and contained a large number of rare and valuable plants, including a good number of Orchids in bloom, conspicuous amongst which were *Cypripedium superbiens*, several plants, one with seven flowers, *Cattleyas Dowiana* and *Mendelli*, *Dendrobium Bensoniæ*, *Lælia purpurata* several plants, *Odontoglossum Alexandræ*, *Warnerii*, and others. In Messrs. Fisher, Son & Sibray's group, which occupied slightly more space than that from Mr. Williams, were some fine Crotons, Dracænas, Palms, and Ferns, a beautiful case of *Bertolonias* and *Sonerilas*, two fine densely flowered plants of *Dipladenia boliviensis*, and a very large *Stephanotis* almost solid with bloom and trained in a novel style—viz., a balloon-shaped trellis of the ordinary type about 4 feet high and 4 feet through, from the centre of which sprang supports carrying a second umbrella-shaped trellis some 1 foot 6 inches above the balloon, the whole well covered with good foliage and abundant bloom. A group of four dozen pots of named varieties Pansies, from Mr. Herbert Simpson, Crookes, Sheffield, proved very attractive. Messrs. Fisher, Son & Sibray took first honours in a class for three new plants brought into commerce since 1881, with *Selaginella grandis*, *Leea amabilis*, and *Eucharis Sanderii*.

Especial praise is due to Mr. Ewing, the esteemed Curator of the Gardens, for the effective manner in which his part of the work has been performed, for the great courtesy extended by him to all concerned, and for the beautiful condition of the grounds, especially the carpet bedding along the broad terrace walk, which is very effective and was greatly admired by all.—W. K. W.

## NEWSTEAD ABBEY.

AMIDST the grandeur and the stillness of the forest stands the world-renowned Abbey of Newstead, a grand old pile, around which cling so many historic recollections. It is easily reached by Midland route, and is distant from Nottingham about eleven miles. The visitor ere leaving the railway station must make application for a pass to enable him to view the Abbey and grounds. These passes are freely granted to any applying for them, and only those in possession of such obtain admission, and, leaving the railway, the visitor commences his pleasant walk to the Abbey. Passing the entrance gates, we proceed by a spacious road of recent date, having Limes and Chestnuts, destined one day to form an avenue of considerable importance. No special attractions here exist, the road being perfectly straight, but passing by the second lodge both a change in the scenery and a pleasing landscape are opened up to view. The ancient and renowned forest of Sherwood. The route is somewhat diversified, the visitor having to pass beneath the shade of an avenue of Oaks. The surroundings increase in beauty, till at length the grand old Abbey is seen. It is delightfully situate, and commands an extensive view. The front of the Abbey presents a noble and imposing appearance. Its style of architecture is somewhat mixed, and antiquarians and archaeologists are as yet undecided as to the exact date of some of its parts. Its front, however, is an exquisite specimen of the early English style, and it said to be unique. To the immediate left of the visitor are the remains of the old Abbey church, which, containing similar tracery, excite the curiosity of those learned in ancient architecture.

The Abbey of Newstead, or New Place, is of considerable antiquity, having been founded in the year 1170 by Henry II. Nothing of importance, however, seems to have been recorded till the dissolution of the monasteries in 1539, when it was surrendered to Henry VIII., who the following year granted it to Sir John Byron. During the time the Byrons, who were a warlike race, held Newstead many and various were the changes it underwent, at times being quite unfit for habitation, at others fitted in princely style. It was visited by some of England's greatest monarchs, who were also entertained within its walls. It subsequently passed into the hands of Colonel Wildman, who set about its immediate restoration, and at his death it was secured by the present proprietor, William Frederick Webb, Esq., who, together with Mrs. Webb, have exhibited such a noble appreciation of all pertaining to the Abbey.

I cannot dwell longer on the many and various striking features which here abound, and which cannot in a brief notice like the present be justly recorded, but will suffice by enumerating some of the most noteworthy features during a pleasant walk through the grounds. Conspicuous on the south front are stone-edged beds, ingeniously planted with Sedums, *Mentha*, *Iresine*, and similar plants, which so well adapt themselves in all carpet-bed arrangements. In close proximity, too, must be noted a fine old *Wistaria*, and in the front of the mansion is the lake, a fine expanse of water some 36 acres in extent. Here Byron was wont to sail, and practise some of those eccentricities to which he was prone, and from this point the



Byron Oak may be also seen; from this we pass to the French Garden, a small square plot in the Louis Quatorze style, all of which is in perfect harmony with its surroundings. The Abbey walls here are densely clothed with Ivy, which is productive of that homely charm by which it is characterised. Close by is the terrace overlooking the stew-pond wherein was kept fish for the use of the monks. We pause to lean over the stone balustrade of the terrace where Washington Irving stood and attested to the grandeur of the scene. The lincs of venerable Yews, whose overhanging branches now sweep the surface of the water, are magnificent, and are calculated to be some 700 years old.

From this spot we turn to view the ribbon flower garden, which is situate on the original burial-ground of the monks, a square plat of grass, on which are fashioned or festooned the ribbon border. This annually requires some 7000 bedding plants of all descriptions to produce anything like effect. Now we pass through shady groves, and at the extreme end of one of these we get a good view of the western portion of the lake; and in the distant woods beyond the turreted summit of the old castle erected by the fifth Lord Byron, now a ruin, is to be seen, while the roar of the waterfall, formed by the outlet of the lake, is distinctly heard. Rambling on midst the welcome shade we pass the remnant of a fine old Clematis montana, which had for years rambled among the topmost branches of a Larch, but which, however, succumbed a few years ago. Its tangled mass remains, as it were, a memoir of the past, and it is again making an effort to rise again from the base.

The herbaceous border is 250 yards long, and contains some gigantic examples of many really old-fashioned plants. Here are St. John's Worts, Aconitums, among which latter may be mentioned the pale yellow-flowered *A. pyrenaicum*, and which attains a height of 5 feet, which is a most unusual occurrence, but which is due probably from the great length of time it has been planted, together with a favourable position, the latter evidently having proved conducive to its well-being. Fine and showy, too, were the forms of *Alstrœmeria chilensis*, which appear to withstand the winter unprotected. This is a valuable border plant in soils where its hardiness can be depended on, but in doubtful cases it should be protected by placing cocoa fibre or coal ashes in a mound over it during winter. There also were fine clumps of *Lilium testaceum*, a grand Lily for summer border decoration, and deserving extensive cultivation, seeing it is so well adapted for ordinary soils such as are found in most gardens without special preparation. There it grows to a height of 6 feet, and having dozens of expanded blooms, with many of the topmost buds to keep up the succession, renders it one of the noblest and best of its race. Conspicuous, too, were the gigantic clumps of the Goat's Beard, *Spirœa Aruncus*, which in this border may be counted by the dozen, sending aloft its massive plumes of creamy flowers. A momentary pleasant and unexpected change is opened up to view: the high wall at the back of the herbaceous border, which is clothed with Jasmynes, Roses, *Chimonanthus fragrans*, and such plants, has at this point taken the form of an arc, through which may be viewed the well-wooded park, in which the mounds are topped with Bracken, while in the far distance are fine beltings of *Rhododendrons*, which in spring must produce good effect, consequent upon the unexpected means by which it is revealed. Continuing along the herbaceous border we notice many a fine clump of *Hellebores*, *Hepaticas*, *Columbines* in plenty, and *Campanulas*, with others too numerous to mention. From these we turn and enter the Devil's Wood, so called, perhaps, on account of the dense shade and sombre gloom produced by the Yew trees, which are formed into archways hither and thither—always a cool resort on the hottest summer's day. Emerging from this pleasant scenes await us. Facing us is the "Eagle or Mirror Pond," which derives its former name from the fact that the lecterne now in use in Southwell Cathedral was discovered in it, having, no doubt, been cast there by the monks for safety; its latter name is due to its still waters on a clear day reflecting, as in a mirror, the eastern view of the Abbey. The surroundings of this pond are made up of Ghent Azaleas, *Rhododendrons* and fine Walnut trees alternating. These constitute a charming feature in spring, as may be imagined from the fact that the pond is 100 yards in length and 50 in breadth.

My guide next led the way through an arch to a valley of *Rhododendrons*, which, owing to a slight declivity of the soil, may be viewed from the walk above with ease. These are protected on the one side by Yews, and the other by a handsome hedge from 16 to 20 feet high of *Thuja gigantea*, which also forms the divisional lines between the pleasure grounds and kitchen garden. As we enter the kitchen garden I was greatly surprised at the vast numbers of Carnations which occupy the entire outer border. Of these alone are grown some 10,000 plants of the various sections. At the time of my visit these were not yet in their best, but sufficient proof was afforded that before long they would form a most attractive feature, and would well repay for a visit. For the Carnation Mr. Webb has a particular liking, hence special care is exercised with regard to them, and it is certainly no trivial matter in an extensive establishment such as Newstead to deal with items of so great import as this, especially in the staking and layering season. The other occupants of this garden are such as are required in such a place, and all in turn receive attention. One noteworthy experiment which Mr. Bellis, the able gardener, has adopted with considerable success is that of Strawberry culture on the ridge principle, of which he speaks in high terms. The ridges are thrown up some 3 feet high, having a broad summit shaped into a trench. The Strawberry plants occupy the sides, and the shallow trench above is the agency by which water or liquid manure is applied. In the case of clear water the hose is laid on and the trench allowed to gently overflow, thus securing a thorough watering for all. The efficacy

of the experiment has during the recent hot weather been thoroughly tested, with the result that an abundant supply of fine-flavoured fruit has always been forthcoming. For some twelve years has Mr. Bellis practised this somewhat novel mode of Strawberry culture.

We next paid a visit to the plant houses and vineries. In the latter may be seen a good representative crop of fair-sized bunches, the earlier Black Hamburgs being well finished, the succession vineries promising an equally good return. The various plant houses are filled with small serviceable plants suitable for table decoration. On the roof of one of these some *Fuchsias* have been trained, and are loaded with flowers, while in another *Eucharis amazonica* predominates. These are planted out in rich turfy loam, and are remarkably clean and vigorous; their stout flower stems, which are pushing forth freely. Hundreds of fine bulbs are grown, and it would be a difficult matter to meet with more healthy plants. In the same house, partly for experiment and partly of necessity, are some Melons planted in ordinary 3-inch drain pipes, the leaves of which afford ample shade for the *Eucharis*, and for this purpose they were partly planted, the beds, however, being full of *Eucharis* too valuable to disturb. The idea of using the pipes before named was at once adopted, the result being that not a single case of rot at the collar has taken place, and the abundant crop of good fruit is conclusive proof that their roots not only found their way into the *Eucharis* bed, but were at home when they got there. This Mr. Bellis regards as a fortunate discovery in Melon culture. In another house *Poinsettias* are planted and making vigorous growth. Another noteworthy feature there is that for the many thousands of bedding plants which are here grown annually not a pot is used, one and all being dibbled into small squares of turf, in which they are transferred to their respective places. I was pleased to note some happy combinations in a wild garden, where, among others, *Genista tinctoria* fl.-pl. was a sheet of golden yellow 4 feet across. New formations are going on here in the shape of a rockery and alpine garden, which, when completed, will add additional charms to the many existing. The fernery is also worthy of note with many fine specimens, together with a good example of Pulhamite rock. In the various portions of the park and grounds are numerous examples of fine trees, together with a *Wellingtonia* planted by Livingstone; a *Cedrus atlantica* planted by Stanley, together with groups in circular outline of *Abies Douglasi*, now fine specimens, and some fine *Wellingtonias*, also planted by Livingstone. These and many more now act as reminders, and recall pleasant recollections of those men of genius who planted them.

I turned to leave these pleasant scenes, so full of romantic history, with some reluctance. In conclusion, my thanks are due to the energetic gardener, Mr. Bellis, upon whom the keeping of the gardens and grounds reflects great credit.—E. JENKINS.

#### NEWCASTLE-ON-TYNE SHOW.

THE Durham, Northumberland, and Newcastle-on-Tyne Horticultural and Botanical Society held their sixtieth annual Exhibition in the Leazes Park, Newcastle-on-Tyne, on 23rd, 24th, and 25th inst. The Show was undoubtedly the best that the Society has ever held. The products were arranged in three large pavilions, 160 feet long and 48 wide; the sides of these were taken out, so that when the visitor entered he obtained a *coup d'œil* of the whole Show, which was very effective. The huge foliage plants contrasted with the splendid flowering plants the length of the pavilion. There was 12 feet this year between the rows of plants, which gave greater room for inspection, and the crowds of visitors for notetaking. In the first years of this Exhibition since it commenced under its present large scale Queen's weather generally prevailed, but unfortunately the last two years the opposite has been the case. The weather was very unfavourable, and we are much afraid this year the receipts will be less than in former years. Appended is a list of the awards. The A division is open to all.

PLANTS.—The plants were superb. Mr. J. Cypher, Cheltenham, was awarded the first prize for eight plants in bloom, dissimilar. These were much admired. *Erica obbata*, *Kingstonia* and *Parmentieriana rosea* (the latter a magnificent specimen), *Stephanotis floribunda*, and *Anthurium Schertzerianum* were the principal specimens. Mr. A. Methven, gardener to E. Lange, Esq., Hinthfield House, Low Fell, Gateshead, was second. The best plants were *Allamandas Hendersoni* and *Schotti*, *Erica exquisita*, *Stephanotis floribunda*, *Lapageria rosea*, *Ixora javanica*, and *Clerodendron Balfourianum*; Mr. J. Noble, gardener to Theo. Fry, Esq., M.P., Woodside, Darlington, being third. His plants of *Erica retorta major*, *tenuifolia tricolor*, and *Bougainvillea glabra* were very good.

For eight foliage plants Mr. J. Hammond, gardener to Sir W. Lawson, Bart., Brayton Hall, Cumberland, was justly awarded premier honours; his examples of *Crotons majesticus* and *Disraeli*, *Dasyllirion acrotrichum*, *Macrozamia elegans*, and *Kentia Fosteriana* were all excellent. Mr. J. Cypher was here second. *Cordyline indivisa*, *Latania borbonica* (a huge specimen 14 feet through), *Kentia australis* and *Fosteriana*, and *Croton Johannis* formed an excellent group. Mr. Methven was third. His best plants were *Cycas revoluta*, and *Phormium tenax variegatum*. Mr. J. Noble was fourth with excellent specimens of *Cycas revoluta*.

In the class for a miscellaneous group of plants, 20 feet by 10 feet, Mr. J. Hammond was first with a commendable arrangement, in which *Crotons* *Chelsoni*, *Princess of Wales*, and *Morti* produced a fine effect in the background, contrasting with *Asparagus plumosus nanus*, *Cocos Weddelliana*, *Acalypha tricolor*, and a host of other flowering and foliage plants, encircled with group of *Adiantums*, and margined with the pleasing silvery *Panicum variegatum*. Mr. J. McIntyre, gardener to Mrs. Gurney Pease, Darlington, was second, and by no means an inferior one; his arrangement was also effective and praiseworthy. His best telling plants for colour were *Croton Chelsoni*, the *Eulalia*, surrounded with *Adiantum* Ferns, formed a graceful group, and *Francoa ramosa* was very graceful. The third was Mr. E. Burton, Lane Villa, Kirkby Lonsdale, in which *Croton*, *Bougainvilleas*, and *Zinnia*



elegans had a pleasing effect. Mr. Clark, nurseryman, Carlisle, was fourth. He showed an excellent collection of stove and greenhouse plants.

For six exotic Ferns Mr. Henry Johnston, The Gardens, Elmridge, Darlington, was first. Davallia Mooreana, Dicksonia antarctica, Gl-ichenia speluncæ, and Mendelli, Adiantum farleyense and trapeziforme; all were good, the two latter excellent. Mr. Burton, although placed second, was very nearly equal to the first. For four Ericas Mr. Cypher was awarded first with good plants of Erica ferruginea major, ampullacea major, Savilleana, and æmula. Mr. A. Methven was second with Lindeni, æmula, and ferruginea.

In the corresponding class B Mr. E. H. Letts, gardener to Lord Zetland, Aske Hall, Richmond, was first with Ericas tricolor superba, Parmentieriana rosea, and Aitoni superba; and Mr. H. Johnson, gardener to J. B. Hodgkin, Esq., Elmridge, Darlington, was second with twelve pots of bedding plants. Mr. A. Methven was first with useful healthy plants, and Mr. E. Larke, gardener to the Rev. Mr. Wheeler, Whitley Vicarage, was second. For twelve pots of Sempervivums or Sedums Mr. J. McIntyre was first, and for twelve pots of Rock or Alpine plants Mr. McIntyre also secured premier honours.

Mr. B. H. Letts won first honours in the B class for six plants with Erica Turnbulli, Phœnocomma prolifera Barnesi, 7 feet in diameter; Ixora Prince of Orange, Azalea Brilliant, Allamanda Wardleiana, and Anthurium Schertzerianum, 5 feet in diameter. Mr. H. Johnson was second. Mr. E. H. Letts was also first for six foliage plants, including Cycas revoluta, Croton majesticus, Dasyllirion acrotrichum, Kentia Belmoreana, and Croton Johannis. For six Ferns Mr. Henry Johnston was first, showing Adiantum gracillimum, A. concinnum, Gleichenia rupestris, G. Mendelli, and Adiantum trapeziforme, the latter very fine. Mr. Burton, gardener to A. Harris, Esq., Kirkby Lonsdale, was second with Goniophlebium subauriculatum, Microlepia hirta cristata, Gymnogramma chrysophylla, and G. argentea.

*Cut Flowers and Roses.*—For forty-eight Rose blooms E. R. Whitwell, Esq., Barton Hall, Darlington, was first. The Roses formed one of the most creditable parts of the Exhibition. Many of rosarian connoisseurs considered them superior to any shown this year. All the principal prizes went to this popular northern exhibitor, who was congratulated on all hands. His best blooms were Madame H. Jamain, Thos. Mills, Paul Neyron, Queen of Waltham, Etienne Levet, A. Colomb, A. Wood, Baroness Rothschild (very large), Duchesse de Morny, Marie Baumann, A. K. Williams, Duke of Wellington, &c. Mr. Whitwell was also first for the thirty-six, closely followed by Messrs. Harkness & Sons, Bedale, who showed superior flowers. For the forty-eight Messrs. Paul & Son, Cheshunt, Hereford, were second; and Mack & Son, Catterick, third. For twelve Roses, yellow, Messrs. Paul and Son were first; and for twelve of any sort Messrs. Mack & Son, Catterick, were first. In the corresponding class for twenty-four Roses Mr. C. Laws, Pontyland, was first with good blooms of Pierre Notting, A. Colomb, and Duc de Rohan.

For twelve bunches of herbaceous flowers Mr. J. Oliver, gardener to Lord Ravensworth, Eslington, was first with a good collection, comprising Spiræa venusta, Veronica pyramidalis and albus, Lathyrus latifolius, Geum coccineum, Thalictrum aquilegifolium, Achillea millefolium, Campanula ealycanthema. Mr. Thomas Battersby, Axwell Park, was second. There were nine competitors. For twelve bunches of cut flowers Mr. E. H. Letts was first with Ixoras, Allamandas, Eucharis, Stephanotis; these were all embedded in Adiantum cuneatum. Mr. Noble was second. For Fancy and Show Pansies Mr. Battersby and Mr. Cawthorn were first; and for Pinks and Carnations Messrs. Scott and Flowdy divided premier honours.

Table plants were as usual shown extensively. Mr. McIntyre was first in the A class with Cocos Weddelliana, Aralia Veitchii, Croton Disraeli, and Pandanus Veitchii, Mr. H. Johnson being second. Mr. McIntyre was also first in the corresponding class B.

*Epergnes and Bouquets.*—These always form a special feature at Newcastle. Mr. Cypher gained the first prize for a light and graceful arrangement in an epergne with a base and three side glasses. The flowers employed were Pancratiums, Cattleyas, Lapagerias, Dipladenias, and other choice flowers well arranged. Mr. Whiting, florist, Newcastle, was a close second. Mr. Cypher was also first for a bridal bouquet, the same exhibitor being first for a hand bouquet.

*FRUIT.*—For eight dishes of fruit Mr. Edmonds, gardener to the Duke of St. Albans, was placed first, his specimens comprising the following:—A Queen Pine, 3½ lbs.; Muscat of Alexandria Grapes, large in berry; and Black Hamburg Grapes, Chancellor Peach, Elruge Nectarine, Ischia Figs, and Duke of Edinburgh Strawberries formed an excellent collection. Mr. A. Methven was second with a good Queen Pine, Foster's Seedling Grapes, Madresfield Court Grapes, and Impératrice Nectarines. For four dishes Mr. Edmonds was also first with Muscat of Alexandria Grapes and Chancellor Peaches, very fine. For two bunches of Grapes Mr. E. Douglas was first with Black Alicante, and Mr. Edmonds second with Madresfield Court. For two bunches of Muscat of Alexandria Mr. E. Douglas, gardener to J. Harris, Esq., Derwent Lodge, Cockermonth, was first with fine examples. For two bunches of white Grapes Mr. Larke was first with Buckland Sweet-water; and for two bunches of black Grapes Mr. Jenkins, gardener to B. Cochrane, Esq., Alston Grange, Durham, was first. For Peaches and Nectarines Mr. Edmonds and Mr. Thomas Hare, gardener to R. W. C. Neville, Esq., Wellington, Grantham, were first in each class.

Not for competition were collections of Coniferæ from Messrs. Fell & Co., Hexham; stove and greenhouse plants by Mr. Whiting, florist, Newcastle; and Mr. Jos. Witherspoon, Chester-le-Street, exhibited an ingenious boiler, which received a certificate from the Judges. It possesses several novel arrangements, which are said to save fuel and give greater security for heating effectively.

The Committee, Judges, and friends dined after the Exhibition, presided over by the President, N. Clayton, Esq., supported by the Bishop of Newcastle. The usual toasts were drunk, when the Committee and indefatigable Secretary, Mr. J. Gillespie, were complimented on the success of their labours.

### TREES AT THE CAPE.

Most people have heard how European fruit trees and vegetables have thriven when introduced into Australia, especially in the south-east temperate corner, which embraces Victoria and the greater part of New

South Wales. A continental flora, rich in strong species and in a variety of species suited to every shade of environment, would naturally make terrible inroads into a restricted island flora. The little temperate region of Australia is cut off from the vast temperate region encircling the northern hemisphere by the semi-tropical region of central and northern Australia and the equatorial seas and islands further north. Africa presents the spectacle of the world's great tropical continent with a climatically temperate fringe of highlands clinging to its southern extremity. The temperate zone of Africa is still smaller than that of Australia.

In this temperate fringe of Africa there are now only small forest tracts, comprising altogether something under 200 square miles in area. There has been a considerable destruction of forests since the advent of the white man to South Africa (about 200 years ago); and there are fossil indications of pre-historic forests; but it is unlikely that the temperate forest region of South Africa was ever comparable in point of size to that of Australia. While, therefore, the temperate forest region of Australia has evolved the noble genus of Eucalypts, the smaller forest region of South Africa has evolved no trees sufficiently remarkable to be heard of outside their own habitat. Sneezewood (*Pteroxylon utile*) is a timber which, in point of durability, ranks with Teak Yarra and Greenheart; and if there were only enough of Stink Wood (*Oreodaphne bullata*) it would keep most imported timber out of the market. But Stink Wood is scarce and Sneezewood small; and Yellow-wood, the most abundant and best growing tree, has a poor reputation as timber. The temperate forest flora of Africa, in fact is a small weak island flora, and when we consider how the strong continental floras of the northern hemisphere are making good their footing in the strong island flora of Australia, we may now conclude that in South Africa there is every hope of very materially improving the forest resources of the country by a judicious introduction of exotic timbers.

### PINES.

In Cape Colony a limited but successful attempt has been made to plant exotic trees on a large scale. That exotics have not been largely planted is scarcely to be wondered at, when it is considered that it is only quite recently that attention has been turned to preserving the fine natural forests of the country. As in other colonies, there are botanical gardens in large towns, very useful disseminators of seeds and plants and young trees. But the young trees sold are usually fruit trees. The Pine and Oak plantations near Cape Town are the only example of the planting of exotic timber trees on any large scale. I have used the word "plantations," but "woods" is the proper term to employ. The Cape Town Pine woods are composed of two Pines, *Pinus Pinaster* (the Pin maritime of the French), and *Pinus Pinea* (the Stone Pine of Italy). These Pine woods are one of the most remarkable features in the charming strip of fertile country stretching along the south-east or temperate side of the Table Mountain range. Like true Pines they reproduce themselves with the greatest facility. In favourable positions the young Pines come up like grass under the old trees. Even on the northern, or dry warm side of Table Mountain, plantation owners are in the habit of clean-cutting the Pine plantations, and leaving reproduction to take care of itself. When it fails, as it must sometimes with this treatment, artificial sowings yield an abundant crop of seedlings. Unfortunately fire sometimes destroys large areas of these Pine plantations.

Outside the wooded gorges of Table Mountain the only indigenous tree is *Leucadendron argenteum*, commonly called the Silver Tree, from the white silvery tomentum which covers the leaves like the nap of a silk hat. The habitat of this peculiar tree is confined to the more cool temperate climate of the Cape peninsula. At pretty sylvan Wynberg, and elsewhere on the slopes of Table Mountain, there are natural woods of the Silver Tree—sparse open woods with foliage glittering white in the mild clear light of this latitude. Into these unique woods have crept the dark European Pines, and the mingled tints are picturesque, offering food for reflection. How far will the strong obtrusive but useful northern species eventually oust the pretty useless southerner? Black and white exist here side by side, as elsewhere in Cape Colony, and, just at present, there is room for both. *Pinus Pinaster* and *Pinus Pinea* are the only two Pines which have become naturalised in Cape Colony. The Scotch Fir, mentioned in books of travels as growing abundantly at Cape Town, is *Pinus Pinea*, Scotch Fir or Pine being the colonial name for that species. Mr. Lister, the Forest Officer of the Cape division, who has had a long experience with *Pinus Pinea* and *Pinus Pinaster*, estimates the rate of growth of the second at about half that of the Blue Gum, and of the first about half that of the second. The Blue Gum at the Cape does not appear to grow quite so fast as on the Nilgiris. Probably the acre-increment of a close plantation of *Pinus Pinaster* is about five tons (dry wood), and of *Pinus Pinea* not more than two or three tons. The edible seed of *Pinus Pinea* is not utilised in Cape Colony: its timber is superior to that of the faster-growing *Pinus Pinaster*. Both Pines show distinct annual rings, quite as distinct apparently as the rings in Pine wood grown in Europe. European pitch pine and deal are very largely imported; in fact, Norway deal is as common in Cape Colony as it is in England. The tropical white ant is unknown in Cape Colony, so that a tough light wood, such as deal, is the most generally useful that could be grown. Some stumps of *Pinus Pinea* on the northern slopes of Table Mountain gave an average of from five to eight rings per inch of radius; this was with trees twenty-five years old.

In the more recently settled eastern portions of Cape Colony there are naturally not the large Pine plantations which are so pleasing a feature in the Cape Peninsula. But as far as can be judged from planting on a small scale, *Pinus Pinaster* seems to succeed as well in the east of the Colony as in the different climate of the west (I shall conclude this notice with some remarks on the climate of Cape Colony). Some interesting planting, mostly of *Pinus Pinaster*, has been done on the bleak hills which surround the



eastern town of Grahamstown. Not only does *Pinus Pinaster* show a good growth there, wherever planted, but in one spot I observed some remarkable natural reproduction. In a gully was a cluster of planted *Pinaster* Pines, showing as fine a growth as is usually met with near Cape Town. I measured one tree 6 feet in girth and 90 feet high, and not an old tree, for it is not much above half a century since the English came and planted their trees and houses on the bare hills now occupied by the smiling little town of Grahamstown. From these trees in the gully, young trees, self-sown, have spread up the grassy hillside. This was at an elevation of about 1800 feet, and forty or fifty miles from the southern coast. It shows that *Pinus Pinaster* can be used here for forest purposes, not only on the seaboard (as in France), but at moderate elevations inland. The Cape Forest Department has now some *Pinus Pinaster*s planted still further inland, and at an elevation of 4000 feet. I do not think the climate will be too severe even at this elevation. Frosts there are only such as occur during night, and snow never lies for more than two or three days; the climate is damper than at some parts of the coast, and I anticipate that both *Pinus Pinaster* and *Pinus Pinea*, especially the latter, will succeed there even better than on the coast.

*Pinus Pinea* is a rather striking feature in Italian scenery from Brindisi upwards. Too often the Italian mountains, bared of forest, and cut to pieces by torrents, yield now nothing but the scantiest grazing, and on the rare occasions when the peasant enjoys a fire he draws this luxury from the loppings of the *Pinus Pinea* trees in his fields. *Pinus Pinea* is naturally one of the most flat-topped of Pines when old. In Italy this peculiarity is exaggerated by lopping, and those umbrella-like trees are sometimes as characteristic of Italian pictures as are Palms in paintings of tropical scenery.

The Pine trees near Cape Town, with their symmetrical trunks, their lofty dense covert, and their natural reproduction, recall the Fir forests on the sandy plains of Alsace. They are certainly equal to the Spruce and Silver Fir, which I had an opportunity of seeing recently in the Vosges.—(*The Indian Forester*.)

(To be continued.)

## ROSE SHOWS.

### ST. IVES.

A ROSE Show was held on the 24th July in connection with this Society in the grounds of H. Goodman, Esq., the popular Vice-President, and one of the best supporters of the Society. The arrangements were in the hands of Messrs. R. M. Copley and G. Chapman, the Hon. Secretaries, and the exhibitors are much indebted to them for every courtesy and attention.

Turning to the exhibits, some meritorious stands were staged, and, considering the lateness of the fixture, the general quality of the flowers was good. The leading class was for twenty-four varieties, open to all England, and was well won by Messrs J. Burrell & Co. of the Howe House Nurseries, Cambridge, with a remarkably level and fresh stand, comprising Maurice Bernardin, very fine; Baronne de Rothschild, large and clean; Ulrich Brunner, Ahel Carrière, Comtesse de Serenye, J. S. Mill, Louis Van Houtte, Dupuy Jamain, Beauty of Waltham, Xavier Olibo, A. Colomb, bright; Marie Verdier, Marie Baumann, Merveille de Lyon, fine; Countess of Oxford, good; Annie Wood, Duke of Teck, extra fine; Maréchal Niel, Reynolds Hole, A. K. Williams, bright; La France, Horace Vernet, Marie Van Houtte, and Charles Lefebvre. Mr. B. R. Cant was second with larger, but in some cases rather too forward blooms—Marquise de Castellane, A. K. Williams, Alfred Colomb, and Duke of Edinburgh were noticeable in this stand. Mr. Frettingham of Beeston, near Nottingham, was third with a good collection of fresh even specimens, which, in the opinion of many of the spectators, might well have taken second place. Messrs. Paul & Son of Cheshunt, and Messrs. Atherton of Chatteris, were the remaining exhibitors. The first prize in this class was £5, presented by W. W. Warner, Esq., the President of the Society.

In the class for twelve distinct varieties the same competitors contended, but the leading positions were reversed, Mr. B. R. Cant being placed first with a fine stand containing good specimens of Alfred Colomb, Madame Eugène Verdier, Madame Prosper Laugier, Souvenir de Madame Boll, Merveille de Lyon, Ulrich Brunner, Maréchal Niel, Duke of Edinburgh, A. K. Williams, Baroness Rothschild, C. Lefebvre, and François Michelin. Messrs. Burrell were a close second, their Countess of Oxford, Prince Arthur, and Comtesse de Serenye being good.

In the class for twelve Teas and Noisettes Mr. Cant and Messrs. Burrell were the only competitors, and were respectively placed first and second. The blooms were undersized, and the fine stand sent by the Rev. Page Roberts to the Show last year was greatly missed.

The only open class for amateurs was for twelve varieties, the prizes being given by Mr. H. Goodman. The premier position was assigned to Mr. E. B. Lindsell of Hitchin for a level stand comprising Marie Rady, Capitaine Christy, A. K. Williams, Dr. Andry, Maréchal Niel, Beauty of Waltham, very fine; Marie Verdier, C. Lefebvre, Annie Wood, Pierre Notting, Marie Baumann, and Marie Van Houtte. Mr. J. L. Curtis of Chatteris was second, his box containing, among others, a fine specimen of Ollivier Delhomme. The Rev. E. L. Fellowes, the Rev. F. H. Gall, and Mr. Lawson also exhibited in this class.

A class of twelve varieties was provided for amateur members of the Society residing within six miles of St. Ives, and in this we were glad to see the first prize awarded to Mr. R. M. Copley, Mr. T. Seekings being placed second.

Some good collections of Roses not for exhibition were staged, a box of Merveille de Lyon from Mr. B. R. Cant's nurseries being greatly admired.—H. P.

### HELENSBURGH.

As a rule this has been my last Rose show of the season, but this year the Committee put their Exhibition forward a week, and so I had a very hurried rush from Darlington to Glasgow, and then to Helensburgh, and back again the next day to Liverpool in time for the Manchester Exhibition of the National Rose Society. Happily the weather was cool, so that travelling was not what it had been a week before; still the very rapid

rushing about is rather too much of a good thing, and it was with considerable satisfaction that when I reached my hospitable friends at Larchwood my work for the season, as far as judging was concerned, was over; and as I had promised to be present at Helensburgh this year I was glad to be able to fulfil my promise, and find myself once more amongst the kind friends whom I have known now for so many years.

As I was present in my capacity of Judge at the first exhibition of the Society, and have been at every one since held except last year, I have been enabled to watch its progress and see the improved character of the exhibits that have been brought forward, and have also seen a great improvement in the method of exhibiting; but they still persist here in a plan which has the merit of being perfectly unique. As I have before now explained, when the exhibits are brought they are taken out of the boxes and placed in tubes on tables which receive all the exhibits. The idea is that it places all exhibitors on the same level. This it does not exactly do, for if one chooses to raise up his flowers, and another leaves them flat in the tubes, the former makes the better appearance. Then, as the Society supplies the moss, and each exhibitor is not put on his mettle to provide good green moss, it happens that you may generally say that the Roses are shown on hay or something of the same colour. Moreover, it is not quite fair on the Judges—there is no opportunity of comparing boxes; and, as it happened, two sets in a class where twelve stands were put up at the extreme ends came very close to one another, and it is in such a case very difficult to carry in one's mind the two sets. Of course had they been in boxes it would have been different. I do hope that they will listen to the advice of those who are their true friends, and as they have discarded added foliage, so they will conform to the National Rose Society's rules, that Roses are to be shown in boxes "painted green."

The same remark applies to this as to most of the exhibitions of this year, that the flowers were not up to their usual quality; and although, as is their wont, the Dicksons from Ulster took the foremost place, even their Roses were not up to their usual standard. In the class for forty-eights Mr. Alexander Dickson had a good stand, consisting of Magna Charta, Madame Nachury, Camille Bernardin, Madame de Ligneris, William Köelle, Prince of Wales, Sénateur Vaisse, Bessie Johnson, Star of Waltham, Reine Blanche, Ferdinand de Lesseps, Princess Mary of Cambridge, Duke of Albany, Baroness Rothschild, Madame Victor Verdier, Madame Eugénie Verdier, A. K. Williams, Merveille de Lyon, Le Havre, Marguerite de St. Amand, Marie Baumann, Ulrich Brunner, Alfred Colomb, Lady Mary Fitzwilliam, Etienne Levet, La France, Pride of Waltham, Auguste Rigotard, Comtesse de Serenye, Horace Vernet, Henri Schultheis, E. Y. Teas, Countess of Rosebery, Sultan of Zanzibar, Madame Rivers, Alexander Dickson, Lælia, Reynolds Hole, Maréchal Niel, Xavier Olibo, Duchess of Vallambrosa, La Rosière, Triomphe de Rennes, Général Jacqueminot, and Capitaine Christy. In the class for thirty-six Mr. Hugh Dickson was first with good blooms of Beauty of Waltham, Madame Victor Verdier, Duchess of Bedford, Lady Sheffield, Comte de Raimbaud, Elie Morel, E. Y. Teas, Prince of Wales, Marie Baumann, Sophie Coquerel, Baron Hausman, Reine Blanche, Dupuy Jamain, Gloire de Dijon, Sénateur Vaisse, Comtesse de Serenye, Dr. Andry, La France, Star of Waltham, Madame Eugénie Verdier, Madame Marie Verdier, Baroness Rothschild, Duc de Rohan, Etienne Levet, Ulrich Brunner, Merveille de Lyon, Duchess of Edinburgh, Lælia, Triomphe de Caen, Souvenir d'un Ami, John Stuart Mill, Marquise de Castellane, Alfred Colomb, Marie Finger, Thomas Mills, and François Michelin. In the class for twelve Teas (open) Messrs. Hugh Dickson and Mr. A. Hill Gray were placed equal. The former's flowers were Comtesse de Nadaillac, Caroline Kuster, Triomphe de Rennes, Alba Rosea, Madame Berard, Perle de Lyon, Bouquet d'Or, Madame Lambard, Marie Van Houtte, Anna Ollivier, Rubens, and Souvenir d'un Ami. Mr. Gray's flowers were Catherine Mermet, Sombreuil, Anna Ollivier, Rubens, Souvenir d'un Ami, Madame de Tartas, Souvenir de Paul Neyron, Amazon, Marie Van Houtte, Perle des Jardins, Adam, and Comtesse de Nadaillac. Mr. Gray was also first in the class for twelve Teas, amateurs. By-the-by I perceive that the Society has not adopted the rule of the National, by which Hybrid Teas are not allowed to be shown amongst Tea Roses, as in some stands I saw Cheshunt Hybrid and others exhibited.

The chief prize amongst what we should call amateurs (but this latter term in Scotland simply means anyone who does not employ a gardener) was won by Mr. W. Parlane, gardener to Colonel Desmaston, Roslea, Row, with a good stand of Etienne Levet, Jean Liabaud, Ulrich Brunner, Louis Van Houtte, Duchess of Edinburgh, Duke of Edinburgh, Princess Mary of Cambridge, La France, Princess de la Tremouille, Madame Lacharme, Comtesse de Chabillant, François Michelin, Madame Charles Wood, Marquise de Castellane, Alfred Colomb, Madame Hippolyte Jamain, Mrs. George Paul, Capitaine Christy, Souvenir de la Malmaison, Madame Clemence Joigneaux, Charles Lefebvre, Prince of Wales, Baron Gonella, A. K. Williams, Princess Mary of Cambridge, Marie Baumann, Pride of Waltham, John Hopper, Oxonian, Le Havre, Duchess of Vallambrosa, Sir Garnet Wolseley, and Général Jacqueminot.

The various small classes were well contested, and the general quality of the blooms was much improved, although the season had been unfavourable, and Messrs. Spalding, Tate, and others won well-deserved honours.

I was somewhat surprised to read the disparaging remarks about A. K. Williams in the last issue of the Journal, nor can I at all agree with them. It may not be a vigorous Rose, but it is not a delicate one, and I have seen at Mr. Hall's at Larchwood plants of it with as strong sturdy shoots as one need wish to see. It has been sorely tried in the working of it so rapidly, but I believe that the idea that it will not bear transplanting, and must be budded *in situ*, is an erroneous one.—D., Deal.

## COMING FLOWER SHOWS.

THE following are the Exhibitions announced for August and September:—

- |        |  |
|--------|--|
| August | 2nd and 4th.—Liverpool (two days). Southampton (two days).                       |
| "      | 12th.—Royal Horticultural Society, Fruit and Floral Committees; Cottagers' Show. |
| "      | 14th.—Maidenhead.  |
| "      | 15th, 16th.—Cheddar, Cheshire.   |
| "      | 20th.—Shrewsbury (two days).   |
| "      | 21st.—Reading.   |



September 2nd.—Stratford-on-Avon (two days).  
 „ 3rd.—Glasgow. Bath (two days).  
 „ 5th.—Crystal Palace Fruit and Dahlias (two days).  
 „ 9th.—Royal Horticultural Society, Fruit and Floral Committees.  
 „ 11th.—Bury St. Edmunds (two days). Dundee International (three days).  
 „ 17th.—Edinburgh (two days).  
 „ 23rd.—Royal Horticultural Society, Fruit and Floral Committees; Fruit and Vegetable Show.



#### KITCHEN GARDEN.

THE present time is rather a busy period in the kitchen garden. There are many crops, such as Peas, Broad Beans, Potatoes, Cauliflower, Spinach, Turnips, &c., now over, and a general clearing takes place. The Pea stakes are carried direct to the late rows, and put in to support them, and all the refuse is taken to the vegetable heap to lie there until it has decayed and been converted into vegetable mould. The ground cleared of these old crops is not dug or forked as a rule, but only deeply hoed; and afterwards raked to take the rough of the weeds or refuse off, then other crops are put in. All kinds of winter greens which have been waiting in the nursery beds for space elsewhere should be put into these vacant spaces. Brussels Sprouts will not do much good planted out now, it is too late; but Savoy, Curly Greens, and late Broccoli may be planted with every certainty of their doing well and becoming useful. Late Turnips may still be sown, and a good width of Spinach should be sown for use in September and October. Radishes, Lettuces, Endive, &c., may also be sown. The Broad-leaved Batavian is the best of all winter Endives, we grow no other. It is massive, high in quality, and bears rough weather well. Winter Lettuce should now be sown; give them a sunny position and the best of soil. Little patches of each will do, as they will all have to be transplanted by-and-by if produce of the best description and very hardy is desired.

Carrots, we hear, have failed in many instances this season. This is a pity, as they are indispensable, but there is yet time to produce plenty more. If seed of the Early Horn be sown at once in a favourable position the young plants will quickly appear, grow fast, and form tender useful roots before November. The drills should be 15 inches apart, and sow thinly, as plenty of soil is of the greatest importance in autumn. It is very seldom that grubs do any harm to Carrots sown at this time, and in many gardens where they cannot be made to succeed in the early summer months, it is quite the opposite in the autumn, when they do capitally. We may say again that only the Horn varieties should be sown now. If the long ones were put in they would never thicken, and be too small and spindly to be of any value.

Onions are not generally free from maggots this season. We hear many complaints of wholesale losses. Ours are perfectly free from all insects; this we attribute to the free use of gas lime from our works, which was dug in before sowing. This, however, will benefit no one at the present time, but I would like to observe that Onions may be sown now, too, to make a useful autumn crop. The fastest-growing White Spanish kind should be sown. Give them a dry warm border, and a fine crop of useful little bulbs will have appeared by November.

Mushrooms have been more plentiful in the fields this July than we have seen them for some years, and when they can be picked up readily we are rather liable to be regardless of our Mushroom beds; but the field ones will all have disappeared long before October or November, and this is a time when good Mushrooms and plenty of them begin to be valued, and to have them then it is necessary to collect droppings and form beds as soon as possible. Cool sheds are splendid places in which to grow late autumn, winter, and spring Mushrooms. Now is a good time to order the spawn; one bushel will do several small beds. Nothing but new bricks from some respectable dealer should be dealt with. Last year we tried some French spawn for the first and last time; it will bear no comparison with the English material. Tomato plants on the open walls require very frequent and close stopping now, and all fruit should be fully exposed to the sun.

#### FRUIT-FORCING.

PEACHES AND NECTARINES.—In order to maintain a steady supply of fruit throughout the season in establishments that do not require more than two or three dishes a day, there is no question that houses containing two or three trees each are likely to maintain the succession unbroken better than large houses. These remarks more particularly apply where early forcing is practised, as houses that are started so that the fruit does not ripen before August may be planted with a greater number of varieties, so as to afford a succession of fruit over a more extended period. The time that any one house ought to be calculated to afford a supply of fruit should not exceed six weeks in the early part of the season, and the varieties employed should be of proved forcing qualities. For forcing early or starting in December early, so as to ripen with certainty by the beginning of May, we find none to equal Alexander, Hale's Early, Large Early Mignonne, A Bec, and Royal George. These are equally suitable for houses to be started in January; but for starting in

February Royal George, Grosse Mignonne, Violette Hâtive, and Stirling Castle, with Noblesse answer, and all yield fruits of fine size and quality. For later successional houses those last named are of course available, and to them may be added Bellegarde, Dymond, Barrington, and Walburton Admirable. For very late houses we recommend the Walburton Admirable, Desse Tardive, Princess of Wales, Lord Palmerston, Golden Eagle, and Osprey. We do not wish to disparage the new varieties in not including them in the early and midseason varieties, but we wish to point out that the tried sorts ought not to be discarded, or the best positions given to the new, until their good and bad points are tested.

Of Nectarines, Hunt's Tawny is still one of the best for early forcing, Lord Napier, Murrey, and Elrue. The latter, Violette Hâtive, Stanwick Elrue, and Pine Apple are good for successional houses, and for late houses Pine Apple, Albert Victor, and Victoria.

Although it is still too early to plant fruit trees, it is not too early to think about the trees, as those for planting in houses should be the finest well-furnished trees of two or three years' training with well-formed heads, not strong and gross, but clean and healthy without a trace of gum, having the joints close and the wood firm. It may be necessary to give a higher price for such trees, but they will well repay for the outlay and come quickly into profit. The trees should be moved to the houses before the leaves fall, and if they be properly attended to they will push roots freely at once, enabling them to bear gentle forcing the first year in preparation for earlier work in the next, and if the trees are furnished with flower buds they will give some fruit the first season.

In the meantime the houses should be prepared for the reception of the trees. Light well-ventilated structures are only available for the successful cultivation of Peaches and Nectarines, and the roof lights should be moveable, so that they can be taken off for the exposure of the trees when considered advisable. For early work the borders are best inside, and for those to afford successional supplies it is well to have inside as well as outside borders, and the best form of tree is the fan, training to a trellis about 14 inches from the glass. The houses ought to be well heated, as there is no economy in having a few pipes highly heated, and it is prejudicial to the trees. The borders should be about 30 inches deep, and if the bottom be stiff and wet take the excavation 6 inches deeper, and put in 6 inches thickness of concrete. The bottom should have an incline to a 3-inch tile drain or drains, and they should have proper fall and outlet. Put in 9 inches' thickness of drainage—brickbats or similar material, the coarsest at the bottom and the smallest at the top, securing with a layer of turves grass side downwards. The width of the border need not be more than the width of the trellis when the trees are full grown, and a 4-foot width will be ample for the trees in the first instance, adding to the width annually, or as the trees give evidence of requiring more root space, confining the roots at first to the inside border. The soil most suitable is a strong calcareous loam, and if deficient of calcareous matter add a tenth of old mortar rubbish or chalk. If the soil be light add a sixth of clayey marl, and in all cases have the soil in a moderately moist condition only, so that it can be put together firmly. Avoid manure, but crushed bones to the extent of a fortieth part may be added.

VINES.—*Early House.*—Where early-forced Grapes are preferred to the thick-skinned varieties that have been kept in the Grape-room, the wood will or ought to be getting quite brown and hard, if not quite ripe. If the foliage is kept clean and healthy a dry warm atmosphere by day with abundance of air by night, will greatly benefit the Vines, and bring about a condition of the Vines likely to further the production of compact closely set bunches, which generally colour better than those that are borne on half-ripened wood. Early Vines that require renovating may now be taken in hand. If the roots have the run of inside and outside borders, one of them may be taken out and fresh compost supplied without running the risk as to the loss of the next year's crop. It is hardly necessary to say that the operation should be quickly and carefully performed, and the house kept close and shaded until fresh growth takes place, as advised in a former calendar.

*Vines in Pots for Early Forcing.*—Those intended for this purpose may be removed to a south wall for a time where they can be protected from wind; or in case of their occupying a house with moveable lights, these may be drawn down to favour the healthy ripening of the foliage and proper maturation of the wood without giving so severe a check as is often done by placing them outdoors.

*Young Vines.*—Canes planted out this spring should be encouraged with heat and moisture until they have filled the space allotted to them, a free lateral growth suiting them best, the object the first year being the formation of roots and a few well-ripened buds near the base for pruning back to, and the laterals from these should be kept closely pinched. Maintain a good moisture in the house, especially at closing time, which should be early, and afterwards admit a little air at the top of the house for the night.

*Grapes Scalding.*—Sudden changes of atmospheric conditions from dull weather to bright sunshine are very trying to Vines in all stages of growth, particularly to Lady Downe's, Alicantes, and Muscats still liable to scald. Maintain a rather warm atmosphere at night, and freely ventilate by day until the danger from this source is past.

*Grapes Losing Colour.*—Bright sunshine is unfavourable to the preservation of ripe Grapes, which soon lose colour when fully exposed. Under these conditions, when it is necessary to keep black Grapes for any length of time after they are ripe, a little shade drawn over the roof on bright days will be of service, provided it be withdrawn when the sun is off the house, but when this cannot have such attention a double



thickness of herring nets may be thrown on loosely and remain on permanently until the Grapes are cut.

*Vines Swelling off their Crops.*—Give every attention possible in mulching and watering the inside borders with tepid liquid manure, and if dry supply liberally with tepid liquid in addition to mulching; but if wet, the latter will suffice, as the rains will keep the roots well supplied with food. If the Grapes are well advanced ventilate freely through the early part of the day, closing sufficiently early in the afternoon to raise the temperature to 90°, and admit a little air at night. Keep the atmosphere well charged with ammonia by damping the floor, &c., with clear liquid manure, and syringe all surfaces where it can be done without spotting the Grapes every evening. Keep the laterals pinched where they crowd the principal foliage, whilst where there is room, and especially when the Vines are carrying heavy crops, a fair amount of lateral extension is advisable.

#### PLANT HOUSES.

*Gardenias.*—Plants that have been cut back and intended for late flowering in spring have broken well into growth by this time. If they need potting, or the size of the old ball reducing, it should be done without further delay. These plants will bear without injury the soil picking out carefully from amongst their roots and again repotting in the same or smaller pots. They do much better afterwards, and grow with greater luxuriance than when allowed to remain in the same pots after the soil has become sour through the large quantities of water required while these plants are in active growth. After plants have been operated upon in this manner they require very careful watering, shading for ten days or a fortnight from bright sun until the roots commence activity, when they can be grown under the same conditions as established stock. Plants that flowered early and grown on without cutting back for early flowering may now for a few weeks have cooler treatment, which will bring growth to a standstill, and the plants when introduced again into brisk heat will soon form flower buds. We prefer young plants grown on from cuttings annually for maintaining a supply of bloom in preference to retaining old plants. Plants grown on from cuttings without being checked soon grow into large bushes, and are more satisfactory in every way than old plants. Those intended for early flowering another year, if rooted when advised, will be bushy little plants ready for 5-inch pots. Another batch should now be rooted to succeed those to be placed into larger pots. It is a mistake to shade these plants.

*Dracæna Goldiana.*—This is a grand foliage plant, and will doubtless, as soon as it becomes plentiful, be largely used for decoration. It takes a long time to work up a stock of plants, but it is sure. No other variety, *D. gracilis* perhaps, excepted, will strike root with greater certainty. When the stems become hard and woody the dormant eyes along the stem are a long time breaking into growth, and the head, if the base is firm and hard, will take double the time to root as if taken off nearer the top. The softer the wood the sooner they strike, and several of the joints below where the head is taken off, if inserted in small pots with a leaf attached, will form roots and soon make plants. These, as well as those raised from side shoots taken from the old stem, never make such handsome plants as heads, but as soon as they have made a few good leaves the tops are taken and rooted. From these young stems shoots are soon produced, and a stock of young plants quickly raised by this means. We have found that constantly cutting up the plants before their stems have become hard is the quickest method of raising a stock of this useful variety.

*Ixoras.*—Large plants well grown and flowered are charming, but for decoration in small pots these plants are not half so much grown as they deserve to be. By constantly striking a few plants and growing them in 4 or 6-inch pots there are frequently some in bloom from early in the spring to late in the autumn or winter. Strong vigorous cuttings are selected and rooted in thumb pots, and afterwards transferred into the smallest size named and allowed to grow unchecked, when one fine large truss is produced on the top of plants varying from 6 inches to 1 foot high. When these have bloomed they are cut back, allowed to break into growth, and then placed in pots 2 inches larger, which, if they flowered early in the season, come in again during late summer or early autumn, and are invaluable. These plants after flowering are allowed to produce strong cuttings, which are taken off and rooted, and the old plants conveyed afterwards to the rubbish heap. To grow *Ixoras* well they should have plenty of heat and moisture and be grown as close to the glass as possible, standing on some moisture-holding material, or plunged, and never shaded from the full force of the sun except when in flower. These plants flourish in rich loam and sand in which a little cow or sheep manure has been intermixed, or in a compost of loam, peat, and sand. The varieties we grow for this purpose are *I. coccinea*, still one of the best, and *I. Pilgrimii*, which is a good grower, dwarf, and very free-flowering.

*Crotons.*—Good tops rooted now in 4, 5, and 6-inch pots will be invaluable for decoration during the winter months. Where these plants are appreciated for room-decoration during that season every plant that is likely to be too large and useless for the purpose then should be headed down and rooted. Crotons root readily at this season of the year in a close warm frame, and should be inserted in the pots in which they are intended to be grown. After they are rooted and hardened so as to stand exposure in the house in which they are to be grown, arrange them close to the glass where every ray of sunshine will reach them. To be effective and display their natural beauty the foliage must be well coloured by exposure to light, for if this is not done now it is impossible to colour them during the autumn and dark days of winter, when the plants should be perfection and growth at a standstill. Well-grown and

beautifully coloured Crotons are very effective and useful for decoration, but when badly coloured few plants are less attractive.

*Cypripediums.*—*C. insigne* and its varieties that were started into growth early in the year in a vinery or Peach house should now have a lighter position in a cool moderately airy structure, where they can be shaded. If kept in heat any longer they will flower earlier than they are required, and often throw up their flowers irregularly and prematurely. *C. venustum*, *C. villosum*, and other cool species and varieties may remain in warm quarters for some time longer, for they flower later, and their growth is very far from being completed yet. All *Cypripediums* should have abundance of water; in fact, they should not approach dryness during active growth.

#### THE FLOWER GARDEN AND PLEASURE GROUND.

*Spring-flowering Plants.*—These ought now to be well in hand, or otherwise the majority will be too small to bloom properly in their seasons. In warm localities it is too early by at least three weeks to sow seed of such annuals as *Nemophila insignis*, *Limnanthes Douglassii*, *Saponaria calabrica*, *Silene pendula*, *Collinsia bicolor*, and *Virginian Stocks*; but in northern or colder districts they should be sown not later than the middle of July. Sow the seed thinly in drills drawn about 6 inches apart and previously watered if dry. A light and not very rich soil best answers the purpose, and the seedlings should be thinned out early. Among perennials to be propagated are *Arabis* of sorts, *Alyssum saxatile* and varieties, and cuttings of these serviceable spring-flowering plants should be taken or pulled off with a heel and dibbled in firmly and thinly in handlights stood on good sandy soil at the back of a north wall or similarly cool position. *Aubrietias*, which, like the preceding, are good either for beds, borders, or rockwork, may also be propagated in the same manner. *Iberis* or herbaceous *Candytuft* are also increased by cuttings or divisions, and otherwise treated similarly to the *Alyssums*. *Primulas* to be divided at once and replanted on light and good soil in a cool position. *Saxifrages* succeed best in the open, and may be divided and replanted directly the young growths are matured. *Pipings* or cuttings of *Pinks* to be taken off at once and dibbled-in in handlights on good sandy soil in a cool position, nothing being better than the back of a north wall. *Daisies* to be freely divided and dibbled-in firmly in good light soil in a cool position. Seedling *Wallflowers* and *Sweet Williams* to be pricked out at once, and if cuttings of choice or double sorts of either are pulled off and treated similarly to the *Alyssums* they will root quickly. *Carnations* and *Picotees* may be struck in handlights this month or layered during August, the latter method being the most sure way of raising strong plants, and will be again alluded to. The *pipings* or cuttings are best pulled off, only very slightly trimmed, and firmly fixed in sandy loamy soil and covered with a handlight. In districts where they fail to root thus treated and the handlights being placed in cool positions, the cuttings should be inserted in boxes and a little bottom heat given.

## THE BEE-KEEPER.

#### REMOVING BEES TO THE HEATHER—STEWARTON HIVES.

A CORRESPONDENT, "F. W. S.," desires to have detailed instructions on removing populous Stewarton hives to the moors, a distance of ten miles. There is no greater risk with Stewarton hives than any other sort which may have an equal number of bees. The Stewarton hive is perhaps higher than many frame hives, which on a rough road causes them to oscillate more, but is overcome by being better corded to the spring cart. I have taken bees to the Heather for forty years, and during that time I only lost one hive containing about 20 lbs. of bees by neglecting to attend to my usual precautions. The distances I have taken my bees to the Heather ranged from twenty-four miles, all that distance on a spring cart, to eighty miles, partly by cart, rail, and steamer, and for some years almost wholly by train a distance of fifty miles. Not only is it desirous that the bees and combs should be conveyed in safety so that the bee-keeper will not meet with disappointment through collapse of combs and heating of bees, but great care should be taken to prevent escape of bees, which not only puts the hive into a state of excitement, but endangers both people and domesticated animals. Overheating bees not only causes collapse of combs, but induces foul brood, causing both present and subsequent loss and disappointment.

After the Clover season I overhaul all hives intended for the moors, removing all full and partly filled supers. If the queen has had much laying previously I depose her, and give a young fertile one. Then to add further strength, if the top boxes are heavy, or if frame hives, I remove the former and the well-filled frames, or even the empty ones in the latter, and substitute frames and boxes containing brood from weaker hives that are not likely to make much weight at the Heather. It is only strong hives that will make weight at the Heather, and the proper way and time to utilise condemned bees is when something can be made out of them. If extracting filled honeycombs has rendered the stock too light, give some sugar to keep up breeding and prevent the destruction of eggs.

A few days before starting for the Heather put on the necessary supers, and if the floor is not ventilating make it so with a sliding



shutter underneath to close when at the Heather, because, although I ventilate beneath freely now, the nights are colder in August and September, and the bees require all the heat to encourage comb-building. For square hives a light frame covered with perforated zinc five holes to the inch will ventilate well, provided a piece of perforated zinc has been fixed on the top of the supers. If the combs are not too deep, or springs of cart not too stiff, strong hives with as much empty space as is crowded with bees will travel comparatively safe, causing neither loss nor disappointment; and if the weather be favourable will rise to great weight and make capital stocks for next season.

I provide my Stewarton hives with ventilating floors, making an octagon rim  $1\frac{1}{2}$  inch deep. The one side I cover with perforated zinc, the other I cover with wood; the centre piece, about 10 inches broad, slides out and in. If the hive is placed upon a sparred cart the air passes freely up through. If the bottom is solid something to raise it a little may be placed beneath. The alighting board is movable, and the floor I fix to the body box with two back flap hinges.

**STEWARTON HIVES.**—"Novice" requires exact measurements for Stewarton hives. His best plan would be to purchase a hive from Messrs. Neighbour, who supply all that is necessary. The Stewarton hive is octagon, 6, 7, and 9 inches deep; the former has bars only, the two latter four or five frames in the centre; but I will confine my remarks to the former only. The size of all hives are regulated by the number of combs they contain, and as each comb measures  $1\frac{1}{2}$  inch to nine bars, will measure  $13\frac{1}{2}$  inches; but an additional width is required at the outsides, or the combs are not extended by the bees, so I allow a quarter of an inch more at each side. The hive inside measure will then be about 14 inches. The supers are the same in size, but 4 inches deep, and have seven bars only, each comb for supers being 2 inches broad. The bars of both supers and body boxes are three-eighths less than that to admit the slide, which is feathered to run in a groove of the bar, which should also have an eighth groove for comb foundation in the centre.

The sides of the hive are of the best yellow pine (of which all hives should be made) five-eighths thick. These are cut from one another, marked by a template to insure accuracy, and are then drawn in for depth of dovetail, which, if not correctly and accurately done, will not tier one with another: this is where care is required. A hole is made at the back and front to receive a pane of glass, and a mouthpiece or three in each box. I prefer one mouthpiece only when I have recourse to under ventilation; these pores and mouthpieces are fitted with sliding shutters, and the three body boxes, supers, and floor have either screws for cording together or are united by brass-back flap hinges. "Novice" will find in the reply to "F. W. S." how to make ventilating floors. Stewarton hives may either be covered with a straw hackle, shed, or the more ornamental octagon or square cover. The cheapest octagon covers are made by having two inner hoops to which the lining is screwed. A zinc cover is surmounted by an acorn, and the whole is placed upon a single pedestal.

"Novice" also wishes to know the best way to find a queen. Keep a sharp look-out amongst the cluster of bees, turning the hive so as to cause the bees to spread and change their place, and the movements of the bees will indicate where the queen is; but second swarms have often many queens. When searching for queens in frame hives, if the queen is quiet she is easily found, but very often when frames are disturbed the queen leaves them and goes on to the side of the hive, and not seldom leaves the hive altogether—a cause of queens being lost, and the hive spoiled through manipulation. When I find it difficult to secure a queen I divide the bees until the number is so small that she is easily detected. —A LANARKSHIRE BEE-KEEPER.

### HIVING BEES.

ABOUT two years since a swarm of bees took up their quarters inside the weather tiles of an old house, getting in through a chink where the mortar had dropped out. We wish to get them out, so as to be able to put them into a frame hive. Please say how we should proceed about it. It is possible they could be got at inside the house in an old room by moving the skirting-board, as a few sometimes get through a crack there, and they can be plainly heard close through the board. When would be the best time to get them out—I mean time of day and month? Should they be driven by rapping near them or by smoke?—J. H.

[As the bees appear to be able to be reached from the room it is far better to attack them from that place. It is always awkward to get at bees from the outside on ladders. We have removed bees from places similar to that described by "J. H.," and should proceed thus:—Have the bar-frame hive at hand and some raffia grass, which we find capital stuff for tying-in combs. Have also a receptacle for the honey, some carbolic acid solution (a wineglassful of acid to a pint of water), plenty of old rotten wood or rag for the smoker. Now is as good as any other time for the operation, and we should choose the evening as the best time of the day, because we should then secure all the bees. Preparation should be made early by removing the skirting-board where the bees are heard, and perhaps it will be found necessary to cut away some lath and plaster, for we expect that the bees are located between two rafters, having attached their combs to them. If the bees are suddenly exposed hang up a sack, so as to keep them quiet until evening, then freely use smoke to cause them to gorge. If holes are seen above or around the nest anoint them well with the carbolic solution, otherwise the bees may try to make their escape by these passages to another part of the wall and give endless trouble; but if they are coolly attacked they will most likely cluster closely. The combs should now be detached with as little

shaking as possible. The bar-frame hive standing near should have a few frames with foundation with the quilt drawn over them, and the bees are to be shaken in at the back of these frames. The combs with brood should be tied into frames and given to the bees. When moving the combs from the nest, if it is possible some vessel should be placed under to catch any falling bees, or the queen might fall and crawl away. All heavy honeycombs we should cut out and place in the pan prepared for that purpose. Should complications arise and all the bees not be secured, every care must be taken to hunt well for the queen. As each comb is taken out she should be searched for. If she is secured and nearly all the bees, the others will most likely find her, if the hive be placed at hand, next day, after which of course the hole between the weather tiles should be stopped. We should feed the newly made colony until they had built combs and secured the old ones. In a day or two the combs should be examined and the raffia grass taken out.—P. H. P.]

### HONEY GATHERING—UNITING BEES.

I HAVE four hives of bees, three of which have this year given very good results; from one I have had nearly 60 lbs. of honey, whilst from the fourth I have only had 15 lbs. The reason I believe is that the queen is old. I have had no swarm from this hive for three years, as I did all that was necessary to prevent swarming. Last year I had 30 lbs. of honey in sections from it (which as an amateur I thought wonderful), leaving at the same time sufficient for winter and spring. This I know from the fact that up to June 1st there still remained in the hive comb filled with honey which had not been unsealed all the winter. In a week or two's time I shall be able to obtain from my neighbours almost any quantity of "driven bees," and I want to know the best way of uniting the "driven bees" to the old stock, so as to ensure the getting rid of the old queen and the introduction of a young one. If you can give me any information on this point I shall be greatly obliged.—JOHN BULBECK.

[It is quite possible that the queen in your fourth hive is a young one, and not old, and not collecting so much honey as the others is perhaps due to time lost between the deposition of the old queen and fertilisation of young one. It is unlikely in such a season as this has been that the bees would retain an old and effete queen. To effect the introduction of a young queen the old one must first be deposed if the two swarms are about equal strength; after sprinkling both with thin scented syrup they may be shaken together. The secret of successful joining lies in having both lots of bees filled to repletion. What we never knew to fail is to drive both swarms into empty hives, then shake all together; the quicker it is done the better. More caution is required with bees in frame hives, but if you succeed in getting the bees in stock hive to gorge themselves, the driven bees may be either placed beneath and allowed to run up, or shaken on to a board or sheet, then place the frame hive over the bees, the floor-board being drawn of course.]

### CALEDONIAN APIARIAN SOCIETY.

THE eleventh Show of the above Society was held at Edinburgh in conjunction with the Highland Agricultural Society on the 22nd, 23rd, 24th, and 25th of July, under the able management of Major R. J. Bennett, to whom the bee-keepers are indebted through his indefatigable labours and efforts in accomplishing to bring together the various exhibits that formed the finest exhibition of apiarian appliances and produce that has ever been witnessed in Britain; but although Mr. Bennett's efforts have been crowned with success it is not wholly due to himself, nor is it known that it was through his amiable lady working, often till past midnight, that the work was overcome, and the Society successfully launched in 1874. Members of the Society should bear this in mind; and while we congratulate both Mr. and Mrs. Bennett on its success, I think both are entitled to more than a mere passing word of praise.

The bee-keepers of England were represented by Mr. Alfred Neighbour, those of Ireland by Dr. Knight, Hon. Secretary to the Irish Bee-keepers' Association; and Scotland by Mr. Cameron from Inverness in the north; and almost every bee-keeper of note in the south and west.

In addition to the large tent for manipulating there was a large tent 61 feet by 21, completely crammed to overcrowding, not holding much over the half of the exhibits, which had to be put outside. I was somewhat pleased to witness different articles awarded first prizes that I invented and exhibited seven years ago, but was then ignored. The exhibitors in appliances were Messrs. McNally, Glenluce; Steele of Dundee; Young of Perth; Leslie Tait of Aberdeen; and Wm. Thomson, Blantyre.

The Exhibition was entirely free from the interested competitors and judges which characterised the early shows. Nothing but harmony prevailed, and so busy were they kept in explaining their exhibits and making sales to the great crowds of interested and inquiring people that no conference was possible. It might be thought invidious did I single out anyone as having appliances superior to another. There was not one that had not something superior to his neighbour well worth copying. The taste displayed in the losing hives was even superior to the first-prize ones. The latter, however, had all the improvements and facilities for storing honey either above or in the body of the hive—non-absorbing roofs well ventilated, the floors the same, while the external surface was entirely free from projecting angles, so that it is impossible for rain or wet to gain an entrance.

For the best hive on the storifying principle there was much competition, but the first and second prizes lay between a pretty Stewarton and outside case, and a pretty tiering hive belonging to Mr. Steele of Newport, which had the first prize. I consider it would be an improvement in that hive if Mr. Steele would remove the plinths of cross straps, which impede manipulation when combs get fastened to the tops of the boxes, and are sure to draw damp; better, I think, were they placed in an outer case



instead of being double-walled. All Mr. Steele's hives and other exhibits were of an exceptional character and well got up; his tray of supers, which was first, was really pretty. Mr. Young's tin-work, including extractors, were of excellent material and workmanship. Mr. Tait's exhibits were advanced and well made.

Mr. McNally exhibited some pretty straw hives fitted with bars; the principle was good, but too small. With the good feeling that prevailed amongst the persevering and determined competitors, if spared until another year something grand amongst hives may be expected. When all the good points are combined in one it will be a difficult task to win a first prize. As it was, the Judges had a difficult task to perform, but as they were practical bee-keepers they were guided by their own judgment and knowledge, and not by any extraneous pressure.

In the observatory class there were upwards of a dozen competing. There was some grumbling at the awards in this class, but long before the close of the Show the decision of the Judges was proved to be correct. The first-prize hive was the only one that stood the test, the bees (after they got over the agitation caused by some mischievous person closing the entrance, and which was not discovered for some time) wrought well, repairing all damaged comb caused through rough handling, and built and sealed much new comb. The bees were watched with great interest by the visitors carrying on the internal economy of the hive, as well as those observed under the glazed race, loaded with pollen and honey. In all the others there was not one that covered the combs at the close as they did at the opening of the Show, and in some of them the bees had retreated to one space, attempting to establish themselves anew in their natural sphere, thus proving the fallacy of oblong hives. Notwithstanding the advantages that inexperienced bee-keepers tell us are to be derived from such hives, the bees show us differently. It does not matter how pretty observatory hives are made—and those at Edinburgh were very pretty indeed—they will not do where every comb is glazed, nor where the combs are separated. Mr. Leslie Tait's hive in this class was, with the exception of the first-prize, the only one on right principles, and had the frames been distanced and steadied with knobs or staples instead of fillets, which prevented the sliding of the combs, would have been at least second.

A great mistake was made by competitors in the unicomb class by not having the combs wrought in the hive exhibited. In every one of these the combs pressed upon the glass, and the frames wrong placed. If competitors would attend to these defects, and the Society provide wooden shades over the hives to prevent the glare of the sun through the canvas, which excites the bees and prevents visitors seeing the queen, it would be a great improvement, as when the bees are at work they are more interesting and please the public better. So that instead of keeping the bees shut in, as advocated by Mr. Raitt at Edinburgh, it is to be hoped that the Society will rather encourage the bees to be at work, as it is by that that the public learn the true habits or requirements of the bee.

As a whole, the decision of the Judges gave satisfaction, but in the comb-foundation class it seemed rather anomalous that prizes should be awarded to foreign and adulterated wax in preference to the genuine article, and that the requirements of the schedule were departed from; but a hint from one of the Judges revealed the cause—the cells were too large in the rejected sheets; but as I have a desire to prove all things I immediately applied the rule, and found that the prizetakers were the largest. Perhaps a pair of spectacles will rectify the mistake another year.

A suitable instrument to extract Heather honey has been long in request. This year the Society offered a prize for the best extractor of Heather honey. A screw press with a narrow perforated cylinder and drainer for honey was shown in this class, but the Judge, Mr. Raitt, rejected it on the ground that it was a presser and not an extractor. I could prove that the common extractor is not one either, and I am sorry that what has been proved to be a good and cleanly extractor should be passed over. I will show the difference between honey squeezed by the hand and that pressed by the screw presser. In the former the hand breaks the cells and mixes pollen and honey together, which is liable to ferment. The presser, being more powerful, presses the cells together, forcing out the honey, but not the pollen, the former being preserved in all its purity, while that pressed by the hands is opaque and frothy. People are every day growing more fastidious, and the more generally it is known that gentlemen are encouraging cleanliness amongst cotters and adopting the means to put into the market honey canned ready for consumption without either a clean or dirty hand having touched it, the better will it be for all concerned.

In the honey classes never was there a better display under one roof. There was not a single bad or inferior lot but the pride and centre of attraction of the Show was the octagon supers from the Stewarton hives, clearly proving all I have said in their favour, and of deep frame hives. No matter what interested people may say in favour of oblong hives, they are a mistake, and contrary to the nature and instinct of the bee. There were some imitation supers on the Stewarton principle, but every one of them, by their ragged combs, betrayed the objectionable narrow top bars and open crown of stock hive.

Of dripped honey there was a fine display. Mr. Paterson of Struan competed in the class for Heather honey. This is the first time that Heather honey of the current year has been shown at this Show, and shows that neither Mr. Paterson nor his bees have been idle. The flavour and colour were fine, it being from hell Heather was thinner than that gathered from the common Heath. We were sorry to see such a fine sample denied the prize on the ground that it was not Heather honey, as it was Heather honey with a very fine body and aroma.

Mr. A. Neighbour exhibited several Syrian and Italian queens, as well as some cases of honey drops. The cakes made from honey were exceptionally fine. The wine and beer made from honey, exhibited by Mr. Sword, was really fine and refreshing.

The judges were Messrs. Alfred Neighbour, London; Mr. J. Buchanan, Jamestown; Mr. George Patrick, Gartmore; Mr. Raitt, Blairgowrie; Mr. Armstrong, Bannockburn; and Mr. Bailie, Loughland, Kilmarnock.—LANARKSHIRE BEE-KEEPER.

#### PRIZE LIST.

Best Stock of British Bees—1 and silver medal, W. Sword; 2, W. Munn.  
Best Stock of Cyprian, Ligurian, or any other Foreign Bees—Silver medal, R. McNally; 2, W. Sword.

**HIVES.**—Best Hive for Observation Purposes, all Combs to be visible on both sides, stocked with Bees and their Queen, suitable either for summer or winter use—1 and Highland and Agricultural Society's silver medal, W. Thomson; 2, W. Munn. Most Complete Bar-frame Hive on the Moveable-Comb Principle, with cover and stand complete, stocked with Bees and their Queen, showing Super Arrangements in full operation, or Duplicate Hive—1, W. Thomson; 2, W. Sword. Best Moveable-Comb Hive. This Hive must be exhibited in duplicate—firstly, for summer use, with facilities for harvesting honey; secondly, with arrangements for wintering—1, W. Thomson; 2, R. Steele. Best Frame Hive for general use—1, W. Thomson; 2, R. Steele. For Inventions or Improvements in Hives and Appliances, including the best Divisible Super, the best plan of placing Sections on Hive, and the best Top Feeder—1, W. Thomson; 2, J. Armstrong. Best Straw Hive of any description—1, W. & R. McNally; 2, R. Steele. For the best Hive (Stewarton or otherwise) on the Storing Principle—1, R. Steele; 2, W. Thomson.

**COMB FOUNDATION.**—Best sample of Comb Foundation made of pure beeswax, to consist of ten sheets, each sheet measuring not less than 14 inches by 8 inches; worker cells for stock hive; and ten sheets thin for supers.—1, W. & R. McNally; 2, W. Raitt. Best two samples of Wax, in cakes of not less than 1 and 2 lbs. each, weighing not less than 4 lbs. in all.—1, W. Raitt; 2, R. Steele.

**HONEY.**—Best Display of Honey and Honeycomb.—Highland and Agricultural Society's silver medal and 1 and 2, W. & R. McNally. Best two supers above 20 lbs. each.—1, J. Morton; 2, J. Crawford. Best Super above 20 lbs.—1, W. Laughland; 2, J. Gemmel. Best Super above 10 lbs. and under 20.—1, W. & R. McNally; 2, E. McNally. Best Super of Honey, not being sectional supers, the super to be of wood, straw, or of wood in combination with glass or straw, not less than 12 lbs.—W. & R. McNally. Best twenty-four 1-lb. sections of Comb Honey.—1, C. Carnegie; 2, W. & R. McNally. Best twenty-four 1-lb. sections of Comb Honey.—1, W. & R. McNally; 2, C. Carnegie. Best twenty-four 1½ lb. sections of Comb Honey.—1, Rev. F. Taylor; 2, W. Lowe. Best twelve 2-lb sections of Comb Honey.—1, W. Lowe; 2, L. Tait. Best twelve 1-lb. sections of Comb Honey.—1, W. & R. McNally; 2, D. Liff. Best run or extracted Honey, in twelve 2-lb. glass jars.—1, C. Carnegie; 2, D. Mackintosh. Best exhibition of run or extracted Honey in twelve 1-lb glass jars.—1, C. Carnegie; 2, W. & R. McNally.

**SPECIAL PRIZES FOR LADIES.**—Best Super above 10 lbs. and under 20 lbs.—Mrs. McNally. Best Glass Super of Honeycomb.—Mrs. McNally. Best sample of run or extracted Honey in glass jar containing not less than 12 lbs.—Mrs. Thomson.

**COMESTIBLES.**—Best Liqueur or Wine made from Honey, with recipe attached (not less than 2 quarts), age of wine to be given.—Small silver medal, W. Sword. Best Mead or Beer made from Honey, with recipe attached (not less than 2 quarts).—Small silver medal, W. Sword. Best Cakes made with Honey, with recipe attached (not less than 2 lbs.).—Small silver medal, W. Sword.

**MISCELLANEOUS.**—Best Collection of Hives, Bee Furniture, Bee Gear, for general use, no two articles to be alike or for the same purpose—1, R. Steele; 2, W. W. Young, Perth. Cheapest, neatest, and Best Tray of Supers for producing Honeycomb in a saleable form, and to be complete with glass—1 and 2, R. Steele. Best Honey Extractor, cost to be taken into consideration—1, W. W. Young; 2, R. Steele. Best and Largest display of Honey-producing Plants, in a dried state or otherwise—1 and 2 (silver medal), W. & R. McNally. Best Collection of Natural Enemies of Honey Bees—1 and 2 (silver medal), W. & R. McNally. Best Straw Hive stocked with Bees, to be used at the Driving Competition—1, 2, and 3, James Johnston, Stirling.



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Books** (G. S., Renfrew).—There is much that is good in the work you name, but for present requirements it is practically obsolete. (B. D.).—For economy, conciseness, and comprehensiveness we have no doubt our "Garden Manual" will compare favourably with any other work. This also appears to be the opinion of the public, as the large sale of the work testifies. Its price is 1s. 6d.; post free, 1s. 9d.

**Ferns Eaten** (Sussex).—Slugs are probably the depredators, and if you examine the plants at night with the aid of a lantern you will probably find them feasting. At that time, if you apply perfectly clear lime water, then dust the centre of the patch with soot, you will destroy the slugs and benefit the plants.

**Myosotis dissitiflora** (Idem).—We have grown this plant for years as raised from rooted offsets with the most satisfactory results, and we have also raised hundreds of plants from seeds, which were also satisfactory, but grew stronger than the others. If you have strong seedlings now they will probably answer your purpose, but it is fully late for sowing for raising good early-flowering plants.

**Ivy on Trees** (Idem).—Ivy is injurious to trees by abstracting the moisture from the bark, by sealing the pores, and excluding the air, also, especially in the case of young trees, by preventing the expansion of the sap vessels, and consequently restricting the supply of moisture from the roots.

**Fungus on Onions** (C. B.).—The fungus on the Onions is *Peronospora Schleideniana*, an ally of the Potato fungus. It has been very destructive this year. Spring-sown Onions are always said to be the most affected, and growers say they can prevent the disease by autumn-sowing. As in the Potato disease, no cure is known; sulphur placed on lime might answer, but we have not tried it. The fungus, of course, causes putridity.



**Keeping Tomatoes (H. H.).**—If the fruits are cut when nearly ripe and suspended in a dry room they will keep fresh for a considerable time. In Mr. Iggulden's manual on the Tomato (post free from this office for 1s. 2d.) you will find upwards of thirty methods of preparing and using Tomatoes, some of which may possibly meet your requirements.

**German Wallflowers (Alfred).**—You have done right by selecting the best varieties for seed, and if it is well matured you may expect it to produce plants with good flowers, but not exactly like those of the present year; some may be better and others worse, but the better the flowers which are left for seed-production the better will be the resulting varieties. The seed will possibly not ripen in time for raising strong plants for flowering next year. Those raised from cuttings ought to flower well. They usually pass the winter in a rather dry position, where the soil is firm and not rich; but in rich ground, and moist, the growth becomes so succulent that the plants are often injured if not destroyed by severe frost. We have on several occasions found it advisable to take up the plants in October and plant them in a drier position, such as near a wall, while choice varieties we place in pots and winter in cold frames, the pots plunged in ashes, and the lights drawn off the plants on all favourable occasions.

**Soil for Vine Border (G. P., Hants).**—We should mix the two kinds of loam you have sent, and incorporate with it a twentieth part of the bulk of the chalk of which you have sent a sample, but this should be ground or crushed small, so that it can be readily and thoroughly mixed with the soil; it will be of little use in the form of large lumps. The soil should be dug and the mixing done at once, and the border made in the spring. We should also either dig the sods deeper than those you have sent, or shave off the grass closely, or you will have far too much vegetable matter in the border, which will not be of a lasting nature. If you add also wood ashes or charred refuse of any kind it would improve the compost. We should not make the border more than 5 feet wide the first year, supporting the front with a wall of turves, and as the roots protruded through this we should add another section. As the soil is very turfy and inclined to be light we should make the border rather firm than otherwise, always provided the very important matter of not using the compost in a wet state be attended to. By proceeding on the lines indicated you may make a very good Vine border, and with good cultural attention produce excellent Grapes.

**Training Black Currants (F. G.).**—You will do right by securing to the wall as many of the shoots of the present year as you can without overcrowding, and you may remove any old or unfruitful parts to make room for them. If the leaves of one shoot seriously overlap those of another too many shoots have been retained. Avoid this, and you may expect a good crop of fruit. The small aphid to which you refer is troublesome, and if in large numbers for any length of time injurious. It usually disappears, however, during showery and rather cold weather, and probably it is less abundant now than when you wrote your letter. If the trees are large and numerous there is no practical remedy. Probably the method recommended to another correspondent for cleansing Hops is as good as any for you to try if you desire to extirpate the aphides.

**Cucumbers Exhausted (Anxious).**—Your plants are failing by want of support. The soil is either too dry or impoverished, and the atmosphere of the house may possibly be too dry also. At once saturate the bed with water at a temperature of about 90°, then follow the next day with a similarly copious application of liquid manure, such as the drainings from manure diluted to the colour of pale ale, half an ounce of guano dissolved in three or four gallons of water or soot water; then place on the bed a layer of rich rough turfy soil and manure an inch or two thick, keeping the bed constantly moist afterwards from the top to the bottom. This treatment, with a moist atmosphere and the temperature you name, can scarcely fail to invigorate the plants, which ought to bear abundantly. Cut off the worst foliage, and you will soon have fresh fruitful growths. When roots protrude through the surface add more soil, and the plants may be kept healthy and fruitful for months.

**Cucumbers not Swelling (M. P.).**—In nine cases out of ten when Cucumbers form but make little or no further progress their stubbornness is the result of insufficient support at the roots. The plants may be what is termed "watered regularly"—that is, sprinkled every day; but in truth they are not half watered. The surface of the bed may be moist enough, possibly even too moist, if at the same time ventilation is not sufficient, as under such circumstance the fertilisation is imperfect, and then if the soil is dry below there can only be one result—no good Cucumbers. Pour into the bed as much water as will pass away freely, whether this is one, or three, or four gallons to each square foot. Do not quite close the frame at night, but prop up the lights at the back to the extent of half an inch, increasing the ventilation very early in the morning, and before the sun raises the temperature to the extent of 5°. Close early in the afternoon, watering well, especially in hot weather, and before nightfall again prop up the lights. By early afternoon closing we mean as soon as possible, provided the temperature afterwards does not exceed 85°. With plenty of air the temperature during the day may be 85° to 90°, and the night temperature about 65°, a degree or two more or less not being in any way injurious.

**Washing Hop Leaves (J. R. S. C.).**—Here is the recipe in full, with the additional information you require, and the correction of an error in the quantity first given of softsoap: 64 lbs. of softsoap, 6 lbs. of soda, 6 lbs. of quassia chips, to 60 gallons of water. Put the quassia chips in a linen bag and boil them from three to four hours, then add the softsoap and soda. To 1 gallon of this liquor add 8 gallons of water, mix thoroughly, and apply to the foliage with a water engine or any convenient form of syringe. No soda is used in the later washings when the tender side shoots are visible, as it is then considered hurtful and a probable cause of barrenness. By the persistent use of this wash this season we have repeatedly cleansed the foliage of insects, and now the Hops are clean, vigorous, and give promise of an abundant crop. A sleepy neighbour has not washed his Hops, and has every prospect of a total failure in the crop.

**Packing Grapes (Z. Z.).**—We know of no simpler nor better way of packing Grapes for transit by rail than arranging the bunches in baskets with sloping sides. Some persons use small baskets similar to ladies' work-baskets, and pack a number of these in boxes or crates. Others use stout

baskets with a handle across—what, in fact, are known as butter baskets. These answer admirably, and the handles prevent anything being placed on them, and the baskets cannot well be placed in a railway van in any other than their proper position—a matter of no small importance. In packing the baskets are placed in a slanting position by the operator pressing down one end and raising the opposite; each bunch is then placed in position, the fruit just touching the bottom of the basket, the shoulders being level with the top. The baskets are by some packers, but not all, padded with soft paper shavings, or dry clean moss covered with tissue paper. Nothing is placed between the bunches in packing, but as soon as a basket is filled it is stood level, and if it be filled properly the natural wedging of the shoulders renders the Grapes practically immovable—at least, all that is needed to make them firm may be a soft pad of tissue paper here and there. More depends on the care and aptitude of the packer than of the means he employs for sending Grapes by rail so as to arrive at their destination in good condition. We have seen Grapes sent from the same house in the same baskets a distance of 500 miles, and those packed by one person travelled without any appreciable injury, while those packed by another person were much damaged in transit. Judgment must be exercised in selecting the bunches to occupy the space, so that a second movement is not necessary. Shifting bunches about to "make them fit," first trying one, then another, and turning them about, first placing this side upwards, then the other, are errors to be avoided. Grapes cannot be tampered with in that way without being practically spoiled. A person can scarcely be expected to pack Grapes well on the first trial. It is an art that can only be attained by experience, but some persons, as in other work, are quicker learners than others, and soon become experts in the work. It is most important that those who have Grapes for disposal should learn to pack them well. The finest of Grapes are spoiled by bad packing, and many growers who send Grapes to market, and are disappointed by the comparatively small amounts they realise, would not be so surprised if they could see how different the Grapes were when unpacked from their condition when cut from the Vines.

**Name of Fruit (H. M.).**—The fruit was much damaged in transit, but resembles Nectarine Violette Hâtive.

**Names of Plants (Pen and Ink).**—Your specimen, crushed to a shapeless mass by being simply enclosed in a letter, is, judging by its perfume, perhaps *Mimulus cardinalis*. (Reader).—Your Fern is *Adiantum pedatum*. The brownness of the frond is due to the ripening of the multitudinous spores. These naturally exhaust the fronds more or less, and this with their dispersion mar the freshness of the plant. (J. J., Lancashire).—1, The flowers were scarcely recognisable, but it is probably a fine variety of *Aerides quinquevulnerum*; 2 is *Oncidium luridum*, which must be very fine; 3, *Stanhopea eburnea*, concerning which you will find some remarks on another page; 4, *Dendrobium formosum giganteum*, very handsome, and the *Oncidium Krameri* is one of the finest flowers we have seen. (A Constant Reader).—1, *Ligustrum ovalifolium*; 2, *Crassula arborescens*. (G. J. D., Oporto).—We regret very much that owing to the long distance the flower of *Phalanopsis* had travelled it was reduced to a shapeless mass, and we were quite unable to perceive the peculiarity to which you wished to draw our attention. (O. C.).—1, *Achillea Eupatoria*; 2, *Lythrum Salicaria*; 3, *Achillea Ptarmica* fl.-pl.; 4, *Mitraria coccinea*; 5, A large-leaved variety of *Sedum spurium*; 9, *Tradescantia virginica*.

#### COVENT GARDEN MARKET.—JULY 30TH.

Soft fruit still in good supply with prices unaltered.

FRUIT.							
		s. d.	s. d.			s. d.	s. d.
Apples .. ..	½ sieve	0 0	to 0 0	Oranges .. ..	100	6 0	to 10 0
Cherries .. ..	½ sieve	18 0	0 0	Peaches .. ..	per doz.	4 0	12 0
Chestnuts .. ..	bushel	0 0	0 0	Pears, kitchen ..	dozen	0 0	0 0
Currants, Red ..	½ sieve	3 0	4 0	" dessert ..	dozen	1 0	5 0
" Black ..	½ sieve	3 0	3 3	Pine Apples English ..	lb.	2 0	3 6
Figs .. ..	dozen	2 0	0 0	Raspberries .. ..	per lb.	0 3	0 4
Grapes .. ..	lb.	2 0	5 0	Strawberries ..	lb.	0 2	0 2
Lemons .. ..	case	15 0	21 0	St. Michael Pines ..	each	2 0	6 0

#### VEGETABLES

		s. d.	s. d.			s. d.	s. d.
Artichokes .. ..	dozen	2 0	to 4 0	Mushrooms .. ..	punnet	0 0	to 1 6
Beans, Kidney ..	lb.	0 6	0 0	Mustard and Cress ..	punnet	0 2	0 0
Beet, Red .. ..	dozen	1 0	2 0	Onions .. ..	bushel	2 6	3 0
Broccoli .. ..	bundle	0 9	1 0	Parsley .. ..	dozen bunches	2 0	3 0
Brussels Sprouts ..	½ sieve	0 0	0 0	Parsnips .. ..	dozen	1 0	2 0
Cabbage .. ..	dozen	0 6	1 0	Potatoes .. ..	cwt.	4 0	5 0
Capsicums .. ..	100	1 6	2 0	" Kidney .. ..	cwt.	4 0	5 0
Carrots .. ..	bunch	0 3	0 4	" New .. ..	cwt.	5 0	9 0
Cauliflowers .. ..	dozen	2 0	3 0	Rhubarb .. ..	bundle	0 4	0 0
Celery .. ..	bundle	1 6	2 0	Salsafy .. ..	bundle	1 0	0 6
Coleworts .. ..	dcz. bunches	2 0	4 0	Scorzoneria .. ..	bundle	1 6	0 6
Cucumbers .. ..	each	0 3	0 6	Shallots .. ..	lb.	0 3	0 0
Endive .. ..	dozen	1 0	2 0	Spinach .. ..	bushel	1 0	2 0
Herbs .. ..	bunch	0 2	0 0	Tomatoes .. ..	lb.	0 4	0 0
Leeks .. ..	bunch	0 3	0 4	Turnips .. ..	bunch	0 4	0 0
Lettuce .. ..	dozen	1 0	1 6				



#### HAYMAKING.

THE MANAGEMENT OF GRASS LAND FOR HAY.

(Continued from page 86.)

We have shown, briefly it may be, but nevertheless clearly,



that drainage and the steadily progressive application of manure are both so essential to the profitable growth of grass for hay as to be indispensable. It is the bitter lot of many a home farmer, however, to lack means for the proper treatment of the whole of the land set apart for hay, and in such cases every makeshift means should be resorted to which contributes to the desired end. If a few acres of the aftermath can now be spared from the dairy cows and lambs, put some of the forward beasts which are intended to be drafted for the butcher in October upon it now, and forthwith begin pan-feeding with beanmeal, linseed cake, and decorticated cotton cake in equal quantities, giving 5 lbs. per head daily, increasing the quantity to 7 lbs. in September, and taking care to keep the droppings scattered frequently. Land requiring such special assistance would not carry more than one beast per acre, but that number would materially improve it. We have also practised sheep-folding in winter with excellent results from October till the end of February; the over-age ewes discarded from the breeding flock being there brought on for killing or selling, the fold being changed after the second night, due care being taken to adapt its site to the number of sheep, so that the surface is well covered with manure, which with the urine ensures an early and strong growth of grass in the following spring. Such close feeders as sheep ought never to be kept upon the hay land after February in the south. Early in March stones and sticks should be carefully cleared off, the bush or chain harrow and roller passed over the surface in readiness for the spring growth.

Having some sixty acres for hay we begin mowing the first meadows when the grass is in full bloom, in order that by the time the last meadows are cut the grass may be only just passing out of bloom, so that its nourishing juices may not be wasted upon seed-development. We use a two-horse mowing machine with which enough grass is cut each morning in such favourable weather as we had this year to keep the work going briskly. The machine is thoroughly overhauled in good time, necessary repairs done, and an extra supply procured of driving rods, knife blades, rivets, and other parts which experience has taught us are likely to become broken during the mowing. Then with gear kept clean and well oiled, and a brisk supply of freshly sharpened knives combined to careful driving all has been done to guard against a breakdown that is possible. The importance of well sharpened knives cannot be overrated; a fresh one is always required every hour, and in some instances half an hour is quite long enough. We can tell at a glance if this is receiving due attention by the quality of the work, a blunt or badly sharpened knife invariably leaving a rib of uncut grass along every swathe. The same blemish is also perceptible if any of the pointed knife guards get loose and are turned aside. But if all is in order an even clean cut is made over the entire surface.

The haymaking or tedding machine is in its way equally valuable, and it should in fine weather follow the mower closely, as was done this year. After two or three turns with it the hay is collected into rows with the horse rake, and as this is done many locks of grass are found in every little hollow of the surface still green and untouched by the haymaker. No special distance can be given for the rows, but care is taken only to collect as much hay in each row as the tedder can be passed over, set to back action to open up the nearly finished hay so that the air passes freely through it. The hay is then soon ready for the rick, and on level land another labour-saving machine now comes into play; it is called a hay loader, and is fastened to the back of the waggon, where its revolving teeth take up the hay on to an endless web up to the top of the load, the waggon and machine passing over the row of hay with the wheels on each side of it. It is claimed for this machine that it will send up a ton of hay from the row to the waggon in five minutes. When it is used the horses are driven in pairs abreast instead of in single file to avoid trampling upon the hay. With these implements and an elevator at the rick a considerable saving of time and labour is effected upon large farms, and upon small ones a one-horse mower, and a tedder ought certainly to be had.

Mow with a rising or set fair barometer even if the weather is showery, but do not set the tedder at work till the grass is dry at the top and the weather is really fine, for it will lay uninjured in the swathe for a week or more; but if rain falls upon it after it is bruised and broken by repeated turnings its most valuable juices are lost, slight fermentation not unfrequently begins, to the destruction of sugar and albumen, both properties of the highest value in the hay. By putting half-made hay into cocks we have preserved many a ton of it from being spoiled, our only care being to see that it is dry when made into cocks, and, however nearly ready for the ricks when so treated, never to put it upon the waggons before it is again opened out and turned out

once or twice, then with due care to prevent overheating in the rick there need be no spoiled or musty hay.

#### WORK ON THE HOME FARM.

*Hand Labour.*—Corn is fast changing, the grain in the southern counties being fully grown, and the ripening has begun. Winter Oats and Barley are ready for the reaper, and are both an excellent crop in grain and straw, and cutting should be pushed on in all favourable weather. These autumn-sown crops are eminently worthy of the attention of the home farmer, affording him a supply of corn fully a fortnight before the spring-sown crops, or they are turned to good account in April for a supply of green food of great value when roots are scarce, ploughing for Mangolds following the cutting or folding with sheep. Or the plant may be left after the folding to make fresh growth and afford a fair crop of corn. Some of the earliest-sown Peas are ready for cutting and must have immediate attention, for if left uncut after full pods and changing colour betoken full development there will be much risk of loss. If the weather proves showery after the cutting see that they are turned carefully to avoid sprouting. The Swedes are growing away nicely from the flea, and the crop is now safe, although it will probably prove a light one. Hoeing and thinning is being done as fast as possible; it is unavoidably late owing to the severe check the plants received from the drought and the flea. Mangolds are receiving the last hoeing, and the leaves will soon meet across the rows. Lateral growth is coming freely upon the Hops, and the appearance of some of the aphides renders continued washing necessary. Soda is now left out of our mixture, as it is considered hurtful to the tender young foliage of the laterals; much barrenness have been caused by its indiscriminate use in former years.

*Horse Labour.*—The second crop of Clover and Rye Grass will soon be ready for the mowing machine. Foul land cleared from winter Tares and Trifolium is ploughed, and is now being cleaned of couch grass. Some poor pasture required for arable land is being pared, and the horses are followed as closely as possible by men making turf fires. The land is thus not only rendered cleaner and many insects destroyed, but a fertilising dressing of ashes obtained, admirably suitable for the crop of Oats to be grown there next season. We have tried both this plan and ploughing-in the turf, and have ample reason to be in favour of the turf-burning, the crop being thereby quite doubled.

*Live Stock.*—No meadow should be without large open lodges to afford shelter for the cattle from extreme heat and flies, as well as from heavy rain. A little attention to the habits of cattle will soon show how grateful they are for such shelter. Such lodges are also of infinite value for sheep in autumn and winter, and the necessary expenditure for building them will prove a sound investment, many a valuable animal being saved from disease by means of them.

*ENO'S FRUIT SALT.*—The hearing of the suit "Eno v. Davies and another," in which the plaintiff, who is the proprietor of Eno's Fruit Salt, sought to have W. Davies and James Channon, of Goulbourn, restrained from using a trade mark with the title "Australian Fruit Salt" thereon, was concluded on June 11th before the Primary Judge. The defendants were ordered to take the trade mark for Australian Fruit Salt off the file, and to refrain from using such title on any other commodity, and to deliver up the certificate of registration of the title. The proceedings were taken at the instance of Mr. J. C. Eno, of Hatcham, Surrey, England, whose evidence and that of his manager furnished some interesting particulars as to the success of Eno's Fruit Salt, as well as the amount spent in advertising to attain publicity. The defendants have now to meet a claim for consequential damages, which will be tried as an issue in the Jury Court. They have to pay the costs of the suit up to the hearing.—(*Sydney Morning Herald*.)

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1884.  July.		Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.	On grass.	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday .....	20	30.129	60.4	54.7	N.	61.6	69.8	47.7	102.0	41.7	0.018
Monday .....	21	29.967	62.1	60.1	E.	61.6	69.8	56.6	97.4	50.3	0.103
Tuesday .....	22	30.29	65.7	61.4	N.	61.2	73.8	52.2	114.4	47.6	
Wednesday .....	23	29.911	61.4	58.9	S.E.	62.0	72.1	60.3	117.1	57.8	0.010
Thursday ....	24	29.762	63.3	55.9	S.	61.6	67.5	49.4	113.3	45.5	0.080
Friday .....	25	29.950	58.6	53.8	N.E.	60.8	68.5	47.4	113.9	44.0	—
Saturday ....	26	30.154	57.4	50.7	S.E.	63.0	63.8	42.2	91.4	35.7	0.274
		29.986	61.3	56.5		61.7	69.3	50.8	107.1	46.1	0.480

#### REMARKS.

20th.—Fine, but rather hazy early.  
 21st.—Dull, with misty rain at intervals and heavy shower at 5.30 P.M.  
 22nd.—Dull and cloudy, with spots of rain.  
 23rd.—Overcast early, then fine.  
 24th.—Variable; heavy thunderstorm about 11.30 A.M., frequent lightning in evening.  
 25th.—Generally cloudy.  
 26th.—Fair morning, showers afterwards, heavy in evening.  
 A much cooler week, the temperature being now several degrees below the average. The minimum on grass on the morning of the 26th is the lowest in July for at least ten years; for although 32° was recorded in 1877, it was solely due to the thermometer being buried under a heap of hailstones, and was not a true radiation temperature.—G. J. SYMONS.





## COMING EVENTS

7	TH	9TH SUNDAY AFTER TRINITY. Royal Horticultural Society's Fruit and Floral Committees at 11 A.M. Eastbourne Show. [Cottagers' Show].
8	F	
9	S	
10	SUN	
11	M	
12	TU	
13	W	

## OVERCROWDING.

**T**HE overcrowding of plants, trees, and crops is, perhaps, the greatest and most common of all the mistakes that are made in the routine of gardening. Examples of half a dozen plants being packed in a space where there is only properly room for one; of growths of fruit trees struggling with each other for the light and air they cannot obtain; of Vines interlaced so that it is utterly impossible for the foliage to develop and perform its functions; of Cucumbers and Melons forming a bramble-like thicket; of Peas bundled together as if each plant should be limited to the smallest possible single stem; of Turnips, Lettuces, and such plants choking each other in the seed beds; of Broccolis and Winter Greens drawn as if it were a virtue to make the stems tender for enduring the winter—examples of all these are to be seen every year, not in a few but in many gardens. In fact, it may safely be said that in more than half the gardens in the country the only crops that are not overcrowded are Mustard and Cress.

The evils of overcrowding are manifold. They involve a waste of seed and of plants, also undue impoverishment of the soil, and in the end a waste of labour, for when a garden is suffered to become overgrown with what cannot be used a much greater expenditure of time is requisite to render it presentable than if a better considered and more intelligent system of culture had been pursued.

Most persons agree that masses of weeds flowering in gardens do not betoken good management. They are objectionable in spoiling the appearance of a garden, but more so because they are robbers extracting the virtues from the soil that might support useful or enjoyable crops. What better are waste crops and superfluous growths than weeds? They are no better, but are equally robbers, more or less unsightly, indicating a great want somewhere. There is no doubt whatever that it is absolutely impossible to prevent the growth of weeds in many gardens, because of the great extent of surface and the limited means allowed for keeping it in order. Under such circumstances the overcrowding of certain crops is, perhaps, in some degree inevitable. But admitting this, it must be said that in cases innumerable it is preventible.

"A gardener's life is a pleasant one" is the remark of many an onlooker. No doubt this is so in several instances, but the life of many a man engaged in gardens is a life of labour and anxiety, to which an earnest, intelligent, competent, and industrious man ought not to be subjected. He must, however, endure it, and for the same reason that land is wasted by growing weeds—namely, overcrowding.

There is an overcrowding of men as well as of matter, and yet the manufacturing of gardeners appears to go on as briskly as ever. It is a mistake. It is a mistake for parents to press their sons into gardens, a mistake for those gardeners who have the power to have fresh batches of young men every year or two, then to send them dancing away with a mere smattering of knowledge, but wise, perhaps, in their

own conceit. The want of the day is fewer men and more competent. This would be better for all—the men who escape from the "profession" and those left in it, and also for the employers of these.

The overcrowding of men who have been half-trained in gardens is a great and painful fact, and it has led to this strange state of things that if a gentleman wants a gardener he has no confidence that he will procure one to give satisfaction. There is no exaggeration here. The system that has led to this anomaly is obviously wrong. There are too many draftings of youths—the sons of tradesmen—into gardens to do work that might be equally well done by labourers on estates, while these men would have the chance of working contentedly at home instead of being impelled to seek fortune and find misery in already overcrowded towns, which they find easy to enter but difficult to leave.

But to overcrowded crops. A great want amongst gardeners is a capacity for estimating correctly what is required. The result of this is that they raise far more than is needed, forgetting that this surplus is waste or useless, and as exhausting as weeds. They make work for themselves and for others that might have been avoided. They fritter their resources over too wide a field, and attempt what they cannot possibly carry out well. Things are started that cannot be finished, and there is driving and confusion and overcrowding all round.

Another want is a lack of promptitude. A man who is not well grounded in his calling is naturally hesitating in his action. He appears to be unable to make up his mind to strike when the time has come for fear he may be wrong. He cogitates, wavers, procrastinates hour after hour and day after day until the moment passes when he can act effectively. That is one of the most fruitful of all sources of overcrowding in gardens, which has often such unfortunate, not to say disastrous, results. There is a time for doing work the most quickly, easily, and in the best manner. Let that time pass, and obstacles accumulate with increasing force every day. This applies to work of all kinds—mowing, weeding, hoeing, planting, thinning, pruning, watering, potting—everything. Every gardener of a quarter of a century's experience knows the truth of this. Mow the lawn to-day, and it will not take half the doing that it will a week hence, and the more quickly it is done the better will be its appearance. See that tinge of green on land and walks—myriads of weeds just showing themselves. They are small yet. Let them alone to-day, to-morrow, and so on till the rain comes and continues. What then? This: it will take a week to remove the weeds that at first might have been destroyed in an hour.

Look at those upspringing crops of Carrots and Turnips and Beet; they are ten times too thick—a mistake in sowing—but will stand another day, and another, but next they are spoiling. No time spent in thinning now can make the crops so good as if the right moment had been seized, while at least thrice the time must be spent in the work that would have sufficed then. And what are all these plants doing, Broccoli, and the like, tall and crowded in the seed beds? No land ready? Then the seed was sown too soon—a fault in calculation. But too often the land is ready and the opportunity for planting allowed to slip by when weeks of dry weather follow, and what might by prompt action and an hour or two's brisk work have been done well can scarcely be done at all. It is so with everything. Peas, if left to fall over in the rows before staking, never succeed well, while much time is spent in putting them straight that would not have been wasted had the work of staking been done promptly at the right time. Then there is waste of material in the vegetable quarters, and further waste of time in putting them right. Why are those headless Cauliflowers and running Lettuces left to luxuriate? Could not the plants of the former have been pulled up or used instead of being beheaded? and could not the superfluous rows of the



latter have been more quickly removed in a small than in a large state, and the fertility of the soil conserved instead of uselessly abstracted?

Then we have Vines in the spring and fruit trees bristling with growths. They are allowed to extend day by day, while eventually it is imperative that something must be done. An hour with the finger and thumb in disbudding promptly would have saved ten hours of pruning long delayed, while the earlier and quicker work is infinitely more satisfactory than the later and slower. Half an hour's finger-and-thumb work among Vines, Peaches—indeed, all kinds of fruit trees, also Melons, Cucumbers, and Tomatoes—in preventing overcrowding is immeasurably more efficacious than any amount of after cutting. By the first process an evil is averted, by the last it is incited, and a remedy must of necessity be sought which in itself is often, when roughly and hurriedly applied, almost as bad as the evil it is intended to cure.

It is little short of deplorable to see the overcrowding that is permitted, and which, by foresight and promptitude, might have been prevented in gardens. A few extra hours in early morning and in the cool of the evening at a critical time may make all the difference between confidence and distrust, comfort and disappointment, success and failure. "It is easy to preach," does some one whisper? "but what about practising?" Just this: it is only by years of practice that the truth of what is stated has been proved. It is the outcome of long experience; of years of labour, early and late; the lesson taught by many a struggle and many a failure, but at last success.—AN OLD GARDENER.

#### EXHIBITIONS FROM THE EMPLOYER'S POINT OF VIEW.

In your issue of July 24th of the current year I notice an excellent article on the subject of exhibitions from the pen of Mr. W. Iggulden. He writes chiefly from the employe's view, and I wish to show that his arguments hold equally good from the other side. My chief excuse for reiterating almost all that Mr. Iggulden says must be that what I write comes from an employer, who might possibly look at matters in a different light.

On the broad question of exhibitions in general there can be but one opinion. The quality of every article, both of commerce and luxury, has most undoubtedly been improved by the exhibitions that have been so frequent and so common of late years. There is not within my knowledge a single commodity produced in any trade or in any art that has not felt the beneficial stimulus of public competition. I see no reason why it should be otherwise with garden produce. Did the principle of exhibitions require any apology I could enlarge on the subject more than you or your readers would care for, but where the practice is universal the principle seems to require no defence, and if gardeners are not to be allowed to exhibit, how are we to have horticultural exhibitions? So much for the broad question.

I have frequently been argued with by friends as to my admitted favour towards exhibitions, local and otherwise; and Mr. Iggulden has touched nearly every argument used by my well-meaning friends. He has, from his point of view, refuted these arguments, and I may at once say that his reasoning is so impartial as to hold good from my point also. A favourite plea of my friends against exhibitions is the damage done to plants in the journeys to and from the show hall. It would be a truly remarkable preparation for a plant intended to take a prize to damage it in transit. Another dissuasive argument is that the gardener times his plants so as to be at their best at show time. I would rather see a really fine bloom at one time than my plants and flowers coming to perfection by dribbles, so that to find a really fine specimen one must wander through a thicket of faded or immature plants. This is not an argument against a proper succession of plants and fruits, which I consider the acme of gardeners' ability, because there is a limit to all things, and no one is likely to show every plant on his place; and the plants not intended for show can be worked on proper successive principles. Mr. Iggulden mentions the argument of light cropping in order to secure heavy fruits, and he specifies Grapes and Melons. He says nothing is gained by light cropping of these fruits. I am under the impression that weight of bunch, size of berry, and weight of fruit would be gained by light cropping, but my gardener could answer the question better than I. However, if an employer takes no interest in Grapes, Melons, and Peaches, and if he does not watch his gardener's goings on, and if he is foolish enough to have no idea of what crops his plants ought to

carry, all I can say is he does not deserve to have a garden nor a gardener. Again, I have a sufficiently high opinion of human nature to believe that most gardeners would study the interests of their employers to some extent, and after all the master has the remedy in his own hands about forty days before the 11th of November. If men of such respectability and education as gardeners usually are cannot be trusted in such a matter there is an end to all comfort for employers, and a cessation of all the understanding that ought to exist between man and man.

With regard to large specimens which, with Mr. Iggulden, I admit are apt to become a nuisance, I think I could suggest a remedy for that complaint. In the first place, I am not sure that there is so much merit in a large specimen of anything that grows. Size means generally age, or room. A large-foliage plant or Orchid means simply that it has lived several years, and that the owner or grower has a house large enough to hold it. In local shows at least the space allotted for exhibits should in all cases be restricted, and quality more considered than quantity. The craze for gigantic Grape bunches is fast dying out, and my experience of such monsters is that they are useless for all purposes other than for showing at a few exhibitions. If judges would in all cases award prizes to exhibits for quality at the expense of size this argument against shows would fall to the ground.

In encouraging my gardener to exhibit at local shows I have another aim in view, that of encouraging others to spend some time in a pursuit so healthful to body and mind as gardening. To persons engaged in sedentary occupations all outdoor pursuits are invaluable, and gardening has the merits of cheapness, intelligence, and hygiene. Shows not only encourage such persons to outdoor work, but they help by prize money to pay what might be a burdensome expense. Where will one find a village so pretty or so healthy as where there is an annual show of produce from the gardens? Did not the prizes offered by a certain railway company at once have their effect by the beautifying of every station on the line?

But I would venture to offer a few words of advice to gardeners on the subject of local shows. In the first place, don't be greedy. Don't show every plant, fruit, and vegetable in your garden, but let there be moderation in all things. And especially you gardeners who have large establishments, be careful not to discourage others by wholesale sweeping away of first prizes. "As you are strong be merciful." It looks greedy, and it is greedy. What we want is encouragement to our art, and not discouragement to our weaker artists. Show only what is of the very best quality intrinsically, not merely what will surpass other people's exhibits. Lastly, remember that you have a trust imposed upon you, and that your duty is to do your best for your employer, as you have a right to expect from him the best terms of which you are worthy.—EMPLOYER.

#### NOTES AT KEW.

THE rather severe drought earlier in the season followed by the recent heavy rains has caused gardens generally to assume an aspect that is unpleasantly suggestive of the fast-approaching autumn. Even Royal Kew is not exempt from this depressing effect, and where all was bright and beautiful a few weeks ago there is now a comparative dullness; and in the herbaceous ground, which usually furnishes so many attractions during the summer months, the supply of flowers is clearly on the wane. The trees, however, which have been uncommonly handsome this season, are still beautiful; and a walk through the arboretum, a portion of the gardens that quite escapes the attention of the ordinary visitor, would yield much pleasure to any real admirer of arboreal beauty. Some jottings upon this department must, however, be reserved until another occasion; for the present we will take a glance at the houses and a few of their more notable inmates.

THE WATER LILIES.—The old Lily house near the Palm stove is now devoted to these charming aquatic plants *Nymphæas* and a few other plants of similar habit, and the large circular tank has a charming appearance in early morning, some scores of handsome flowers being expanded. The condition of the plants proves conclusively that their requirements are carefully studied and provided for, and generous treatment in the matter of soil and manure has resulted in the production of grand leaves and large well-coloured flowers which rise strongly above the surface of the water. It is intended, I understand, to keep this house open during the whole of the season, and to render this practicable it is now heated independently of the Palm stove by a boiler placed in the rear. Many disadvantages attended the former system, as, owing to the distance the pipes had to be taken underground, a considerable loss of heat was incurred, and in consequence the temperature of the house in cold weather was often dangerously low. It was chiefly upon this account



that the *Victoria regia* was transferred to the oblong tank in the new range, where there is a better command of heat.

The *Nymphæas* which most attract attention are the following. Several varieties of *N. Lotus* are very beautiful, especially so being *Ortgiesiana*, which has handsome large bright rose-coloured flowers and dark foliage. *N. devoniensis* is also given as a form of *N. Lotus*, and is bearing its large rich red flowers very freely, the foliage being also attractive with a distinct shade of red, and contrasts well with the green-leaved varieties. *N. Lotus* var. *dentata* is a well-known favourite with massive finely proportioned pure white flowers and regularly dentate leaves, a small companion being the variety *thermalis*, which also has white flowers, while the dark-coloured *N. Lotus rubra* must certainly not be omitted. Perhaps one of the most generally admired is *N. stellata* var. *zanzibarensis*, which has flowers of a most lovely blue tint, and they are produced in such numbers that they have a charming effect with the red, rose, and white flowers of the other varieties.

**NYPHÆA GIGANTEA.**—Probably the grandest of all the *Nymphæas* is *N. gigantea*, though it has never been my good fortune to see it in flower, and doubtless many other admirers of these plants are in similar ignorance of its beauties. A fine figure was given of this species in the "Botanical Magazine," May 1st, 1852, accompanied by some remarks upon its history which are worthy of reproduction. "During the early part of the present year (1852) seeds of an Australian *Nymphæaceous* plant were in the hands of several cultivators in this country as a new *Victoria*, *Victoria Fitzroyana*, with flowers of a purplish blue, from what source obtained I have not been able to ascertain. Those which were obligingly presented to us by Mr. Carter and Mr. Stokes under that name were, we think, not the seeds of a *Victoria* but of a *Nymphæa*, and were so crushed in a letter, and sent dry, that we have no hope of their germinating. Now it does happen that we received during the past year specimens of a magnificent new *Nymphæa* from our friend Mr. Bidwill, gathered in the Wide Bay district, North-Eastern Australia, some of whose flowers certainly vie with the ordinary ones of *Victoria regia*, being a foot in diameter, and not of a purplish blue colour, yet blue—the blue, as it would appear, of the well-known *N. cœrulea*. We are much disposed to think that this is the plant producing the seeds in question, and that the plant, having been known to other colonists in Australia, the seeds have been by them sent to their friends in this country under the name of *Victoria Fitzroyana*. Mr. Bidwill is too good a botanist to have done so. Be that as it may, we deem it a matter of duty now to lay a figure and description of our magnificent plant before the public, and even a coloured figure, for so beautifully are the specimens dried by our valued friend and correspondent that we think we cannot err much on that point."

In the description which follows these remarks the leaves are said to be 18 inches to 2 feet in diameter, the flowers exceeding a foot across, and an opinion is expressed that the plant will become a favourite wherever tropical Water Lilies are grown. Thirty-two years have elapsed since these remarks were written; yet we have but little of what must be an exceedingly beautiful species.

**THE SACRED BEAN.**—In the angles of this house, as all visitors have noticed, are beds devoted to tropical swamp plants, and in these the remarkably distinct and handsome *Nelumbium speciosum* is growing most luxuriantly, and never have I seen the grand circular shield-like leaves so fine as they are this season. Some are over 2 feet in diameter, of that peculiar glaucous green colour and strangely formed surface which causes water placed upon them to run in little globules resembling quicksilver. The curiously honeycombed fruits also have an attractive appearance, and it is frequently remarked that they are more like artificial than natural productions. The handsome *Nelumbium luteum* is also grown at Kew, but I understand that to Mr. Lynch of the Cambridge Botanic belongs the credit of first flowering this species, which he quite recently succeeded in doing.

**THE MONTE-VIDEAN ARROWHEAD.**—A familiar plant in some districts of England is *Sagittaria sagittifolia*, which grows in moist positions or at the margins of ponds and rivers, producing fine rich green foliage resembling an arrow head in form, and spikes of white flowers. It is by no means devoid of beauty, but its charms are far surpassed by those of its near relative from South America, *Sagittaria montevidensis*, of which several plants are now grown in the Lily house. The leaves are of similar shape to those of its British cousin, but larger, and the spike of flowers rising to the height of 3 or 4 feet is really handsome. The flowers individually have been aptly compared to the Gum Cistus to which they bear a close resemblance in all points, including the peculiar flimsiness or crumpled appearance

of the petals, though the number of the latter is three instead of five as in the *Cistus*. They are white with a circular blotch of maroon at the base of each, and a central tuft of yellow stamens—a pretty contrast. A strange fact is observable in connection with this plant, for of the two specimens grown in the house one is in a pot plunged in the tank, and the other is in one of the swamp beds before referred to. The latter has been supplied with more manurial assistance than the other, and has grown most vigorously, being at least three or four times the size of the other in stem and leaves; but curiously enough the flowers do not appear to have shared the increased strength in the slightest degree, for they are the same size as those on the plant in the tank.—VISITOR.

#### MILDEW ON PEAS.

SOME Peas are said to be so hardy in the constitution as to be able to resist all attacks of mildew, but I have never seen one of them. Some varieties appear to be longer in being affected by it than others, but it is not a question of variety so much as one of cultivation. I have never seen any Peas mildewed in April or May, but I have seen it appear in June, and very bad in July and about this time. In my opinion the whole cause of it is dryness at the roots. It is not for the want of manure, or deep soil, or rich soil, or anything of that kind, as some of our rows have not been deficient in any of these respects, but we knew they were dry at the roots. Some well-fed rows make large stems and leaves, so much so that they protect the soil in which the roots are growing, like a thatched roof; consequently it becomes very dry if not copiously watered artificially, and for this we have not always time.

Some rows which we may have watered thoroughly for a time and then discontinued have shown signs of mildew in a few weeks, while others close at hand that continued to be watered never showed any. Watering, then, with no unstinting hand is the best of all preventives for mildew on Peas. It will prevent it from coming, and it will check it after it has begun, and all who wish to avoid mildew must keep a sharp eye to the watering in dry weather, but surface watering, or any kind which will not reach the lower roots, is useless. I may say for the information of those not well acquainted with mildew that it has the appearance of being a very delicate white powder, and it appears on the leaves and stems under this guise, and although it looks bad I cannot say that I regard it as very injurious to the edible part of the Pea.—J. MUIR, *Margam*.

#### ORCHID NOTES.

**CYPRIPEDIUM VEITCHII.**—It would be difficult to select from amongst the numerous *Cypripediums* one more beautiful when in flower than the subject of these notes. The flowers are large, and the markings and spots on the sepals clear and distinct, which render the flowers more interesting and conspicuous than those of many Orchids. No variety will flower with greater freedom and certainty during June and July, the flowers lasting in good condition in a heated moist structure fully ten weeks from the time they are developed. They last a fortnight longer in a cool house, and can with advantage be used in such structures, for the plants afterwards grow with increased vigour and luxuriance. This species can be used with safety and without the slightest injury in dwelling-rooms, providing no gas is employed. I do not advise the plant to be employed in rooms for the whole of its flowering period, but two or three weeks in such a position will not prove injurious to the health of the plant. When so used the foliage should be sponged once a week. It is dwarf and compact in habit, and therefore admirably adapted for room-decoration, because the flowers are produced on short stems not more than 10 inches or 1 foot in length. Even when not in flower *C. Veitchii* is attractive, for very few *Cypripediums*, if any, have more beautiful foliage, the leaves being pale green freely blotched with green of the darkest shade.

This species is a good grower, and increases rapidly. It is easy to manage, and none can be cultivated with a greater certainty of success. It grows well in pots or pans liberally drained, and in a compost of half sphagnum moss and peat fibre, with lumps of charcoal freely intermixed. While growing abundance of water should be given; not even during the resting period should it suffer from an insufficient supply. Weak stimulants may with advantage be given to plants that have their pots filled with active roots. It likes a good supply of heat and moisture during the growing season. The temperature during summer should range at night from 70° to 75°, with a rise by day of 10° or 15°. The winter night temperature should be 60° at night, with a corresponding rise in the day. It can be grown successfully in a lower temperature, but will not increase so rapidly in size. This Orchid can be grown during the summer in a vinery, and therefore is more suitable than many for cultivators who have no Orchid house proper.—W. B.



ORCHIDS IN FLOWER AT WESTBROOK, SHEFFIELD.—Although this is a time when comparatively few Orchids are blooming, there is still a very good display at this garden, as the following list will testify. *Cattleya Dowiana*, *gigas*, *Mendelli*, and *Leopoldi*; *Cypripedium niveum*; *Disa grandiflora*, with eight spikes; *Epidendrum vitellinum majus*, several plants, the largest of which is carrying fifteen spikes, and is a beautiful densely flowered specimen; *Lycaste Skinnerii*; *Mormodes pardinum*, very fragrant; *Masdevallia ignea*; *Odontoglossum Alexandræ* (a white-flowered form), *Warneri*, *Bluntii*, *crispum*, *Rossi*, *maxillare*, *Roezli dentatum*, *Lindleyana*, and *vexillarium*; *Dendrochilum filiforme*; *Phalaenopsis grandiflora*; *Thunia alba*; *Vanda teres*, two plants one with five spikes of four blooms each; *Vanda tricolor*, a fine plant, two spikes; *Dendrobium heterocarpum philippinense*. Several large plants of *D. nobile* will also be in bloom in a few days.

The collection of Orchids at Westbrook is fast improving both in numbers and in condition. Mr. Wilson has for some months past been adding to his fine collection numbers of rare and choice varieties, and in his endeavours to thus improve his valuable stock he is most ably supported by his skilful gardener Mr. Pidsley.—W. K. W.

#### SUMMER TREATMENT OF PEACH TREES.

I AM very particular what treatment my Peach trees receive throughout the winter and spring, as this has really the least to do with their having good crops of fine fruit; but the same cannot be said of their summer treatment. This is of vital importance. If they are only well grown in summer, fruiting in spring will follow as a natural result, and it would be well if Peach-growers, especially amateurs, would observe this. No amount of care in protecting puny ill-developed blossoms in spring will ever insure a fine crop of fruit on a poorly grown and badly matured tree, but have the wood well ripened by the autumn and full of the best buds, and then a crop will be formed in defiance of the weather, which would kill the weak blossom on the badly summer-grown tree.

Now is the time to make good trees. The wood is still growing and swelling, and capable of being made the most of. Crowding the young shoots together is ruinous. There is nothing worse for them in summer than this. Allow every branch formed this season to have a place of its own room to swell and full liberty to enjoy the sun heat, and then look out for Peaches the following season. We are all too much afraid of cutting and pruning in summer. Wood is left in excess in case of accident to some of the branches, but it is just this surplus wood which causes the accidents or failures.

Where disbudding was done with a miserly hand in spring let the spendthrift step in now, and improvement will soon follow. Cut away all superfluous shoots close to the old wood. Where young shoots or lateral growths are being emitted on the young wood, as is often the case with very strong shoots, let all these "twigs" be cut off close to the base. They are not wanted. Very long shoots of this year's formation may have the top taken off them if they have no more room to go forward, but if they have this do not stop them. All curled leaves should be taken off, and only fresh clean ones allowed to remain. Wherever there is any signs of red spider or thrips turn the syringe or garden engine on them without mercy. Trees which are sickly will hardly be cured by any treatment which can be given to the branches, but a thorough examination of the roots will expose the evil, and then remedy it as the character of the case may dictate.—A KITCHEN GARDENER.

#### PRESENTATION TO MR. A. F. BARRON.

It will be remembered that a few weeks ago, on returning from his duties at the Royal Horticultural Society's Gardens at South Kensington, accompanied by his niece, Mr. Barron was the subject of an attack by those trained ruffians who are ever on the look-out for a victim, and was relieved of the beautiful watch that was presented to him as a memento of the Apple Congress that proved such a great success at Chiswick last autumn.

While it was felt that nothing could possibly compensate for a loss so serious, still his personal friends, including his co-officials at the "Healtheries," considered that their sympathy should be shown in some practical manner. The subject was no sooner mooted than funds poured in, and in a very short time a sufficient sum was forthcoming to purchase another gold watch of at least equal value to the one lost, with a "little over," which is to be devoted towards purchasing a gift for Mrs. Barron.

This watch, a very handsome and valuable one by Frodsham, was presented to Mr. Barron on Thursday last at a dinner, which was not only provided by the great caterers Messrs. Bertram & Roberts, but was generously given by them to as many of the subscribers to the presentation fund as could attend the club dining-room at the Health Exhibition. Under these circumstances it need scarcely be said that the repast was a splendid one. It must be observed that the whole affair from beginning to end was a surprise to Mr. Barron, who was not aware until the middle of the dinner of the object of the gathering, and this information was conveyed in the form of a congratulatory telegram that reached him half an hour too soon. Mr. Barron was induced to attend a "little dinner" given to a few friends by Mr. Roberts, of the firm mentioned. Mr. Somers Vine, the London agent of the Health Exhibition,

presided, Mr. Unite, who was, perhaps, the originator of the presentation, occupying the vice-chair.

In a very appropriate speech, the chairman observed all but one individual in the room knew the object of the gathering. He then announced what had been done, and called upon Mr. J. D. Dick, the treasurer of the fund, to read the list of subscribers. In doing so Mr. Dick stated the pleasure it gave him in assisting in the work, and warmly acknowledging the invaluable aid that had been rendered by Mr. Unite and Mr. Richards. This list, minus the amounts, was with the watch handed to Mr. Barron by one of his oldest friends, Mr. Maurice Young, in well-chosen terms. Mr. Barron, in accepting the gift, remarked that the surprise was as complete as it was gratifying, as he had not the faintest idea nor remotest suspicion that anything affecting him was in progress when he entered the room. He referred to the grievous loss of the much-valued gift of his pomological friends, and would, with the aid of Superintendent Hambling, of the B Division of police, who was present, endeavour to take better care of what had so unexpectedly, and he felt undeservingly, been placed in his hands as a mark of goodwill and friendship that he should never forget. A few other complimentary "after dinner speeches" brought to a close the proceedings of a most agreeably-spent and interesting afternoon.

#### GRAPE MUSCAT TROVEREN.

In reading the excellent article of Mr. Iggulden on "What to Exhibit," the thought occurred to me that he might be able to give me some information respecting the Muscat Grapes that I have under the name of Muscat Troveren. I have never seen it grown, and several gardeners that have visited me have not seen it anywhere in this neighbourhood. It is a robust grower, with large bunches, but not over-large berries, and with me is liable to crack very much. I should like to know what is the opinion of your correspondent as to its quality for exhibiting supposing it to be staged with Muscat of Alexandria.

I have forwarded you a small bunch of Venn's Black Muscat, also leaves of the Troveren and a few berries. Venn's Black Muscat with me does not swell its berries very regularly; in fact, owing to that I have been recommended to remove it, or inarch some other Grape on the Vine. I have some good Black Muscat growing near Venn's.

The opinion of some of your valuable correspondents relative to the Grapes named will be very welcome.—A. J. B.

#### CAMPANULA BALFOURIANA.

THIS very distinct and pretty plant is one which is likely to become popular, and certainly adds another gem to the already large number of beautiful plants known as Harebells. The subject of these remarks was raised and sent out by Messrs. Dickson & Co. of Edinburgh (to whom the writer is indebted for information freely given respecting it), and is the result of a cross between *C. turbinata* and *C. pulla*, the latter being the seed parent, and may be said, "broadly speaking," to have the flowers of the latter with the habit of the former parent. The following description, made from plants flowering at present in Messrs. H. Cannell & Sons' nursery at Swanley, will, it is hoped, give a clear idea of the plant. Radical leaves broadly cordate, with bluntly notched margins three-fifths of an inch long by half an inch in breadth; petioles very slender, three-quarters to an inch long, covered sparsely together with the leaves by soft hairs, giving the foliage a slight tinge. Stems erect, 3 inches in height, bearing on the lower half. Leaves broadly elliptical, with sharper notches than those of the radical ones, half inch in length, on footstalks half to three-quarters of an inch long. Flowers solitary, pendulous, but not forming so acute an angle with the stem as those of *C. pulla*, broadly campanulate, three-quarters of an inch long by five-eighths of an inch in diameter, divided in five broad lobes, which are very shallow, and have a slight outward inclination. The whole flower of the same rich deep purple as the seed parent. As far as at present observed, it does not seem to produce seed. The general habit and appearance is that of *C. turbinata*, except for its producing underground stems, by means of which it may be easily increased. The first blooms appear early in June, and now, July 30th, it is as full of flower as ever. It seems to prefer a half-shady position on the rockwork.—G. GUTHRIE.

#### ROSES.

##### EARLY VERSUS LATE PRUNING.

AT page 70 "S. W." invites discussion on this subject. I will record my experience, more readily so from a practical point of view, because ours differ entirely from those of which your correspondent speaks. All our Roses were shortened as usual about the middle of November to something like 18 inches to 2 feet from the ground, in order to lessen the damage from high winds, and also induce rest. This season all the bloom and display possible was required by the 19th of June, therefore it was decided not to prune our collection in the Rose garden, but simply to thin out all crowded and weak wood, shortening, perhaps, a few extra long shoots early in March. They commenced growing early and very vigorously, although considerably checked by cold winds late in spring. Fortunately, having no frost to injure them, they gradually progressed, and





Fig. 20.-LARGE ROSE LEAVES.



at the time required (June 19th) were beginning to open freely blooms of fair quality. The first week in July saw them at their best—simply one great mass of magnificent blooms both in size, colour, and substance. With a heavy covering of spent bark over the beds they remained in good condition longer than usual, notwithstanding the extremely dry weather, having, of course, occasional liberal supplies of water. I enclose sample of foliage for the Editor's inspection. I think the middle or end of March late enough to prune even so far north.—E. BURTON, *Kirkby Lonsdale, Westmoreland.*

[The leaves sent were of extraordinary size and substance, and indicate a most unusual vigour. One of the finest is 9 inches long from the tip of the centre leaflet to the base of the stalk; it is the same in diameter across the two side leaflets, and the blade of the latter measures  $4\frac{1}{2}$  inches long by  $3\frac{1}{2}$  broad, the former one being of similar size. They are thick in texture and of a rich dark green colour. On only one occasion have we before seen Rose leaves as fine as these, and that was a sample of *Maréchal Niel* sent to us some years ago by a correspondent at Hereford. One of these, which is shown in the woodcut (fig. 20) of its natural size, and may be taken as a fair representation of the leaves sent by Mr. Burton.]

#### SEED POTATOES.

In the notes on these at page 87 there is an omission of some importance. That is the danger of allowing Potatoes intended for seed to lie out in the open for any time. If disease is about these are sure to be affected; and no matter where or how they may be wintered, most of them will be sure to "go" with "after-sickness." There is another point worth noting, and that is the great benefit derivable from a change of seed. I know some gardeners consider the necessity of a change of seed to be very problematical in order to get the best results, but I have experienced and seen the benefit of fresh "seed" too often to doubt the wisdom of keeping changing. In the case of the earliest crop, it is decidedly best to keep selecting seed tubers from the earliest plants, but for the second earliest field-grown tubers yield much the best crops. Although "*A Working Gardener*" deprecates bringing on the tubers under glass, I think no harm arises if they are properly managed. I generally have a few hundredweights of bought-in kidneys to start, and we lay the tubers out on the border of a cool Peach house, cover them with straw, and when well started place them in boxes and keep for a day or two in a shed before planting. Unless kidney Potatoes are strongly started they prove a very unsatisfactory crop. There can be no doubt as to the wisdom of selecting medium-sized tubers. Ordinary "seed" last spring was almost unsaleable, yet I found a ready sale for selected tubers at 24s. per cwt.—B.

#### LILIES AT SOUTH KENSINGTON.

In the handsome collection of hardy plants recently shown at Kensington by Mr. T. S. Ware, the Lilies were very prominent, a large number of the choicest and most useful garden forms being included. Few plants can be so effectively employed in decoration as these, and for large buildings they are particularly valuable, as their powerful odours are not then too oppressive. Mr. Ware has a fine collection of these at Tottenham, and his Hale Farm nursery appears to suit them extremely well, judging by the size of the flowers and spikes produced.

The following species and varieties were well shown at the recent meetings:—*Lilium Browni*, one of the finest Lilies cultivated; a native of China. *L. canadense* and *canadense rubrum*, from the North American forest, with curious spotted yellow and red flowers. *L. pardalinum*, several beautiful American varieties; they grow like *pardalinum pumilum* (a very dwarf flowering form), 4 to 10 feet high, and vary from deep orange to pale yellow, spotted and unspotted like the pale yellow new variety *Lilium pardalinum Warei*. *L. testaceum*, a supposed very fine garden form, with sweet-scented nankeen-coloured flowers. *L. martagon dalmaticum* (the black Martagon Lily), the dalmaticum form of the Martagon Lily with numerous flowers nearly black. *L. colchicum* (*Szovitzianum*), a very fine Asiatic species with large flowers, varying from pale yellow to golden yellow. *L. chalcedonicum* (the old Turk's-cap Lily) with scarlet flowers, one of the last in flower; a native of the south-east of Europe. *L. elegans* (*Thunbergianum*), several beautiful forms of Chinese origin, with erect flowers varying from pale lemon to deep crimson. *L. Humboldti* and *ocellatum*, two very fine free-flowering Californian Lilies, varying from orange, maroon spotted, to deep orange with large purple spots, several running into one. *L. auratum* (the Gold-rayed Lily of Japan), one of the grandest of all hardy Lilies; some flowers are pure white with a pale yellow band, others crimson-spotted, the band varying from pale yellow to deep crimson.—V.

ROSE A. K. WILLIAMS—A LAST WORD.—It really surprises me "Y. B. A. Z." should still persist in maintaining, because one or more local cases have occurred in his vicinity of apparent "delicacy of constitution" of this magnificent Rose, that therefore this is its characteristic, and seems to accept as gospel—proof positive—that it will not transplant from "One Who Knows." I see all the gardening journals, and judging from the reports there has not been a Rose show in England,

Ireland, or Scotland without it. It is only a few years issued, and if delicate this would not be the fact. My opinion counts for little, but take that of one of the greatest living authorities, "D., Deal:"—"I was surprised at the disparaging remarks on A. K. Williams. . . . Nor can I at all agree with them. It may not be a vigorous Rose, but it is not a delicate one. The idea that it will not bear transplanting, but must be budded *in situ*, I believe an erroneous one." *Vide* page 104.—W. J. MURPHY, *Clonmel.*

#### CULTURE OF TOMATOES IN POTS.

As I have now a row of five dozen Tomatoes in pots in very good condition, and much admired by visitors, I send a few notes on my treatment.

The house is a lean-to facing east—really a Cucumber house, but converted into a Muscat house, the Vines planted 4 feet apart this time last year, so there is plenty of light between the rods. The Tomato seed was sown the second week in February, the plants were grown steadily, and transferred from 48's into the fruiting pots No. 6 in April, the pots then being placed on the hard ash path. I note this particularly, as the Tomato grown in pots and stood in or on Vine or other borders will root through, and get as much nourishment from the roots rambling out of the pots as from the roots in them.

Not caring to spoil a good wall with nailing, and having a quantity of 9-foot rods turned at one end I simply hooked one end on the trellis, and put the other through the centre hole of the pot before planting. This keeps the foliage from touching the wall, and I am convinced was very beneficial to them during the hot sun, for in another house a plant or two nailed to the wall in the usual way flagged very much.

The pots were placed about 6 inches apart, and the plants kept to a single rod or stem, stopped about 5 feet high, then another leading shoot taken up until now they have got to the top of the wires, and I expect will fruit up to Michaelmas. No fire heat has been employed, and the plants as regards health and fruitfulness are very satisfactory. They were potted in a poor soil, for I find rich compost in the early stage of no benefit, but the reverse, causing over-luxuriant growth. As soon as the first bunch or two of fruit are set the roots are top-dressed, the pots only being up to this time half full of soil; they are also occasionally watered with liquid manure.

#### NOTES ON VARIETIES.

DEDHAM FAVOURITE.—A really good introduction in the way of recent novelties. The fruit is pink in colour, very solid, consequently heavy; flavour first-class, either for cooking or dessert purposes. Very handsome in shape; I wish I had a red variety to match it in this respect. A good cropper, setting from three to six in a cluster, more if it is wished, only I have thinned mine to that number. To-day in a length of 24 inches I counted as many as three clusters of six, five, and four, all good fruits; some will turn the scale at half a pound.

HOLBORN RUBY.—This appears to be only a counterpart of the above. I have fancied at times there was a slight difference in habit, shape, or the colour of the fruit, but cannot satisfy myself. I regret this very much, as I am growing this specially for exhibition, and do not see how it can stand. I shall be glad to hear other growers' experience of the above two splendid new varieties. Dedham Favourite and Holborn Ruby are planted out in another house, and if I cut the fruit and mix them I cannot discern any difference. The plants are not syringed, more particularly when the fruit is about colouring, or they will crack.

VICK'S CRITERION.—This comes next; a very useful variety. The crop is not quite so heavy as the preceding, though it is a good setter in bunches of five or six. In a length of 20 inches I have three bunches of six, five, and four, all good fruits, of a rich pink, not so crimson as the preceding varieties. In limited space this is the best of all for pots. The fruit being Plum-shaped and not large it is very desirable for table use.

WHEELER'S PROLIFIC.—Though only a variety of the Old Red, this is an improvement. I did not sow the seed till April 5th, so have not cut any fruits, but they look very promising, hanging in bunches of six or eight, all useful fruits.

HATHAWAY'S EXCELSIOR.—A good-shaped medium-sized red fruit, but it crops rather too lightly for me, not more than four in a cluster. It is a peculiar red, and heavy for the size of the fruit.

GREENGAGE.—This does not fruit at all well with me, yet I have a fair crop of a very striking yellow colour. The flavour I consider is not equalled by any variety. So far the heaviest fruit would not weigh 4 ozs. This variety evidently wants starving to induce fruiting.

TROPHY.—The fruits of this come very large, but it seems to run away to wood, though I stopped the leader at 3 feet. In one case there are ten fruits in a cluster, but nearly all are deformed. I could not recommend this for pots. ]

SELECTION FROM VICK'S CRITERION.—Last on my list is a red-



fruiting handsome variety, obtained from a packet of Vick's Criterion, which it resembles in shape of fruit; the habit of plant also is similar but darker in colour of foliage, and the fruit is red. I consider this a gem, but have only one plant. I send you a fruit for inspection.

In the case of plants in pots I may state that as the roots came through the bottom of the pots on the walk they were covered with about an inch depth of soil to save water. Tomatoes vary so much in growth, and strength, and setting that each requires particular treatment. With some it is a good plan to cut a portion of the leaves off, by so doing it sends them into fruit, especially the Trophy.—STEPHEN CASTLE, *West Lynn Vineyard, Lynn, Norfolk.*

[The fruit sent is much like Vick's Criterion in shape, but quite distinct in colour, being more of a scarlet shade. It is handsome, even, and of good flavour.]

### THE CULTURE OF NEPENTHES.

THESE plants are very ornamental and interesting, and should find a place in every garden where there is a stove. They will do well in either pots or baskets, but if grown in the former and arranged on the stages they occupy space that might be more profitably devoted to other plants. If suspended from the roof in pots or pans constant labour is required to keep them clean. Baskets are preferable; they look neater than pots hanging from the roof, and cause less labour. A stove now-a-days scarcely appears finished without a good number of these plants suspended, which, when well grown and bearing plenty of pitchers, arrest the attention of visitors sooner than almost any other occupant.

When the cultivation of *Nepenthes* is commenced healthy vigorous young plants should be selected, and placed after recovery from their journey, if obtained from a distance, in a warm, close, moist structure for a time, and afterwards in baskets. They generally form pitchers freely in a small state, in fact until they attain a height of 18 inches or more, and after this the pitchers produced are few in number.

The only method by which they can be induced to form pitchers freely is to cut them close back, leaving two or three joints above the surface of the compost in the baskets. From these eyes new shoots will be produced, and in the course of six months they will be growing vigorously and forming pitchers. If large specimens are required quickly the stem may be left longer and pegged upon the surface of the basket, when a larger number of shoots will be produced. If they have been cut down several times and are bare at the base, they should, after the young shoots are a few inches in length, be pegged on the surface of the baskets and layered, and in a few months roots will be emitted, and the plant will be entirely independent of its former supporters.

The plants are increased by cutting the stem into lengths, which should consist of two joints, leaving both leaves upon the portion intended for the cutting. The cut at the base should be made with a sharp knife and sufficiently low not to injure the lower leaf. These cuttings must be inserted singly into 2-inch or 3-inch pots in sphagnum moss and sand, placing a good pinch of the latter for the base of the stem to rest upon. The top eye only should be above the sphagnum. A good watering after insertion may be given, the pots being plunged in brisk bottom heat and covered with handlights made airtight to prevent any evaporation. Under these circumstances they will form roots before more water is needed if kept shaded from strong sun. It matters but little when the cuttings are inserted, for they will root equally well at any season, and nearly every one will be found to root if treated as described.

After they are rooted the greatest possible care is needed in hardening them; if too much air is admitted into the handlights they will flag and perhaps die. This hardening process is the most tedious operation connected with their culture, and takes a long time before they are capable of withstanding full exposure to the drier atmosphere of the stove. Air should, however, be gradually admitted and increased from day to day until the lights can be safely dispensed with.

By the time the young plants will bear safely the atmosphere of the stove or any heated structure in which they are to be grown, they will have commenced forming shoots from the top eye and may be at once transferred to baskets. A layer of crocks should be placed at the base, and then covered with sphagnum moss, and the space between the ball of the plants and the sides of the baskets filled with peat fibre and small crocks or portions of charcoal. They will do well in moss or a mixture of both, but peat is the most satisfactory, as it does not decompose so quickly. When placing them in baskets the old

stem from which the new shoot has issued should be covered with the compost, and then the whole surfaced with a layer of moss, which adds much to their appearance. When in active growth and the roots are working freely into the new soil the old leaves may be removed, and the plants will soon commence forming pitchers.

*Nepenthes* do not need large baskets, but when a larger size is required the transfer is easily accomplished in early spring. In doing this the wires that hold the corners of the baskets together should be severed, and then the plant can be lifted out without much trouble. As much of the decayed material as possible should be removed without injury to the roots, and fresh supplied.

Experience convinces me that their successful cultivation does not depend so much upon the material or the amount of soil they have to grow in as an abundant supply of water. During summer the baskets should be well soaked daily, and the plants syringed liberally at least twice. During the winter less will suffice, but they should never be allowed to approach dryness. They delight in heat and moisture, and the house in which they are grown during the summer cannot well be kept too warm or too moist for them, providing the heat is derived from a natural source. The temperature during summer should range at night from 70° to 75°, with a rise by day from sun heat of 10° or 15°; the winter night temperature 60° to 65°, with a corresponding rise of 5° or 10° by day. They enjoy light, but the strong rays of the sun should be broken by means of blinds, which can be drawn up or down at will.

*Nepenthes* are not troubled much by insects. Scale will sometimes appear, but this is easily eradicated by means of a sponge and a weak solution of soft soap and water or Fir tree oil.

The following are six good and ornamental forms:—*Hookeriana*, *Rafflesiana*, *Henryana*, *Lawrenciana*, *Williamsii*, and *Outramiana*. The beautiful *N. Mastersiana* should be included, for it is the finest *Nepenthes* I have seen.—SCIENTIA.



GRAPES AT NEWCASTLE.—Mr. C. Portsmouth, The Rectory, Morpeth, writes:—"I notice in your report of the Newcastle-on-Tyne Summer Show that 'for two bunches of Grapes Mr. E. Douglas was first with Black Alicante, and Mr. Edmonds second with Madresfield Court,' which is incorrect, as I was adjudged first prize for Black Prince, the class being for 'two bunches Black Grapes, Hamburgs excluded.'"

— INCREASING attention is being paid to APPLE CULTURE IN NEW ZEALAND, and one Auckland nurseryman is said to grow 600 varieties. The same man has obtained some trees of The Queen, which variety is obtaining much favour there, and will be largely increased. An American variety, The Jonathan, is described as likely to be the most generally suitable for the climate.

— AT the recent Royal fête at Kensington Messrs. James Cutbush and Son, Highgate, had two large and handsome groups of greenhouse and other plants, which were duly appreciated by the visitors. They included a fine collection of healthy Heaths and similar hardwooded plants, for which this firm is deservedly noted.

— THE CABBAGE BUTTERFLY IN AMERICA. — Mr. William Saunders of Ontario, in the Proceedings of the Royal Society of Canada, states that the Cabbage Butterfly (*Pieris rapæ*), which has proved such a pest to the market gardener, made its first appearance in that country at Quebec during the period of the American Civil War, and is supposed to have been brought over with fresh vegetables supplied to the British troops sent to Canada at the time of the Trent difficulty. The insect has since spread over an immense area and multiplied enormously. It now extends from the Gulf of St. Lawrence, all through the Eastern and Middle States, as far west as Nebraska, and south to the Gulf of Mexico.

— CLOVE CARNATION GLOIRE DE NANCY.—Mr. T. S. Ware, Hale Farm, Tottenham, sends us a box of this handsome white Clove, as pure and fragrant as could be desired by the most fastidious. It is un-



questionably a beautiful variety, very free and of vigorous habit. The blooms are not quite so large as the ordinary crimson Clove, but they are full, well formed, and invaluable for cutting.

— WE are informed that the business of the late Mr. W. Crowder of the Thimbleby Nurseries, Horncastle, whose death we noted last week, will be carried on by his two sons.

— THE usual monthly packet of publications from Messrs. Cassell and Co. includes the following :—Part 66 "Familiar Garden Flowers" gives plates of *Polemonium reptans* and *Malva Creeana*, with the usual descriptive notes; part 89 of "Familiar Wild Flowers," which has plates of *Ranunculus acris* and *Plantago lanceolata*; part 4 of "Popular Gardening" continues the chapters on "Garden Walks and Roads," "The Life History of Plants," "The Kitchen Garden," "Rose Culture," and other subjects, with several illustrations; part 48 of "Paxton's Flower Garden" contains plates of *Mormodes ignea*, a very distinct and peculiar Orchid, and *Myosotis azorica*.

— THE EASTBOURNE FLOWER SHOW will be held on Wednesday, August 13th, in the ground of Compton Place, Eastbourne. The schedule enumerates eighty-five classes, the first division of twenty-one classes being open to all England, and some liberal prizes are offered, the principal being for stove and greenhouse plants, the prizes varying from £8 to £2. The three other divisions are for amateurs and gardeners of Sussex, and cottagers within ten miles of Eastbourne. This Society has already gained more than local fame for the merit and extent of their exhibitions.

— HOLIDAY HANDBOOKS (London: 125, Fleet Street).—These useful little guide books, edited by Mr. Percy Lindley, we have previously commended at various times, and two more of the series now before us equally merit a word of praise. One is devoted to the "Moselle from the Franco-German Battlefields to the Rhine," and is freely illustrated by views of Luxemburg, Treves, Berncastel, Beilstein, Cochem, Carden, and Alken, together with descriptive matter and miscellaneous useful hints regarding hotel accommodation, &c. The other is entitled "Tourist Table-talk," and is a simple vocabulary of everyday expressions in English, French, and German, with money tables, distances, and other information of peculiar value to the uninitiated tourist.

— ANTIGONON LEPTOPUS.—Mr. R. J. Lynch writes:—"This is so interesting as a climber that it would be a pity not to correct a mistake concerning it in this respect at page 95 in last issue. It is there said to be like the Vine and Virginian Creeper; but though its tendrils are, as in these cases, the homologues of flowering branches, it is remarkably different. Supposing the Vine produced tendrils at the end of every bunch of Grapes, and was in the habit of suspending its fruit by several tendrils at the tip of each cluster, then it would be said correctly that there is resemblance. The Vine does not do this, but *Antigonon* never produces an inflorescence without giving it the means of clinging on its own account. There is no case recorded, I believe, exactly like it, and one only that is somewhat similar."

— ERRATUM.—In the report of the Forestry Exhibition, page 97, "the Pennycock Patent Glazing and Engineering Company showed their new sashbar of zinc and lead with combined system of glazing with putty," should read "without putty."

### CHRYSANTHEMUM CULTURE.

MR. MURPHY seems to think I shall not get the majority of Chrysanthemum growers to agree with me in my assertion that rooted suckers make the finest plants. I have proved, however, to my own satisfaction that such is the case. The opinion he arrives at in favour of cuttings, I presume, is from his own experience, and this by his own showing is limited, when he only now comes to the conclusion that March is early enough to propagate for conservatory decoration. Mr. Murphy's answer to my inquiry for the names of the varieties that flowered with him under the treatment described on page 25, is rather a new way out of the difficulty. In one line he invites discussion—the next he tells you "this would be an intrusion not to be permitted on your space." I have always found anything that tends to the advancement of horticulture is willingly accorded space in this Journal.

I certainly did not want the names of 800. Mr. Murphy's success might be put down at something under twenty varieties. He states, "Mr. Cannell has 800 varieties. I have grown a large number of them, only failing with large *Anemones*." Again, "all the free-flowering and early Japanese kinds submit to this treatment."

Well, out of 352 incurved and Japanese varieties mentioned in Mr. Cannell's catalogue for 1883, not forty would be suitable for the purpose

Mr. Murphy recommends, and even with these there must be no root-cutting, or they would not flower.—C. WARING.

I CERTAINLY grow Chrysanthemums for decoration merely (see page 93), and the majority of gardeners do the same. The soil I use is strong loam without fibre, and I only add a third of manure to it. This is rammed into the pots as firmly as it is possible to do. Mr. Davis is quite right in saying that when the roots reach the sides of the pots when treated as above, the plants are not in a root-bound condition. In one case I find that the firm potting induces the formation of quite a different class of roots from what is made when a light soil is employed, and the potting is more or less loosely done. These roots are quite fibrous, and ramify through the whole body of soil slowly but surely. The plants are regularly supplied with stimulants and manure. We do not grow an enormous number of plants, still they amount to several hundreds, and the results satisfy me financially and otherwise that my simple system of culture might be followed with benefit.—R. P. B.

### MELONS DECAYING.

THE houses in which Melons are grown here are 300 feet from the boiler, and up to last autumn it was impossible to maintain a very high temperature, being often 5° lower than I wished in the morning. The bottom-heat pipes were raised 14 inches nearer the surface, while the top pipes were re-arranged so that the house could be kept warmer. The night temperature of the house this season would average about 70°, varying according to external conditions—the guide by which all our temperatures are regulated—being higher when mild, and a few degrees lower in the morning when the temperature externally is cold. Since the heat has been raised the thermometer stood at 75° in the morning, and often 78° and 80° when last examined at night. This I consider is a higher temperature than is really needed in the majority of houses for the successful cultivation of Melons, but if they are to be grown here free from disease in a damp house the above degree of heat must be maintained. Instead of chiding "Thinker" I wish to thank him for his friendly criticism of my note on the above subject.—WM. BARDNEY.

### NOTES ON HARDY ERODIUMS.

THIS genus seems to be one of the many which have fallen into disrepute amongst cultivators. Possibly it has been thrown into the shade owing to the strides taken in the improvement of the *Pelargonium*. This is really unfortunate, as the plants comprised in this genus possess a refinement and grace peculiarly their own; whether the pretty colours of their freely produced blooms or the light and graceful foliage (seeming to imitate in miniature many of the *Umbelliferae*) of the majority of the species. They are of especial use to anyone who has a sunny bank or slope of rockwork too hot and dry for the majority of plants to grow with any degree of luxuriance, and where something to relieve the rather formal outlines of *Sempervivums*, *Sedums*, encrusted *Saxifragas*, *Cacti*, &c., is desirable. With all due deference to their able champion in these pages be this written, for though not an ardent Cactophile, yet I believe some very charming effects might be produced in such places by the free use in summer of *Cacti*, *Kleinias*, *Stapelias*, *Senecios*, and the smaller succulent *Euphorbias*.

The genus is distinguished from the *Pelargonium* by its regular flowers, and from *Geranium* by the bearded spiral awn with which the capsules are surmounted. The generic characters may be given thus—Style one; calyx of five sepals; corolla of five petals; stamens ten, slightly monadelphous at the base, alternately sterile; glands five; fruit beaked, separating into five one-seeded capsules, each with a long spiral awn bearded on the inside. The chief habitat of these plants is in the countries bordering on the Mediterranean from Spain to the Levant, although three species are found in this country, one or two in Siberia, and a few at the Cape of Good Hope, that great home of the *Geraniaceae*. A large proportion of the species are annuals, and of the perennials many are so difficult to procure that it would be of no great use to mention them. The most convenient division will be into two groups—viz., those with leaves pinnately parted, and those with leaves undivided or three-lobed.

#### LEAVES PINNATELY DIVIDED.

*ERODIUM ALPINUM*, Link.—A native of the south of Europe, first introduced into this country from Italy in 1814, but was figured in "Geraniologia" of L'Heritier published at Paris in 1878-7. The plant attains a height of from 6 to 9 inches, having smooth bipinnatifid leaves, the midrib being distinctly toothed. The flowers are borne in umbels of from six to ten; petals decidedly obtuse, of a peculiar violet carmine shade; calyx small, with pointed sepals. The whole flower is about an inch in diameter, and they are produced continuously from April until severe frost comes. In mild winters I have seen this species and also *E. Manescavi* flowering at Christmas.



*E. CARUIFOLIUM*.—A Spanish plant with leaves resembling those of *Carum Carui*, the Caraway, hence the name. Foliage very graceful, deeply and elegantly divided; the whole under side of the leaves including the petiole covered with soft white hairs. The flowers, which are in umbels of nine or ten blooms on stems about 9 inches in height, are red, half an inch in diameter, and are produced about May and June. This species prefers a very chalky soil.

*E. CHEILANTHIFOLIUM*.—An exceedingly beautiful and rare Spanish plant, which is, however, by no means difficult to grow. The leaves are twice-divided and form a circular tuft of foliage, rising about 6 inches from the ground. The flower stems about 1 foot in length, arising in great profusion from the centre of this tuft at almost all seasons except midwinter, carry from three to six flowers about half an inch across, of a bright and lively shade of pink. This is one of the true rockwork gems, and should be given a sunny position, on limestone if possible.

*E. CHRYSANTHUM* (GOLDEN HERON'S BILL).—This species would merit attention for its colour alone, which is almost unique in the genus, if it had not also other claims both of variety and beauty. In general appearance this plant closely resembles the last, except in the flowers, which are of a golden yellow, with a distinct white centre. Being a native of Greece it should be given a warm and sheltered position. The writer has not had much experience of this plant, but it seems likely to do well in a soil containing a considerable amount of limestone grit.

*E. MICRADENUM*, *L'Herit.*—A native of the Pyrenees, being much like *E. cheilanthifolium* in general appearance and habit; the leaves, however, differ in possessing a very agreeable aromatic perfume. The flowers are of a pale pink, with rosy purple veins, the two upper petals having each a black spot in the centre, and are freely produced during the summer months. This is one of the commonest and best known species, and although it will grow freely in an ordinary border, it is seen to best advantage in a sunny chink on the rockwork.

*E. MANESCAVI*, *Cosson.*—Probably of all the species this is the one in most general cultivation; and although a striking and handsome plant, yet anyone seeing only this would be quite unable to form any idea of the beauty of the smaller species, from which it differs considerably, being a robust-growing perennial about 2 feet high, with a quantity of long much-divided leaves, pinnate, with oblong deeply cut leaflets, the rachis not toothed. The flowers are about 1 inch in diameter, reddish purple, produced at nearly all seasons. This is better suited for the border than the rockwork unless very extensive, and will grow well in almost any soil.

*E. PETRÆUM*, *Willdenow* (ROCK HERON'S BILL).—A native of very rocky places in the Pyrenees and various other places in the south of Europe. It is said to have been first cultivated in this country about 1640, but the first figure is given in "*Illustrationes Botanicae*," by Antoine Gouan, in 1773. Leaves pinnate, deeply divided; lobes linear lanceolate, nearly but not quite smooth; the midrib toothed. The flowers, which appear about June, are borne in umbels on stems about 6 inches long; the pedicels or stalks bearing the individual blooms are hairy; petals retuse, twice as long as the calyx, and of a lively rose, marked more or less with white. An excellent plant for warm dry fissures in the most select part of the rockwork facing due south.

*E. ROMANUM*, *Willdenow* (ROMAN HERON'S BILL).—Originally introduced into this country in 1724, it still remains a rare plant. The leaves are pinnate, deeply cut, lobes ovate, rachis toothless; flowers light purple, many with numerous bracts, and are freely produced from April to July, the whole plant being about 6 inches high. It grows freely in any dry situation, either on a rockwork or sunny border.

#### LEAVES TRILOBATE OR UNDIVIDED.

*E. HYMENODES*, *L'Herit.*—Possibly this is the least beautiful of the species enumerated, but there is something so unique in its general form that most people take it for a hardy *Pelargonium* at first sight. Found wild in rocky fissures on the slopes of Mount Atlas, from whence it was brought ninety-five years ago. A good figure will be found in Sweet's "*Geraniaceae*," 23. The whole plant attains a height of about a foot, with three-lobed leaves, very blunt and deeply toothed, with ovate bracts. The stem, which is branching, may almost be termed woody; the whole plant is also densely covered with soft hairs. The flowers, which are produced all through spring and summer, are many, on a stem of a whitish pink, with a brown spot at the base of the upper ones. This plant prefers a very chalky soil as rough as possible, but in a warm situation, as it is not hardy even in ordinary winters in the north of England and also in districts with a large rainfall.

*E. REICHARDI*, *Decandolle*. Synonyms, *E. chamædryoides*

*L'Herit*; *Geranium Reichardi*, *Murray*.—A very interesting little plant from the Balearic Islands, introduced in 1783, and figured in the "*Botanical Magazine*," t. 18. The whole plant does not usually attain a greater height than 2 inches. The leaves are cordate, crenate, and not hairy. Flowers solitary, small, white, veined with pink, and produced in abundance from early spring to late autumn. It is not particular as to soil or situation, and may be used for carpeting bare places on the rockwork round upright-growing plants. It would probably look well in association with *Opuntia Rafinesquiana*. All the species of *Erodium* may be propagated from seed sown as soon as ripe, and also from cuttings of half-ripened wood slightly dried at the base, the after treatment being that of *Pelargonium* cuttings.—*G. GUTHRIE*.

#### HEN-AND-CHICKENS MARIGOLD.

A PECULIAR proliferous variety of the common Daisy is well known in gardens, and to this the popular title of Hen-and-chickens has been



Fig. 21.—Hen-and-chickens Marigold.

applied, not inappropriately expressing the distinguishing characters. A week or two ago Dr. Paterson, Bridge of Allan, sent us an example of a similar malformation or departure from the usual structure as shown in the common Marigold. This is comparatively seldom seen; but, strangely enough, a few days afterwards a correspondent sent us another and similar specimen—a rather peculiar circumstance, as we have no remembrance of receiving an example previous to the present season. Dr. Paterson's specimen we have had engraved, and is shown in fig. 21, which represents the small and secondary flower heads springing from the base of the old one in the centre, both the primary and secondary heads being exactly similar in form and colour. Writing in reference to this plant, Dr. Paterson remarks, "I wish to mention the fact of its having grown in close proximity to a Hen-and-chickens Daisy, and I have been wondering Can the one have had any influence over the other? This might have interested Mr. Darwin." It is certainly a strange circumstance that



proliferous Marigold should have appeared in the immediate neighbourhood of the Daisy, but we do not suppose any influence was exerted to produce it; it is probably accidental.

#### KEEPING GRAPES IN WATER.

TEN years ago, or nine at least, I sent you a description of zinc boxes I was using for keeping Grapes in water exactly on the same principle as Mr. Ward's. Although for a few years back I have not kept late Grapes I endorse all that is said in favour of Mr. Ward's system, and I shall add my own, as it is identical. Anyone having large quantities to keep will find it much more simple and quite as efficient as the bottle plan. I am quite certain you will not allow me to point out that an article of mine on the same method appeared in the *Journal of Horticulture* about nine years ago.—WM. IRVINE, *Glossop Hall*.

#### CYANANTHUS LOBATUS.

WHAT a misfortune that everybody is not successful in growing that charming Himalayan plant *Cyananthus lobatus*. With me it grows and flowers freely, a small plant having in two years completely covered over a foot square; but notwithstanding my success with it, I do not hesitate in terming it fastidious. It grows best in shade, but is very impatient of moisture, and although it prefers a strong rich soil it must not be retentive. A black spongy peaty soil seems to suit it best, to which has been added a good dressing of old decayed manure, and with a good under-drainage, or the growths will be meagre, the flowering scarce and of a washy colour. During the growing season moisture should be supplied plentifully, and in winter the crown should be covered with leaves or pieces of glass to ward off damp. Though rarely growing more than 6 inches high even when robust, it forms neat dense masses with its much-toothed and irregular-lobed leaves. The flowers are borne at the end of the wiry stems as large as a florin, but varying in colour from their opening from a lovely soft to a rich intense blue; the calyx tube looks very peculiar, covered with the soft brown hairs so prevalent all over the plant. It flowers from now until late autumn, and is increased by seed.—K.

#### BLIND WINTER GREENS.

THE summer of 1884 will not be far behind any of its predecessors so far as a supply of insects injurious to vegetation is concerned. In some parts of Wales on large tracts of mountain land every particle of vegetation has been eaten by caterpillars, and it was feared that they would spread into the more fertile valleys, and give much trouble to the farmer and gardener, but this they have not done. Amongst the most troublesome insects is the one which eats the tender centre out of the Brussels Sprout, Savoys, Broccoli, &c., and makes the plants blind and useless. I hear very many complaints of plants being destroyed in this way. In some small gardens the majority are gone. When so eaten the plants are useless. They should be pulled up and others put in their places as soon as possible. A good crop may then be secured for the winter, but if anyone waits thinking to see young centres sprout out and become strong, like the original one, they will wait in vain. Plants which are all right now will remain so, as it is generally in the early months of summer the attacks are made, and in August they stop their depredations or advance a stage in their development, probably feed on something else than the most delicate part of our winter greens.

In the garden here we have lost a few plants, but only a few, as we dust the plants well with soot and lime when they are in the seed beds, and in my opinion this prevents any deposit being made on them which would ultimately end in their destruction. I am very much in favour of dusting all young plants in this way, as it does them good in more ways than one, and when it is put on them after rain it adheres to them for a long time, being washed down to the roots by degrees and warding off all insects. In gardens where many plants have been lost lately, I would recommend all plants with good centres in them to be dusted at once; and above all let all the blind ones be drawn up and thrown away, as any dealings with them after this time will only end in failure, which will not be so much felt now as in winter and next spring when seasonable vegetables are in demand.—J. M.

#### PROPAGATING DRACÆNA GOLDIEANA.

THIS *Dracæna* is a remarkable plant, and quite distinct from any of the others. It is not so graceful as some of the *Dracænas*, but when well grown it is a noble plant, very ornamental and effective.

In a contemporary it was stated some time since that stem cuttings of this *Dracæna* would not strike. This statement I am able to contradict, for of five pieces that I put in as stem cuttings I have three established plants in 4-inch pots. It does not strike so freely as others; in fact, it takes double the time to strike. I put in a great quantity of stem cuttings of other varieties; they struck, and were established in 3-inch pots some time before those from *D. Goldieana* appeared above the soil. Side shoots taken off with a heel strike as readily as those of other varieties.

In the middle of January last I had a number of tall plants with good crowns of leaves, and rather than run the risk of losing several of them by taking off the crowns and putting them in as cuttings, incisions were made directly below the leaves; some wet moss, sand,

and leaf soil well chopped and mixed together was bound tightly about the incisions. Some of the plants were moved to the forcing pit, others remained in the plant stoves. Those in the forcing pit rooted nearly a fortnight before those in the stove. *D. Goldieana* was amongst the latter, and was quite a month behind any of the others. When the moss was well filled with roots the crowns were severed from the stems directly under the incisions, and potted in small 5-inch pots, a stake being placed to each plant, and the leaves tied loosely to it; they were then placed in the propagating pit and syringed three times a day. They soon became established, scarcely losing a leaf, and some of them are now from 2 to 3½ feet high in 6-inch and 8-inch pots, and are well furnished with fine healthy leaves from the rim of the pot to the top of the plant. This method of propagation I consider far preferable to any other. One great boon is, better and larger plants can be grown in smaller pots than when otherwise treated, rendering them more serviceable for decorative purposes, and instead of tall plants in large pots we can have well-furnished stocky plants in comparatively small pots. I have not had one failure.

The other varieties were *D. Baptisti*, *D. Cooperi*, *D. Ernesti*, *D. Frerei*, *D. Guilfoylei*, *D. Hendersoni*, *D. Leopoldi*, *D. Regina*, *D. Rossi*, *D. Rebecce*, *D. rubusta*, *D. salmonca*, *D. terminalis*, *D. voluta*, and *Mrs. Wills*.—GEO. HARRIS, *Arle Court Gardens, Cheltenham*.

#### UTRICULARIA VULGARIS.

MR. SIMMS of Oxford has published his observations upon the carnivorous propensities of this plant in the form of two papers, one of which appears in the *Field* of June 21st, page 879, and the other and more recent one in *Nature* of July 24th, page 295. In both instances a figure of the plant is given, and vesicles or bladders are represented containing captured fish. Explanatory figures, with some remarks, appeared, too, in the *Journal of Horticulture*, on page 3 of the present series; and in referring to them now it will be seen that in the face of Mr. Simms' papers they possess an interest beyond that they had at the time of publication.

In the contribution to the *Field* the first in point of order as to date, Mr. Simms states that "Whilst engaged with his aquarium, in which he was endeavouring to hatch out a small quantity of perch spawn, his attention was drawn to several young perch lying dead on the feathery branches of a bunch of Bladderwort." No mention is, however, made as to the period of time the *Utricularia* had been in the aquarium. Probably the "bunches" referred to were an accumulation of detached floating shoots, in some respects similar to the specimens from which it is inferable the plant may have been originally botanically described. These have not as yet, so far as we know, been discovered on which fish have deposited spawn, but from the appearance of their bladders when first taken out of the water they might in some cases be supposed to be the spawn of some description of fish if subjected to a slight examination, or, as when seed vessels "closely examined" by Mr. Simms, it is possible to mistake them for "fruit vessels." The statement that the bladders exercise no such functions as those attributed to them by botanists is much too speculative, and, moreover, difficult to authenticate; and the obvious discrepancies in the description of the plant is inexplicable. We are informed that "animals enter the bladders . . . and it is evidently difficult for them to escape when imprisoned." Mr. Simms avers that he watched a large worm, which had been caught in a small bladder on May 28th, after a violent and protracted struggle, swim off, minus a small portion of his tail. The capture of the male worm cannot but be regarded as particularly interesting, but we must in passing hint that we are not oblivious of the fact that the observations under notice must have been conducted under peculiar circumstances, or that the specimens of *Utricularia* employed were of a very extraordinary description. The assertion of its being one of the "enemies which assist the denizens of our rivers in all stages of their existence" is scarcely worthy of consideration; it is, however, a point of interest in a remarkable contribution to a leading journal—being as it were the summit of the inconsiderateness from whence the writer achieves a most amusing literary somersault, for he forthwith proceeds to point out the fact that the "*Utricularia* is seldom met with in rivers." It may be deemed scarcely necessary to remark that were the detached shoots or runners to be under any circumstances introduced into a river they would, provided their fragile formation could sustain the ordeal, naturally float with the current to—who knows where? The situation where the *Utricularia* is known to luxuriate is in undisturbed deep ponds where the water is overshadowed with trees, and it has yet to be proved that the plant in its habitat is a destroyer of young fish. In the event of shoots being drifted to shallow water at the time when the fish are just hatched, it is possible for some of them to become entrapped in the extended bladders of the plant; but it will be seen that river fry are exempt from its over-estimated destructive powers.

"If," as Mr. Simms states in his paper published in *Nature*, "for a considerable period after they emerge from the egg the young fish remain in the shallow water," how is it to be explained that the *Utricularia* can be considered "as great an enemy to the small fry as the water-fowl and others are to the larger fish in the streams?" As to the supposition that "the foliage possesses some poisonous properties detrimental to fish," we may observe that we have had for some time a great number of young fish in a glass vessel measuring 10 inches in diameter, placed out of doors, containing a comparatively large quantity of *Utricularia*, and



nothing has transpired to suggest the possibility of such a theory; but in a dwelling-room, where the gas is laid on and the fume of the fragrant weed is favoured, we failed in keeping either the one or the other. It is certain that fish three or four weeks old can swim through moderately dense masses of the shoots almost with impunity, but it may be worth recording that in one instance a very small fish became impaled on one of the branchlets, the point penetrating the fish between the eyes, but the superior power of the fish enabled it to free itself from the plant with the branchlet severed from the shoot fixed in its head. As far as could be discerned this did not appear to be an impediment to its movements, although when reflexed over the fish its length was nearly that of its bearer, which afterwards managed to free itself from the portion of the plant. In conclusion one more quotation may be cited from *Nature* of a descriptive character in relation to fish—viz., "When a fish emerges from the egg it is nothing but a transparent line of light."—S. P. E. S.

### DIDDINGTON.

DIDDINGTON, the residence of A. J. Thornhill, Esq., M.P., is a quaint old-fashioned country house, and has been in possession of the Thornhills for many centuries—a family noted in the locality for maintaining the reputation and character of the "fine old English gentleman;" in its dealings with the tenantry and dependants, and cherishing a friendly and charitable feeling towards those upon the attached estates, none excels the unostentatious proprietor.

Diddington is situated on the London and York road, between Huntingdon and St. Neots, and about four miles from the latter. The mansion stands in a well-wooded park, consisting principally of Elms, many of them noble trees, as might be expected, the county of Huntingdon being famous for its Elms. There are besides the Elms fine specimens of English Oak and Walnuts, and occupies a rising ground, with a sloping undulating surface to the east. The mansion is approached by a well-kept drive through the park from the north-west, and the carriage front of the mansion is a broad expanse of gravel enclosed by walls—a courtyard. The pleasure grounds and flower garden are to the east and north-west, and extend to the south of the mansion, the ground sloping gently from the house eastwards, the view from the principal rooms being across the flower garden in the foreground, lawn, and park scenery beyond.

To the north-west, looking from the garden front of the house, the ground rises sharply, and advantage has been taken of this to plant a variety of trees, principally Conifers. A still further advantage has been taken of this to have a walk, from which a good view of the grounds is obtained, and admitting of a closer inspection of the many specimens with which this part of the grounds is studded. One wide, smooth, clean path makes the circuit of the grounds and shrubberies, and taking a course from the house to the left we find something of interest at nearly every step. From this walk branches another leading to a pretty old church, within a stone's throw of the mansion and enshrouded in trees, and by this walk there are thriving specimens on the grass of *Thuia gigantea* 30 feet high, *Thuia elegantissima*, and *Thuia aurea*. There are also several fine examples of *Platanus occidentalis* in the grounds, one here is 100 feet high, and measures round the trunk at 3 feet from the ground 13 feet. *Sequoia sempervirens*, which is so often injured by frost, few good specimens being seen anywhere, is here fully 40 feet, and feathered to the ground. There is also a 40 feet high specimen of *Picea Pinsapo*, and a grand specimen of *Thuia aurea* 9 feet high and as much through; also Irish Yews in fine health over 12 feet high, and an English Yew planted within the last thirty years, which is 21 feet high and 27 feet through. Continuing by the walk skirting the pleasure grounds we notice every change in the direction of the walk is broken by clumps of small Conifers, as *Retinosporas*, *Junipers*, *Thuias*, &c. This gives a meaning for the altered direction of the walk, and brings into prominence the lesser-growing and choice varieties of trees and shrubs, which are too small to display as specimens on grass. Amongst the latter we must not omit mention of a large Plane (*Platanus occidentalis*) 22 yards through the spread of its head. There are also pyramid bush and standard Hollies, and other plants of similar character. Perhaps the finest specimen of all is a Weeping Lime (*Tilia europæa pendula*), which has attained a height of 40 feet and 33 feet through. Its effect is very fine, its branches sweeping the grass, and the bold dense foliage and silvery appearance is distinct and effective. To give variety there is *Rhus Cotinus* aglow with its shining reddish-brown inflorescence, an Evergreen Oak, *Abies Douglasi*, *Pinus excelsa*, and a grand old Larch. Then we come to an Oak with branches sweeping the ground and 24 yards through, and very far from its prime.

In the shrubberies there is a great variety both of trees and shrubs. Conspicuous were Bladder Senna (*Colutea arborescens*), with its yellow Pea-shaped flowers and large singular-looking bladder-like seed vessels. *Viburnum Opulus nanus* may be mentioned as making a neat low-growing bush, and large balls of white blooms, flowering of course in spring. Then there are fine examples of Stag's-horn Sumach (*Rhus typhina*), a number of *Althæa frutex* (*Hibiscus syriacus*) in great variety, a class of plant much less grown than they deserve, as they are fine late-summer-flowering plants. *Garrya elliptica* forms a fine bush fully 6 feet high, and already showing its catkins in hundreds. This is one of the finest evergreens for flowering in winter, and is not by any means tender. Golden Laburnum is unquestionably the best of all yellow-foliaged small trees. There is a great variety of shrubs, evergreen, flowering, and otherwise, which are at all seasons interesting either for flowers or foliage. *Tamarix* seems to thrive here as well as it does on the seacoast, and there are

fine flowering examples of *Spiræa*, notably *S. bella* and *S. callosa*. The Allspice Tree (*Calycanthus floridus*) flourishes, and gives its sweet-scented flowers in profusion. *Leycesteria formosa* forms a large spreading bush, its drooping flowers having a fine effect. This deserves to be more extensively grown. Tree Ivies remind me of my experience in smoky towns; they are the very finest of all evergreens, and for clothing a wall are invaluable, only do not take the tree, but the climber form of our common Ivy (*Hedera Helix*), the finest of all. *Paulownia imperialis* grows freely, but I understand does not flower, yet its foliage is very ornamental. There are on the lawn in this part of the grounds thriving specimens of Cedar—*Cedrus Libani* and *C. atlantica*; indeed there are stumps of fine old trees of the former which have come to grief through snowstorms and winds.

Now I come to a most important matter—the ground here is white. Everybody knows Rhododendrons will not thrive in these formations devoid of a peaty surface. Some say they will not grow on limestone formations, but I never saw them more vigorous than they are on limestone formations, notably at Coed Dhu, Denbighshire, and Cyclamens flourish amazingly in the *débris* of woods on those formations. At Diddington there is a large bed of hybrid Rhododendrons planted in sawdust 3 feet deep, and they thrive amazingly. They make shoots several inches long in a season, and flower splendidly. They have been in this material three years, and improve every year. There are also large clumps in the ordinary soil, and they dwindle.

This brings us to the flower garden, and some distance from it is a broad or promenade walk, with standard Roses in circles, with trial bedding plants. This walk admits of a fine view to the west of the flower garden, and to the east of the finely wooded park. In the belting shrubbery at the lower part of the grounds is a good example of *Indigofera dumosa*, its rosy-purple Pea-shaped flowers in long racemes having a fine effect. It is at least 12 feet through and 6 feet high. *Lavatera arborea variegata* is conspicuous for its variegated leaves and altogether distinct appearance, its creamy variegation telling effectively in the greenery surrounding. There is a fine example of a Weeping Beech, and many others too numerous to be named. The lawn portion of the grounds is terminated, or rather divided, by a rectangular pond, and near here are fine examples of Pampas Grass; *Araucaria imbricata*, fully 30 feet high and 21 feet across the branches; also *Taxus adpressa* 12 feet through and half as much high.

On the other side of the pond, which supplies the water of the gardens, there never being any scarcity, is what is termed the village walk, a continuation of the walk across the pleasure grounds only severed by the pond. This walk is terminated by the summer house, and on each side on the grass in pairs are Conifers—*Picea nobilis glauca*, *Cupressus Lawsoniana gracilis*, *Picea lasiocarpa*, *Thuopsis borealis*, *Picea magnifica*, *Picea Pinsapo*, *Wellingtonia gigantea*, *Picea Nordmanniana*, and *Abies orientalis*. There is a border of herbaceous plants on the side next the kitchen garden with herbaceous plants and shrubs; conspicuous were *Funkia purpurea*, *Thalictrum aquilegifolium*, and *Funkia undulata variegata*. This walk looking from the summer house is a continuation of the walk across the lower part of the lawn, and is terminated by a procumbent Oak, broken in the middle by the pond, yet not directly, as it is somewhat out of the direct line, yet it causes a deviation, and that is marked by a Scotch Fir; but anything more appropriate could not well be conceived.

The flower garden, however, is the grand feature of this frontage. It is glowing with colours, as befits the situation amongst so much greenery, and the design is neat and appropriate. The carpet bedding is a great feature of Diddington, and I trust to allude to this upon a future occasion.—G. ABBEY.

(To be continued.)

### TROPICAL PRODUCTS IN SOUTHERN INDIA.

[From the Annual Report of the Agri-Horticultural Society of Madras.]

*The Season.*—Again a most abnormal season has to be chronicled. From the Government Astronomer's "Abstract of the Mean Meteorological Condition of Madras compared with the average of past years" to be found in the Supplement of the Fort St. George *Gazette* of 15th January, 1884, it appears that the total rainfall registered in 1883 at the Government Observatory, Madras, was 60.54 inches, being 11.83 inches above the average of 48.71 inches. From the same authority, too, we learn that the hottest day in 1883 was the 24th of May, when the thermometer in the shade reached 107.7°; while on the coldest night, that of 28th December, it fell to 61.4°. As might have been expected, a drought prolonged from November, 1882, to June, 1883, with an allowance of rain far below the average until October, followed by a downfall or series of downfalls as much above, involving much standing water, was hard upon vegetable life. Large numbers of the hardiest trees died in and around Madras, while the Society lost many of their new and most valued introductions. The *Landolphia florida*, Brazil Nuts and *Sapucaia Nuts*, mentioned in last year's report, all, or nearly all, gradually died out; while most of the Nutmegs, Mangosteens, and *Amherstia nobilis*, which require a moist climate, followed the many of their kind tried before in the Society's Gardens. No large or valuable specimen trees, however, died in the Gardens. The copious rains of October, November, and December, or some other natural influence, happily rescued the *Cycas* plants from the plague of grubs described last year, and each plant is now crowned with a grand whorl of perfect fronds.

*Fibre Plants.*—Of these *Fourcroya gigantea* may be placed in the front rank. The plant has long been known and grown in Madras under



the name of "Mauritius Hemp," and yields here a fibre of great length, extending even to 12 feet. The demand for 100,000 plants of *Fourcroya* mentioned in last annual report, unfortunately fell through before it was possible to comply with it, the gentleman who required the plants having in addition to a considerable number obtained from the Society, collected as many as he could make use of from other places. Large numbers of young plants, large and small, have, however, been distributed both in and near Madras and to distant parts of the Presidency, and no efforts have been spared to collect and store in the nurseries a large stock. The Society has at present a requisition on hand for 40,000 plants for the West Coast, where in a moister climate it will be interesting to hear whether its growth will be more luxuriant than in Madras.

*Manilla Hemp*.—The stock of *Musa textilis* possessed by the Society has been sufficient to meet the few demands for it made during the past year. The cost of cleaning and preparing this fibre has for the present apparently proved prohibitive; but it is hoped that the trials and experiments now in progress in connection with the recent exhibition in Calcutta, may result in bringing to light a machine suitable in prime cost and economy of working for the wants of the many who would willingly devote attention to this and similar large and easily grown fibre plants.

*Rhæa*.—The failure of the many attempts to win the £5000 premium offered by Government for the producer of a cheap and efficient machine for extracting the valuable fibre of *Boehmeria nivea*, appears to have suppressed the interest formerly taken in this plant, and the large stock once possessed by the Society has unfortunately dwindled away to a few specimens. Recent experiments seem, however, to have awakened enterprise in this direction, and some demands for plants and inquiries on the subject have been lately received. The stock in the Gardens will be increased as rapidly as possible.

*Bowstring Hemp*.—The several species of *Sanseveira* of which the Society possesses four, passing in the Gardens under the names *S. zeylanica*, *S. cylindrica*, *S. fasciata*, and *S. caniculata*, have also met with considerable attention. A large number of plants and cuttings have been distributed locally and to distant places, and some successful experiments have been made in propagation, which will enable the Society to comply with large demands on reasonable notice. Inquiries have also been received and answered as to the habits and capabilities of several other plants as producers of fibres and paper-making materials. The Manager of one of the Tambracherry Company's estates in the Wynaad, is reported to have sent to England a fibre gathered in the forest on one of his Company's estates, where it is said to grow in great profusion, which was valued in the London market at £70 per ton. The plant from which this fibre came is believed to be *Conocephalus niveus*, *Wight* (syns. *Morocarpus* or *Debregeasia longifolia*), a common plant on the Neilgherry Hills, belonging to the natural order of Nettles (*Urticaceæ*), and well known to and much used by the jungle men and coolies working on the coffee and other estates.

*Calotropis gigantea* is again provoking inquiry. It is one of our commonest wild shrubs, and contains perhaps the best fibre in India, producing also in abundance a plastic gum well worthy of attention.

*Paraguay Tea*.—From the report on the Horticultural Gardens, Lucknow, published last year, we learn that efforts are being made there to grow *Ilex paraguayensis* the source of "Mate," or "Paraguay Tea," now being advertised as a wholesome beverage in various English papers; that a healthy specimen is growing in the Wingfield Park at Lucknow; and that eight millions of pounds are said to be annually consumed in South America. This Society has for many years past possessed several handsome specimens of this plant, from which, though they have not been observed to flower in Madras, no difficulty is found in propagating freely. The habit of the plant here seems to be that of a large, spreading, and umbrageous shrub, with large, dark green, shining leaves, forming a most desirable tree to plant as a screen for unsightly objects, and one well worthy of being planted for its own beauty.

The Society will be glad to distribute plants to anyone who will test and report on their economic value. That the plant as growing here has properties which will bear investigation, is proved by the experience of the Honorary Secretary, who having chewed a fresh-gathered leaf found its effect on him to be that of a fairly violent emetic. A closely allied species, *Ilex vomitoria*, is said to be actually used by the natives in its own country for its emetic properties, a special pilgrimage being taken every spring to indulge in, or submit to its effects.

The parent plant of those in the Society's Gardens was brought out from Kew by Mr. Henry, when he entered the Society's service as Superintendent in 1870, and specimens have since been sent to Bangalore, Poona, and other places.

A large number of seedlings of *Theobroma Cacao* raised in the Gardens in 1882, were distributed to planters on the Shevaroy and Neilgherry Hills, and three or four plants reserved for the Gardens have thriven amazingly, so much so, that it seems to be almost possible that the members of this Society may one day consume chocolate grown and manufactured in Madras. A slightly older specimen planted out in the Cocoa-nut tope in partial shade, actually flowered and set fruit. Many previous experiments with cocoa in Madras have failed. It does well at Burliar.

#### COREOPSIS LANCEOLATA.

No one is scanty in his praises of the bright colours of *Coreopsis tinctoria* and its varieties *C. Atkinsoniana*, &c., but I think the finest in the whole genus is the lance-leaved Bug-nut (*C. lanceolata*), succeeding as it does so well in the ordinary flower border. It gives little trouble, requires

no staking, and flowers charmingly and freely even in such a dry season as this one has been, and that, too, near smoky London. So beautiful and attractive are its flowers that in a whole border of select plants this stands out prominently, well entitling it to its synonym of *C. grandiflora*.

The flowers are about the size of a crown piece, of a deep sulphur yellow colour, with regular deep-notched edged rays. The prominent disk is unfortunately of the same tone of colour as the ray florets. The lance-shaped leaves are a pretty soft dark green, and the habit of the plant very neat. It is easily increased by seeds or by division of the roots, which is best done in autumn after the flowering is over.—S.

#### HIMALAYAN PRIMROSES.

To all lovers of *Primulas*, and there are few who have not some interest in these charming early harbingers of spring, it is indeed no pleasant confession that out of the forty-three *Primroses* found in the Himalayas of Northern India not more than a dozen, if as many, are in general cultivation in this country; and that, notwithstanding the fact that many seeds of various plants are collected in the hills yearly, the number of *Primulas* increase very slowly. If the collector, instead of going only at stated intervals, or perhaps only once in a year, as is generally the case at present, had a temporary residence in close proximity to his hunting grounds, he could watch the plants coming on, in the meanwhile taking notes regarding their situation, mode of growth, and the conditions under which they grow, until the harvest season arrived, we are satisfied that his work would be greatly facilitated, and the number of good *Primulas* increased. It would almost be worth the consideration of some enterprising hardy Alpine plant firm to send a collector out specially, because many plants are over before the collectors reach them.

With the exception of the one or two latest novelties introduced from these regions—and sufficient time has not elapsed to prove their hardiness—nearly all the others with proper attention as regards position and climate may be said to be hardy enough to withstand all but our most rigorous and damp seasons. The conditions under which they thrive can be imitated with very little trouble, although somewhat different from the majority of hardy plants in cultivation. In the first place, a shady cool nook is absolutely essential to their well-being, and it would not be hard to find such a nook in almost any garden. In the second, they must receive plenty of water without its being stagnant; and in winter means must be taken to ward off the excessive damp, which may be easily done with pieces of glass or leaves, as the leaves all die in winter. The following are a few of the hardiest and best known.

*P. SIKKIMENSIS*.—The Sikkim *Primrose*, of which the illustration (fig. 22) is a good representation, is, without exception, the easiest grown and the most floriferous of those generally cultivated. A short time since a clump of this lovely species was flowering with remarkable freedom on the old rockwork at Kew, in a semicircular bed or recess on a level with the walk. The plants were robust and healthy, the leaves being nearly a foot long; the flowers large and well coloured, emitting a fragrance vying with the *Stephanotis* of our greenhouses. Another patch higher up on the same rockery was barely healthy. This *Primrose* has been grown very successfully in pots, and may prove very useful for early spring decoration, but to see it in all its beauty a few scores must be planted together. It has been well termed the pride of the alpine *Primulas*. The bed in which they were grown was raised about 3 inches higher at the back than the front, so as to give a free drainage for surface moisture, and to guard against it remaining near the crowns. The soil used is a mixture of half and half peat and loam, with a good dressing of strong manure, and the position shady, with just an hour's sun in the early morning.

The leaves are about a foot long, including petiole, obovate oblong, with doubly and very sharply serrated margins, of a very thin texture, clearly showing the pretty reticulated venation, bright shining green above, paler underneath, and sometimes mealy. The flower stalk grows about 18 inches high, carrying the umbel of from six to a dozen or more bright lemon-yellow flowers, about an inch in diameter, drooping. It flowers in May and June, and is a native of Lachen, and Lachong, where it is said to cover acres with a yellow carpet. It is increased from seed, which ripens freely.

*P. CAPITATA*.—This has much the habit of *P. farinosa*, but with much larger flower heads; it is a very free and comparatively easily cultivated species, requiring dry gravelly positions, where it proves quite hardy. It grows about a foot in height, and the leaves, which are produced from the crown, are about 6 inches long, oblong lance-shaped, and covered underneath with a fine sulphury powder. The flowers, which are borne in crowded globose heads, are a beautiful deep purple, faintly fragrant. It should be planted so as to escape the noonday sun. It is a native of Sikkim Himalayas, and flowers may be had in succession during the greater part of summer. The varieties *grandiflora*, *cœrulea*, and *violacea* are all improvements on



the type, the latter especially, and are well worth the attention of hybridisers.

**P. STUARTII.**—Amongst the yellow-flowered species this may be said to rank next to *P. sikkimensis* in beauty, although unfortunately it is a very shy flowerer. It succeeds under the conditions given for *sikkimensis*, is a very vigorous grower, and will often reach over 2 feet in height. The leaves are about a foot long, broadly lanceolate, with a bright shining surface, and are densely covered underneath with a yellowish meal; the margins are finely serrated. The flowers are produced in close umbels, salver-shaped, more or less campanulate, of a dull greyish yellow, with a bright orange ring round the eye. A native of the mountainous parts of India, and it flowers in June and July.

**P. ROSEA.**—This is the most brilliantly coloured of all the *Primulas*,

The other species are *P. floribunda*, a bright yellow free-flowered species; *P. mollis*, rose-coloured; *P. denticulata*, purple; *P. sapphirina*, *P. minutissima*, *P. involucrata*, and the King of *Primulas*, *P. prolifera*, only introduced last year, which will be noticed on another occasion, and a few which are either too well known to need description or are not sufficiently proved.—D.

#### LIVERPOOL SHOW.

As a late summer horticultural Exhibition that which is annually held in the beautiful Sefton Park, Liverpool, certainly ranks among the best in the country. Perhaps the display to be noticed may not have been quite so extensive as some that have preceded it, yet it was undoubtedly a most excellent one—a credit to the exhibitors, the Society, and the district. The plants, it may be safely said, could not be surpassed at this season of the



Fig. 22.—*PRIMULA SIKKIMENSIS*.

and may also be classed as the hardiest of all the Himalayan Primroses. It grows well in pots, but is not seen to its best advantage owing to the room required by its roots, and often dwarfing the plant if allowed to get root-bound. With us it does nowhere better than in a peaty bog, where uncramped it has a vigorous habit, the flower stem rising well above the dense light green foliage making a charming contrast. The flowers are deep, almost pure carmine when they first open, but become paler and assume a shade of purple as they expand. A native of the Western Himalayas, and it flowers in May and June. The variety *grandiflora* has larger flowers and a more robust habit.

year, as will be admitted when the usually redoubtable Mr. Cypher had to be content with second place in the principal classes; all the greater honour therefore, to the successful local cultivator Mr. Mease, the skilful gardener to C. W. Neumann, Esq., Wyncote, Allerton, who unquestionably is the owner of some of the grandest specimens in Britain. His *Crotons* are especially remarkable, one specimen of *Prince of Wales* being probably the finest that has ever been staged. This was the premier plant of the Show. The "effect" groups, though not quite of the most imposing character, were better than on any former occasion. Cut flowers were excellent, Roses being particularly fresh for the time of year, especially those staged by the able cultivator and accomplished exhibitor Mr. T. B. Hall; while in the boxes in which tasteful arrangement was the test of merit, it was regrettable that the charming stand of Mr. E. Claxton was not in accordance with the stipulations, being too small, yet the Judges, as a recognition of its superiority, awarded it an extra prize. As will be seen below, there was some falling-off in quantity in the fruit department, but, nevertheless, splendid produce was staged; the same remark applies to vegetables. There was a good array of horticultural structures and appliances, and altogether the Show that opened on the 2nd inst. in quality and variety must take a foremost place amongst the leading exhibitions of the season. Owing to the unfortunate illness of Mr. Gore, the able Secretary of the Society, and the late delivery of the prize cards, the routine work was rendered the more exacting to Mr. Richardson, Mr. Bridge, and other willing assistants, who did all that was possible under the circumstances; but as the whole of the cards could not be placed before we left the ground a few of the names of the prizewinners are necessarily omitted.

#### STOVE AND GREENHOUSE PLANTS.

The chief collections—and grand they were—were arranged on the ground down the centre of a large marquee. In the class for twelve specimens, six foliage and six flowering, Mr. Mease secured the premier position with the following:—*Crotons* Weismanni, variegatus, and *Queen Victoria*, each from 8 to 9 feet in diameter, admirably furnished and in excellent colour; *Latania borbonica*, 12 feet across; *Gleichenia Mendelli*, 7 to 8 feet; *Pritchardia pacifica* with five leaves each, 3 to 4 feet in diameter; *Erica Irbyana*, 3 feet, fresh; *E. æmula* about the same size, densely flowered; *Bougainvillea glabra*, 5 to 6 feet across, a little thin; *Clerodendron Balfourianum*, 5 to 6 feet, in excellent condition; *Ixora Williamsi*, a neat pyramid 3½ feet high, 2½ feet across the base; and *Allamanda Hendersoni*, 4 feet in diameter, fresh, vigorous,



and well flowered. Mr. James Cypher, Cheltenham, followed rather closely, but was overweighted in the foliage division. His plants were *Crotons* *Disraeli* and *Queen Victoria*, 6 to 7 feet in diameter, and very fine; *Latania borbonica*, 7 feet, fresh; *Cycas revoluta*, 7 feet; *C. circinalis*, 10 feet; *Dasy-lirion acrotrichum*, good; *Ericas* *retorta* major and *æmula*, 3½ feet; *Clerodendron Balfourianum*, 5 feet, vigorous and excellently flowered; *Allamanda grandiflora*, a golden oval 5 feet high; *Ixora Williamsi* with thirty fine trusses; and a small *Stephanotis*, almost hidden with its wax-like flowers. The value of the prizes in the two classes was £15 and £10 respectively. In the class for ten plants, five flowering and five foliage, Mr. Cox, gardener to W. H. Watts, Esq., Wavertree, secured the first prize of £10 with *Kalosanthus* Dr. E. Regel, 5 feet in diameter, a perfect half globe, and quite a bouquet of flowers, probably 300 trusses, but a trifle pale in colour; *Ixora coccinea* *superba*, 3 feet across with fifty richly coloured trusses; *Erica exquisita*, 2 to 3 feet, extremely neat; *Ixora Dixiana*; *Alocasia macrorrhiza* *variegata*, effective; *Latania borbonica*, 6 feet in diameter; *Croton Queen Victoria*, about the same size; and a fine healthy *Dicksonia*. Mr. Jellico, gardener to F. H. Gossage, Esq., Woolton, was an excellent second, two large Palms; *Croton variegatus*, 7 to 8 feet in diameter, and in excellent condition; *Davallia Mooreana*, 5 to 6 feet across; *Bougainvillea glabra*, *Allamanda Hendersoni*, and an *Eucharis* with twenty spikes being the most noteworthy plants. In the class for six specimens Mr. Cypher secured the first position with a superb example of *Ixora regina*, 3 feet across and with twenty to thirty magnificent trusses; *I. Westi*, a charming variety, the plant bearing twenty trusses of its ivory-white flowers; *Bougainvillea glabra*; *Erica ampullacea* *Barnesi*, 3 feet; and *E. obbata* *purpurea* of the same size, very fresh; and *Anthurium Schertzerianum*. Mr. Mease followed closely with *Erica Parmenteria rosea*, a perfect half globe densely flowered; *Anthurium Andreanum* with eight spathes; *Phœnocomia prolifera* *Barnesi*, very fresh and fine; a large but not superior *Stephanotis*, and *Allamanda grandiflora*. Mr. Cox was first with four plants, the best being *Plumbago capensis*. Mr. Cubbon, gardener to Mrs. Alison Johnson, Woolton Heys, staged the best stove plant in the single specimen class—*Allamanda Hendersoni*, a finely flowered oval 5 feet high. In the corresponding class (greenhouse) Mr. Mease won the chief position with *Erica ampullacea Williamsi*, 3½ feet in diameter.

**Fine-foliaged Plants.**—In the class for eight specimens Mr. Mease was again first with *Croton Prince of Wales*, a wonderful example, 8 feet high and 7 feet in diameter, in perfect health and superb colour; *C. Williamsi*, 7 feet across, and richly coloured; *C. Disraeli*, 6 to 7 feet in diameter; *C. Mortii*, smaller, but of clear golden hue; *Areca lutescens*, *Latania borbonica*, a small plant of *Gleichenia rupestris*, and a good well-marked example of *Alocasia macrorrhiza* *variegata*. Mr. Cubbon was a good second with *Cycas revoluta*, *Dicksonia* (good), *Latania borbonica*, *Seaforthia elegans*, *Crotons* *Weismannii* and *interruptus*, and two *Alocasias*. Mr. Jellico was placed first in the class for six plants with *Areca lutescens* and *C. Weismannii*, good; *Dracæna Veitchii*, very fine; *Adiantum farleyense*; and a beautiful example of *Croton Hawkerii*, 3 feet in diameter. Mr. Thomas Foster, gardener to John Brancker, Esq., Wavertree, followed with smaller but creditable specimens.

**Ferns.**—These were admirably represented, most of the plants being fresh and healthy, and not a few fine. In the class for eight exotic Ferns Mr. Stephenson, gardener to Mrs. Horsfall, Grassendale, well won the foremost position with *Davallia Mooreana*, 7 to 8 feet in diameter, and in splendid health; *Alsophila Moorei*, *Gymnogramma chrysophylla*, *Davallia bullata*, excellent; *Adiantum farleyense*, *A. formosum*, *Dictyogramma variegata*, and a small *Dicksonia*. Mr. Evans, gardener to Mrs. Lockett, Aigburth, was second with smaller plants, *Davallia chærophylla* being most elegant, and *Microlepia hirta cristata* fresh and good. Mr. Lowndes, gardener to S. S. Parker, Esq., Sudley Road, Aigburth, had the remaining prize with well-grown smaller plants. For six plants the first prize was worthily awarded to Mr. T. Gowen, gardener to James Cunningham, Esq., Mossley Hill, with admirably grown examples of *Goniophlebium subauriculatum*, with fronds 5 feet long; *Pteris scaberula*, 4 feet across; *Gymnogramma peruviana argyrophylla*, superb; *Davallia Mooreana*, *Adiantum Veitchii*, and *Gleichenia Speluncæ*; Messrs. Hurst (gardener to W. Bowring, Esq.) and Cox following in the order named with good collections. For one Tree Fern Mr. Cubbon was first; Mr. W. Evans securing the first prize in the single specimen class for Ferns with a beautifully fresh example of *Goniophlebium*, followed by Mr. J. Johnson, gardener to G. W. Moss, Esq., Aigburth, with *Adiantum farleyense*, 4 to 5 feet across; and Mr. Gowen with *Gymnogramma peruviana argyrophylla* in excellent condition. Hardy Ferns were less striking. For six plants Mr. Foster was first with *Lastrea Filix-mas cristata*, *L. F. m. grandiceps*, *L. F. foemina plumosa*, *Onoclea sensibilis*, and a seedling *Athyrium*, very much crested. Mr. Barber, gardener to Mrs. Barnsley, St. Michael's Hamlet, was second; and Mr. Cubbon third; Mr. Foster securing the chief prize for three Filmy Ferns with *Todea superba* and *pellucida*, and *Trichomanes radicans*. Mr. Cubbon won the chief prize for Lycopods.

**Ericas.**—Very fresh, well-grown, and excellently flowered examples were staged in the class for four specimens, in which Mr. Mease secured the first position with *E. æmula*, 2½ feet in diameter, densely flowered; *E. metulæflora*, covered with rich red flowers, the second crop this year, and effective; *E. Neplus Ultra*, white, fine; and *E. insignis* with superior flowers. Mr. Cypher was second with smaller but good plants.

**Tuberous Begonias.**—Of these there was a brilliant display, the plants being at the least equal to any that have been staged at any show we have seen. Messrs. J. Laing & Co., Forest Hill, provided a piece of plate as the first prize in the class for ten plants, which was won by Mr. Mease, whose specimens ranged from 3 feet to 5 feet in diameter, Mr. Evans being a good second, and Mr. Johnson third, the varieties of the last-named exhibitor being very choice, but the plants not so large or well-flowered as the others. In the class for six plants Mr. Stephenson was first with specimens 3 to 4 feet in diameter, and Mr. Hurst, gardener to W. B. Bowring, Esq., second. Mr. Evans was first in the class for three plants with splendid examples of culture, Mr. Johnson being second with taller but very effective specimens; and Mr. Cox third with dwarf plants that would have been first in the majority of shows that we have this year attended. In the single specimen class Mr. Hurst secured the leading position, his plant being 5 feet in diameter, a perfectly symmetrical and well-flowered specimen. We failed

to obtain the names of the other successful exhibitors in the well-filled classes.

**Achimenes.**—Several excellent pans of these valuable summer-flowering plants were exhibited. Mr. Mease was in his usual place—first, with four pans, staging admirably *Longiflora* major, *Admiration*, *Celestial*, and *Frau Bruno*. Mr. Hurst was second with dwarfer but good plants; and Mr. Gowen an excellent third.

**Caladiums.**—These were very fine indeed, especially Mr. Mease's first-prize collection of six plants, which were 5 feet in diameter, with very large well-coloured foliage. The varieties were *Candidum*, very beautiful; *Magnificum*, *Albert Edward*, *Auguste Lemoine*, good; *Chantini*, and *Meyerbeer*. The second prize fell to Mr. Leathes, gardener to A. M. Anderson, Esq., Prince's Park, and the third to Mr. Eaton, gardener to W. H. Shirley, Esq., Allerton House, both with good examples of culture.

**Petunias.**—These were exceedingly variable, the only noteworthy plants to which prize cards were attached being six double varieties exhibited by Mr. Stephenson, which certainly merited what they received—the first position, as they were dwarf and sturdy, each bearing about fifty fine flowers. The other collections were irregular.

**Coleuses.**—We are not able to speak in high terms of these easily grown plants. The first-prize six specimens of Mr. Evans were healthy and well trained, but deficient in colour, and Mr. Bustard's second-prize plants had the same defect—want of colour.

**Fuchsias.**—Liverpool is evidently not a "Fuchsia district," the majority of the plants staged being very far from the average merit of prizewinning examples at most exhibitions. Only one collection needing attention is the first group of six plants staged by Mr. Hurst, which were healthy, well flowered, and not distorted by severe training. The most effective variety was the *Earl of Beaconsfield*.

**Zonal Pelargoniums.**—With the exception of the magnificent specimens staged at the York and Leeds Shows, the plants at the Show under notice were of full average quality, ranging from 3 to 4 feet in diameter, well trained without being unduly flattened, with healthy foliage, as well as good and numerous trusses of flowers. Messrs. Stephenson, Bustard, and Fleming and Sons were the leading prizetakers in the classes.

**Gloxinias** were remarkably fine, and never were better staged at this Society's Show, many of the plants in the best collection carrying as many as fifty or sixty flowers each, and wonderfully fresh. The names of the only prizewinners we could obtain are Mr. Gowen and Mr. W. Evans.

**Table Plants** were neat throughout the whole of the exhibits, and wonder-fully well grown, although there were not so many collections staged as we have before seen at previous shows. The successful exhibitor of six plants was Mr. G. Mease, gardener to W. Nichol, Esq., Aigburth, who staged an excellent, well-grown, and neat assortment of choice plants. Mr. R. Cubbon and Mr. G. Park were second and third respectively, both showing well.

**Orchids** were not numerous, but the exhibits were of superior merit and most creditable to the competitors who staged plants for the prizes offered. For four plants E. Harvey, Esq., Aigburth, was deservedly placed first—having very fine *Saccolabium guttatum* with three fine spikes; a well-flowered piece of *Zygopetalum Gautieri*, *Cattleya crispa*, good; and a magnificent plant of *Cattleya guttata Leopoldii* with three of its large spikes of bloom. Mr. J. Edwards, gardener to T. S. Walker, Esq., Rodney Street, was a good second with *Dendrobium Dearii* with five spikes, *Saccolabium guttatum*, good; *Odontoglossum Roezlii*, and *Aerides quinquevulnerum*. For one plant Mr. W. Mease took the lead with *Saccolabium Blumei majus* with three fine spikes; Mr. J. Brancker second, and Mr. R. Cubbon third.

**EFFECT GROUPS.**—Three classes were provided for miscellaneous plants arranged for effect, the chief being a circular group occupying space not exceeding 250 square feet, for which a gold medal was offered. This was well won by Messrs. R. Ker & Son, Aigburth, Liverpool. In the centre of the space a pyramid, having a base 6 feet in diameter, was raised of Maiden-hair Ferns with *Liliums* interspersed, the apex of the pyramid being formed of a neat plant 2 or 3 feet high of *Dracæna Baptisti*, with *Panicum variegatum* falling over and covering the pot. The remaining portion of the space was occupied mainly with *Adiantum cuneatum*, so as to form a saucer-like surface; and rising from this here and there, as if on pedestals, were beautiful *Crotons* and Palms, the pots hidden by *Selaginellas* and *Panicums*. A few *Statices* gave colour to the group, which was margined with variegated *Dactylis* and Ferns. The arrangement was perhaps a little formal or "dotted," but was undoubtedly effective. The second prize was won by Mr. F. Francis, Wavertree. In the smaller circular group of 150 square feet Mr. Mease secured the chief prize with a light and charming arrangement. The prominent plant was a *Phoenix reclinata* on a central mound of Ferns 3 feet high, with which was associated *Campanula garganica*. The base surrounding was occupied with Ferns, small *Coleuses*, *Caladium argyrites*, &c., with larger plants rising above them of *Crotons*, Palms, *Rhodanthes*, the edging being Ferns, *Gloxinias*, and *Panicums*. Mr. Cox was second with a mass of Ferns, with *Franseria*, *Campanula pyramidalis* rising from them at intervals of 3 feet; Mr. Cubbon being third, his group being lacking in colour. Mr. Jellico was the chief prizetaker with a semi-circular group, with an effective and well-balanced arrangement of flowers and Ferns.

In the same tent Messrs. Ker & Sons had a group of richly coloured *Crotons*, and the Liverpool Horticultural Company some charming groups of *Roses*, in which the small *Cluster Roses* *Mignonette* and *Little Pet* were seen to advantage as decorative plants. Another group by the same firm having a centre of the single velvety crimson *Dahlia* John Cowan (very rich), surrounded with excellent *Bouvardias*, was highly effective. This firm also exhibited wonderfully strong Vines in pots, and Messrs. Ker had also very fine and firm examples. Messrs. F. & A. Dickson, Upton Nurseries, Chester, and Ker & Sons, Aigburth, had extensive collections of new and select stove and greenhouse plants; Messrs. James Dickson and Sons very fine *Roses* and cut flowers of herbaceous plants; Messrs. Cannell and Co., Swanley, magnificent *Zonal Pelargoniums* and *Tuberous Begonias*; Messrs. J. R. Pearson, Chilwell, a fine bank of *Zonal Pelargoniums*; and Messrs. Laing, Forest Hill, splendid *Begonias*. For the above exhibits certificates of merit were awarded, and a special certificate to Messrs. Cannell for *Heliotrope Swanley Gem*, a dark variety with an enormous truss of flowers.

**Hardy Trees and Shrubs** were well represented by Messrs. Caldwell and



Sons, Knutsford, Cheshire, who arranged a large and imposing group of very choice trees and shrubs near the entrance, and for which the Society's gold medal was awarded.

#### CUT FLOWERS.

*Roses.*—Considering the weather during the past two or three weeks the blooms were numerous, of fine size and substance, while the colour was remarkably bright. In the class for forty-eight single blooms three collections were staged. Messrs. F. & A. Dickson & Sons, Upton Nurseries, Chester, gained the premier position with a grand collection of very bright flowers. Some of the finest were Charles Lefebvre, Madame Eugénie Verdier, very good; Louis Peyronny, Barthelemy Joubert, Leopold I., François Fontaine, Duke of Edinburgh, John Stuart Mill, Souvenir de Spa, Ulrich Brunner fils, good; Baron Adolphe de Rothschild, and Lord Beaconsfield. Messrs. Perkins & Sons, Warwick Road, Coventry, were a good second, and staged really fine flowers of Mrs. Laxton, Mlle. Marie Rady, Mrs. Jowitt, Niphotos, Louis Van Houtte, Alfred Colomb, and Marie Baumann. Messrs. R. Mack & Sons, Catterick Bridge, Yorkshire, the remaining prize with fresh even blooms. In the corresponding amateurs' class for twenty-four blooms T. B. Hall, Esq., Larchwood, Rock Ferry, was well to the front with first-rate blooms, amongst them being very noticeable Dupuy Jamain, Maréchal Vaillant, grand; Général Jacqueminot, bright; Alfred Colomb, La France, Madame Victor Verdier, and Etienne Levet. The remaining collections in this class need no comment. For twelve Tea and Noisette blooms Mr. T. B. Hall was again the chief winner with some fine blooms of Comtesse Riza du Parc, Belle Lyonnaise, Comtesse de Nadaillac, Comte de Paris, Marie Van Houtte, and Madame Lambard. Messrs. Perkins & Sons were second, having a good bloom of Maréchal Niel, and a bloom of Madame Eugénie Verdier, a new Rose with a striking canary-coloured centre, but the bloom staged was not a good one. Messrs. R. Mack & Son the remaining prize. For twelve Hybrid Perpetuals Mr. Hall again took the lead, having good Beauty of Waltham, La France, Duke of Edinburgh, Alfred Colomb, and Maréchal Vaillant. Mr. R. Brownhill gained the second award with neat but smaller blooms. Mr. W. E. Hale, Higher Bebington, the remaining prize. For twelve blooms of any dark variety only two collections were staged, Messrs. Mack & Son being placed first with a fine box of Alfred Colomb, and Messrs. F. & A. Dickson & Sons a close second with Mrs. Jowitt, very good. Two boxes were staged by the same exhibitors for twelve blooms of any light Rose, the last-named exhibitor being first with Madame Eugénie Verdier, and Messrs. Mack & Son second with Comtesse de Serenye. For the best and most tastefully arranged box of Roses Mr. R. G. Waterman, gardener to A. Tate, Esq., was deservedly first with an assortment of Tea and Hybrid Perpetuals, single blooms, shown on moss with Adiantum cuneatum freely intermixed. Mr. T. B. Hall second with a neat but heavier arrangement, having staged the blooms in bunches of three. The most effectively arranged collection was a box of Tea blooms intermixed with Adiantum cuneatum and Selaginella Wildenovi, staged by Mr. E. Claxton, The Rosery, Allerton, but the box in size was not in accordance with stipulations in the schedule, and was therefore awarded an extra prize.

*Stove and Greenhouse Flowers* were, as they usually are, shown in large bunches, and attracted considerable attention. Mr. W. Mease took the lead in the class for eighteen varieties with perhaps the finest collection we have ever seen staged, Mr. W. Bustard being placed second with a very good lot, but much smaller bunches. The winning collection was composed of Cattleia crista superba, Miltonia spectabilis, Disa grandiflora, Anthurium Andreanum, Bougainvillea glabra, Pancratium fragrans, Ixora Duffi, Dipladenia Brearleyana, Erica insignis, Allamanda nobilis, Kalosanthes coccinea, and a bunch of its variety superba, Lapageria alba and L. rosea, Stephanotis floribunda, and Gloriosa superba. For twelve bunches the only name attached to the exhibits was Mr. J. Warrington, who was placed second, a first and third award being given.

*Herbaceous Flowers.*—These were really charming, and the competition in the various classes was good and keen. The display was of unusual excellence; the large bunches of each variety rendered the collections very striking and effective. For twenty-four varieties Mr. W. Mease was first with a charming collection composed of Dianthus Napoleon III., Phlox Virgo Marie, P. Brilliant, Pentstemon Mrs. Sutherland Walker, P. Ethel, Gladiolus brechleyensis, Lilium auratum, L. chalcedonicum, L. longiflorum, Aconitum Napellus, Spiraea Ulmaria variegata, Telekia speciosissima, Achillea Ptarmica fl.-pl., Gaillardia grandiflora, Helenium pumilum, Spiraea Filipendula fl.-pl., Potentilla maculata, Spiraea venusta, Vicia sylvatica, Monarda didyma, Sedum maximum, Agrostemma rosea, and Alstrœmeria aurea. Mr. J. Bostock, gardener to E. Harvey, Esq., Riversdale Road, Aigburth, a close second with an excellent collection; Mr. W. Bustard the remaining prize with a very nice lot. In the amateurs' class for twelve varieties Mr. J. Warrington was first, and Messrs. R. G. Waterman and A. R. Cox second and third. Mr. R. G. Waterman was again first in the corresponding class for the same number of varieties. Prizes given by Mr. T. S. Ware, Hale Farm Nurseries, Tottenham, London.

*Bouquets* on the whole were very good, and the prizes offered were well competed for. Mr. J. Cypher took the lead for two, followed closely by Messrs. Turner Brothers, Allerton, and Mr. G. Downes, Lodge Lane, who were awarded the remaining prizes in the order here named. For one Messrs. W. Mease and T. Robinson, Mossley Hill, were the prizewinners. The epergnes or vases for table decoration were only fairly represented, the prizewinners being Mr. P. Barber, gardener to Mrs. Barnsley, Messrs. W. Bustard and C. Copple.

*Carnations, Pansies, and Dahlias* were all fairly well represented considering the limited number of classes devoted to them. For eighteen varieties of Carnations Mr. R. Brownhill gained the principal position with really good blooms of John Bull, Robert Scott, Dreadnought, Royal Visit, Beauty of Cheltenham, William IV., Mrs. Anderson, Miss Gibbs, Queen of Summer, John Keet, Clara, Mary Ann, Dr. Epps, Mrs. Brown, and Lady Carrington. For Pansies Messrs. R. Brownhill, J. Staneyer, and C. Townsend were the successful competitors in the order here named. For Dahlias the principal prizewinners in the two classes were Messrs. R. G. Waterman, J. Jellico, and W. Bustard.

#### FRUIT.

The show of fruit was good, and the classes devoted to it were well filled;

in fact the competition in some of them was very keen. The Grape classes were wonderfully well filled, but on the whole not quite so numerous as we have seen at previous shows, especially the Black Hamburgs, while the Muscats were finer in the berry and finish generally than we have before seen them. In the class for eight dishes, distinct kinds, Mr. Edwards, gardener to the Duke of St. Albans, Bestwood, Nottingham, gained the premier position with good Black Hamburg and Muscat of Alexandria Grapes, the latter being fine in every respect, but scarcely ripe; Melon William Tillery; Elruge Nectarines, good; Chancellor Peaches, very fine; White Ischia Figs, Bigarreau Cherries, and a good Queen Pine. Mr. Ward, gardener to T. H. Oakes, Esq., Riddings House, Alfreton, was a close second, having superb bunches of Muscat Hamburg Grapes, even in the berry, large in the bunch, and splendidly finished; such examples are seldom seen. His other good dishes being Read's Scarlet-flesh Melon, Bellegarde Peach, Violette Hâtive Nectarines, and Jefferson Plums. Mr. Wallace, gardener to Rev. W. Sneyd, Keele Hall, Staffordshire, was a good third. For six dishes Mr. T. Elsworthy, gardener to A. R. Gladstone, Esq., Court Hey, took the lead with superior examples of Black Hamburg and Muscat of Alexandria Grapes; Bellegarde Peaches, large and splendidly coloured; good Elruge Nectarines, Scarlet Premier Melon, and Brown Turkey Figs. Mr. W. Mease followed closely with very fair Grapes, Best of All Melon, good Chancellor Peaches, and Pine Apple Nectarines. Mr. F. Ferguson, gardener to Mrs. Paterson, Kirklands, Rock Ferry, received the remaining prize, having very creditable examples of fruit.

*Pines* were not numerous, but the fruits staged were good examples of cultivation. For two fruits Mr. J. Bennett, gardener to the Hon. C. H. Wynn, North Wales, was the only exhibitor, and was awarded the first prize for good Queens. For one fruit the same exhibitor was again first with fine large fruit of Smooth Cayenne. Mr. J. Stephenson, gardener to Mrs. Horsfall, Grassendale, followed closely with a good Queen.

*Grapes.*—These were numerous, and in some classes the competition was very keen, the exhibits throughout very highly creditable, while many examples were of superior merit. In the class for four varieties, distinct, two bunches of white and two of black, six collections were staged. Mr. C. A. Young, gardener to J. Evans, Esq., Hurst House, Prescott, took the lead with bunches of large size, but scarcely ripe, the varieties being Madresfield Court, Muscat of Alexandria, Foster's Seedling, and Black Hamburg. Mr. G. Middleton, gardener to R. Pilkington, Esq., Windie Hall, was a good second with a fair-sized bunch of Muscat of Alexandria well finished, and with berries of a very large size; the bunch of Black Hamburg was well finished, while the bunch of Madresfield Court was all that could be desired except in finish, which was scarcely perfect, the weak bunch in this collection being Buckland Sweetwater; Mr. R. Brownhill, gardener to H. Hargraves, Esq., Ravenswood, Rock Ferry, being the remaining successful exhibitor, and staged Muscat of Alexandria in good condition. Some thirty bunches were staged for the three prizes offered for two bunches of Black Hamburg, and some really grand examples were exhibited. Mr. Ward gained the premier position with faultless examples. Mr. J. Barker, gardener to J. T. Raynes, Esq., Rock Ferry, followed closely with larger bunches with equally fine berries, one bunch being a little under-coloured at the point. Mr. W. Wilson, gardener to H. Cunningham, Esq., Gateacre, third with smaller but well-finished bunches. For two bunches of Muscat of Alexandria Mr. G. Middleton was well ahead with well-finished bunches and berries of an enormous size, such that are seldom seen in this variety. The examples of this Grape staged by this exhibitor were conspicuous for the size of their berries. Mr. Elsworthy followed with fine bunches, well finished, but considerably less in the berry; Mr. W. Mease being a capital third. Six collections were staged. For two bunches, Black Hamburgs excluded, ten collections were staged. Mr. Ward took the lead with fine examples of Madresfield Court, the bunches and berries being large and the finish and bloom perfect. Mr. W. Wilson followed with large well-finished bunches of Alicante; and Mrs. Lawton, Lawton, Cheshire, third with grand bunches, scarcely ripe, of the same variety as shown by the first-named exhibitor. For two bunches of white Grapes, not Muscats, Mr. Chappell, gardener to S. Ledward, Esq., Hillbank, Frankly, Birkenhead, was well to the front with the finest examples of Buckland Sweetwater in the Show; Mr. J. Bennett being second with a fair bunch of Duke of Buccleuch; and Mr. J. T. Ebbatt, gardener to F. Wright, Esq., Swanwick, Alfreton, third with Golden Queen. Some very large bunches of Foster's Seedling were shown in this class, but most of the samples were scarcely ripe.

*Peaches and Nectarines.*—These we have seen more numerous at previous exhibitions held by the Association, but the quality of the fruit on this occasion has never been surpassed. The examples of Bellegarde staged by Mr. T. Elsworthy are worthy of special note, for they were remarkably large and superbly coloured. In the open class for one dish Mr. Elsworthy took the lead with Bellegarde, followed by Mr. Edmonds, who staged grand fruit of Royal George; Mr. C. Finuigan, Palace Gardens, New Brighton, third with very large fruit, eight dishes being staged. In the corresponding class for one dish the same exhibitor was again first with the same variety equally good. Mr. J. Warrington, gardener to T. Bright, Esq., second; and Mr. W. Evans, gardener to Mrs. Lockett, third, twelve dishes being staged in this class, and the fruit in every instance was really first-rate. In the open class for one dish of Nectarines about ten dishes were staged, Mr. J. Bennett taking the lead with a good Pine Apple; Mr. H. Hurst second with the same variety; and Mr. Wallace the remaining prize with well-coloured fruits of Downton. About the same number of competitors staged fruit in the corresponding class for one dish. Mr. Jos. Staneyer was first with Elruge, Mr. J. Bennett second with Violette Hâtive, and Mr. J. Lambert third with Pineapple.

*Melons.*—These were well represented, some thirty fruits being staged in the two classes devoted to them. For a green-fleshed variety Mr. Hartwell, gardener to Lord Newborough, Carnarvon, was first with Bailey's Green-flesh, and Mr. Edmonds second, no name being attached to the third-prize exhibit. No names were attached to the first and second exhibits in the class for a scarlet-fleshed variety, Mr. W. Mease being third with a good fruit of Masterpiece.

*Hardy Fruits.*—For one dish of Strawberries Mr. J. Bennett took the lead with Elton Pine, followed by Messrs. J. Staneyer and W. Mease, the former staging good fruit of Stirling Castle, and the latter of Bonnie Lassie. Mr.



W. Evans was first in the class for one dish of Cherries. Some very fine fruit was staged in the class for six dishes of fruit, and Mr. J. Lambert was deservedly placed first. The prize cards not being placed we are unable to name the second and third prizewinners.

In the class for the best arranged basket of miscellaneous fruit two collections were staged, Mr. W. Mease being placed first with a very effective and handsomely arranged basket, which at once told with the Judges, while the exhibit of Mr. Elsworthy contained perhaps better fruit.

#### VEGETABLES.

The schedule provided eleven classes for vegetables, and the prizes were well contested for, and the exhibits generally being of the best quality. In the open class for a collection of twelve dishes there were only two exhibitors. Mr. T. Almond, market gardener, Maghull, took the lead with neat well-grown examples of Telegraph Peas, Tripoli Onions, International Kidney Potatoes, Canadian Wonder Beans, Champion Horn Carrot, Conqueror Tomato, and a good dish of Mushrooms. The other collection well deserved the second prize, which it won, but no name was placed upon the prize card.

In the amateurs' class for the same number of dishes seven collections were staged, the whole being most creditable to the exhibitors. Mr. J. Lambert, gardener to Col. Wingfield, Salop, gained the premier position with grand dishes of Canadian Wonder Beans, Snowball Turnips, Pine Apple Beet, very fine; Musselburgh Leeks, good; Tripoli Onions, clear, well grown; Intermediate Carrots, Beauty of Hebron Potatoes, Culverwell's Giant Marrow Peas, a fine brace of Telegraph Cucumbers, and very good Celery, the variety being Major Clark's Solid Red. Mr. J. Staneyer was second, having the same variety of Cucumber, Globe Artichokes, Duke of Albany Peas, Negro Longpod Beans, International Kidney Potatoes, Egyptian Turnip-rooted Beet, and a good dish of Tomatoes. Mr. A. R. Cox was awarded the remaining prize, having good Stratagem Peas, Tripoli Onions, and Reading Russet Potatoes. For six dishes several collections were staged. Mr. J. Lowndes, gardener to S. S. Parker, Esq., Sudley Road, Aigburth, was placed first with good Mushrooms, Tomatoes, and Telegraph Peas; Mr. E. Thrupp, gardener to H. J. Walmsley, Esq., Westwood House, Wigan, second; and Mr. J. Bennett third.

For six dishes of Peas five collections were staged, Mr. W. Mease being placed first with Pride of the Market, Evolution, Telephone, Telegraph, Stratagem, and Giant Marrow. Mr. J. Lambert staged Laxton's Supreme, Webb's Surprise, and other varieties as above mentioned, and was awarded the second award. Mr. J. Staneyer third with similar kinds. For three dishes Mr. E. Edmonds took the lead with Hallamshire Hero, Duke of Albany, and Telegraph. Messrs. A. R. Cox and T. Ellsworthy second and third respectively in the order named. For two dishes the prizewinners were Messrs. R. Cubbon, A. Johnson, and G. Park, gardener to F. Farrington, Esq., Marebonne, Wigan.

Potatoes were well represented by clean shapely specimens. For a collection of six nearly fifty dishes were staged. Mr. J. Lambert was again successful with splendid examples of Welford Park, Suttons' Magnet, Covent Garden Perfection, Vicar of Laleham, Porter's Excelsior, and Beauty of Kent. Mr. Mease was second with Holborn Favourite, Schoolmaster, Reading Russett, Myatt's Prolific, Woodstock Kidney, and International Kidney. Mr. T. Ebbott won the remaining prize with smaller examples. For four dishes the successful exhibitors were Messrs. F. Harvey, Bromborough Pool; Mr. C. Ford, gardener to T. B. Forward, Esq.; and R. Haymanns. Tomatoes were good. For three dishes Mr. G. Condon, gardener to W. Chambers, Esq., The Grange, Wallesley, was first with Dedham Favourite, Conqueror, and Stamfordian. Mr. C. Finnigan second, having good examples of Dr. Livingstone and Stamfordian. Mr. J. Wallis third. Mr. J. Lambert staged three dishes of the largest fruit we have ever seen exhibited, and would have been placed first, but the Judges considered two of the dishes were not dissimilar, six collections being staged. For one dish the prizewinners were Messrs. R. Ball, Heathfield, G. Condon, and J. Barker. Mr. J. Lambert secured the first prize for a brace of Cucumbers, and the grand examples staged justified the award.

#### MISCELLANEOUS.

There was a considerable display of horticultural structures, boilers, garden seats, summer houses, unique flower boxes, and general appliances by Messrs. John Webster, Joseph Bramham, Knight Brothers, Bethell and Sons, and Foster & Pearson, the latter having, besides their frames, the new horizontal tubular Chilwell boiler, similar in appearance to the Rockfords, but with a different circulation of water and quicker heating. Most or all the above exhibitors were awarded certificates for the excellence of their productions.

## THE INSECT ENEMIES OF OUR GARDEN CROPS.

### THE PEAR.

(Concluded from page 8.)

IN our remarks upon those insects that attack the trunk or branches of the Pear, the goat moth (*Zyleutes cecus*) was not mentioned; it may be found in most lists of destructive species, and is described as a general enemy of fruit trees. I am not prepared to say that it never occurs upon the Pear, but have not yet noticed an instance; it appears to single out the Apple and Plum sometimes, though on the whole more partial to trees that are not fruit-producers, such as the Elm, Poplar, and Willow. Of the larger caterpillars that feed upon the leaves of the Pear a familiar instance is that of the brindled beauty moth (*Biston hirtaria*, fig. 23), which I have seen in profusion upon trees in the vicinity of London; and as all the moths of a brood commonly emerge about the same day, a score or two may be noticed clustering on the trunk of a Pear (they are also abundant upon the suburban Elms that yet remain), and as they are sluggish their capture is an easy affair. The bodies of the moths are rather hairy, rendering them better able to stand the cold of our English spring, for April is

the month when they appear. All the wings are smoky-brown, sprinkled with dots of yellowish brown, the fore wings having six irregular narrow black bands, and upon the hind wings are three waved black lines. The caterpillar feeds during June and July; it is a "looper," and conspicuously coloured. The ground colour is of two shades—a dingy purple brown and a red brown, these run in alternate stripes from head to tail, divided from each other by black lines; also, there are some yellow spots on the sides, and a ring of that colour behind the head. When adult, they enter the earth for the winter. As these caterpillars, while they are young, are mostly to be found feeding in the lower branches, they may be shaken or picked off.

The large, pale yellow swallow-tailed moth (*Uropteryx sambucata*), which flits, ghost-like, about gardens on a summer's even, has its Latin name from the Elder, which often furnishes food to the caterpillar; but it also occurs upon fruit trees, and I have noticed it in the Pear, though, being only a casual visitor thereto, it cannot be accounted an injurious species. Its shape and hue are very deceptive, and on the tree it might be passed over as a bit of twig when motionless; after feeding a short time in the autumn it hibernates, and completes its growth in May. A much smaller insect of the same group, which now and then seeks the Pear, has a caterpillar that is apt to feed in parties, and their voracity makes up for their want of bulk. Fortunately, however, their preference is for Hornbeam and Whitethorn. The caterpillar of the mottled umber moth (*Hybernia defoliaria*) occurs during May and June; it is a smooth-bodied "looper," brown and grey above, yellow beneath, with a large brown head. As on any alarm it is their habit to drop from the leaves by a thread, these caterpillars may be shaken off branches without using much force. Another plan, important as a preventive, is to stop the female moths depositing their eggs; they, being wingless, crawl up the trunks at the end of autumn, when they



Fig. 23.—*Biston hirtaria*.



Fig. 24.—*Tortrix angustiorana*.

leave the chrysalis. If the tree near its foot is surrounded by a band of birdlime or of tar it entangles the moths, or keeps them from travelling higher; and should eggs be laid low down, the newly hatched caterpillars are not likely to reach the leaf buds. It is yet more important to try this remedy where Pears, as sometimes happens, have been infested by the greenish-brown, half-transparent caterpillars of the winter moth (*Cheimatobia brumata*), which appear each season upon fruit trees, and their unpleasantness is aggravated by the webs they spread from twig to twig. Some years ago an alarm was caused by this species swarming upon Pears in the Herefordshire orchards, but the insect shows usually more liking for the Plum and Filbert.

Two or three other caterpillars of varying size should be mentioned that are in books upon fruit trees named as occurring upon the Pear, though not foes of any importance. There is the brown tail (*Liparis chrysorrhæa*), which, in European countries, does appear to be the cause of considerable loss to fruit-growers during some years. It is not, at least not now, sufficiently abundant with us to do harm, and it is seldom found feeding upon anything except the Whitethorn and the Sloe. As these caterpillars reside upon trees in colonies of one or two hundred each, they may be well supposed capable of effecting much mischief should their nests be left undisturbed. These, if they did occur amongst our Pears, would be more conspicuous than the nests of the caterpillar of the little ermine (*Yponomeuta padella*), an insect we have described in connection with the Cherry, but which I have seen upon the Pear, and which may be treated successfully by "peppering" their webs with some destroyer, such as powdered hellebore; but this should be done early in the season. Towards the end of the summer the gardener in glancing at a bough of a Pear tree is occasionally surprised to perceive a party of small shining brown caterpillars closely packed upon a leaf. These are young individuals of the species called the gothic (*Nænia typica*), and the singular part of their history is, that though the parent places the eggs in patches upon trees, after feeding on these for two or three weeks they crawl down and finish their career upon low-growing plants.

In the group of small moths we find that several species are active enemies of the Pear, and of these we name *Tortrix*, or *Peedisca angustiorana*, an insect which does not seem to have a distinctive



English name (fig. 24). Variable in its markings, like others of the Tortrix tribe, it displays upon its bell-shaped wings lines and streaks of orange, grey, and brown, their expansion being about half an inch. The eggs are probably laid in the autumn sometimes, more usually in the spring, and the young caterpillar begins its career by nibbling the blossoms; later on it is found within the fruit, lodging under the eye, doubtless causing the fall of many that come off prematurely. If brought to daylight it appears as a small dull brown caterpillar, reddish on the back, with a horny and shining plate behind the head, and slightly hairy. It is vain to search for it, but fallen fruit that is likely to contain it should be destroyed; also those little heaps of dead leaves which we notice about the orchards in autumn, since they may lodge the insect as a chrysalis. And, occasionally, the caterpillar of the codling moth (*Carpocapsa pomonana*) is detected upon the just-forming fruit of May, or upon the ripening fruit of July and August, though its wonted food is the Apple. Since the moth harbours under loose bark during the winter the trunks of trees in orchards ought to be looked after.

Then there is a tiny case-bearing caterpillar that frequents the foliage of the Pear, rejoicing in the Latin name of *Coleophora hemorobiella*, much more common some years than others. It manifests itself by appearing upon the leaves in these cigar-like cases, hardly a quarter of an inch long, and on opening one we find within a pale-brown caterpillar with a black head. In feeding it does not pierce through the leaf, but mostly finishes by mining it, leaving a broad blotch; on the whole, the insect is a disfigurer rather than one of serious harm to the Pear. More, however, might be said against the abundant Pear blister moth (*Argyromyces clerckella*), the wings of which expand about half an inch, the upper pair being dull white, sprinkled with dark dots, and having streaks of purple; the lower wings are brownish. This moth comes out early in May to lay its eggs upon the leaves, and a few weeks after the slightly hairy, yellowish white larvæ are feeding under the cuticle, where they defy all applications. When adult, they pierce the leaves and spin cocoons on their surface; therefore, it is advisable where it has been troublesome to burn all dead leaves in autumn, and also to remove the surface soil close to the base of walls, which might harbour some blown by the wind.

It should have been noted before that several species of aphids or fly haunts the Pear, especially *A. Pyri* and *Persicæ*. The leaves are also deformed by mites of more than one species, which produce gall-like swellings. The best known of these is *Phytoptus Pyri*, by the agency of which are caused red swellings, within which the cellular tissue is black, and they at last become of that colour when the mites leave them to migrate to fresh leaves.—ENTOMOLOGIST.

## SOUTHAMPTON SHOW.

AUGUST 2ND AND 4TH.

THE twenty-second annual summer Exhibition of the Royal Southampton Horticultural Society was held in the grounds at Westwood Park, and was in some respects one of the best that the Society has yet produced. This was especially the case as regards the plants, which were admirably shown in all the classes. Five large marquees were devoted to the exhibits, which were effectively and conveniently arranged. The weather proved most favourable, and there was a large attendance of visitors upon both days, but on Monday the grounds were crowded.

### PLANTS.

There is invariably an excellent display of plants at Southampton, the liberal prizes in the open classes bringing some of the best of the leading exhibitors from a distance, and the local growers prove by their exhibits how high a degree of skill they have attained in the culture of plants generally. The Show of Saturday and Monday last was no exception to the rule; indeed in several classes there a decided improvement was observable, and throughout the exhibits were distinguished by a most commendable freshness and health. In the majority of the classes the competition was very keen as regards closeness of merit, and that the numbers were satisfactory may be judged from the fact that three large marquees were exclusively devoted to plants.

The leading open class, and one in which the chief interest usually centres, is that for twelve stove or greenhouse plants, six in bloom and six fine-foliage, the prizes being £20, £15, and £10. There were three competitors, all noted plant-growers—namely, Mr. Cypher of Cheltenham, Mr. Tudgy of Waltham Cross, and Mr. James of Lower Norwood, London, and these three collections constituted a really fine show of large specimen plants. Mr. Cypher was accorded first honours for superb examples of *Dasylirocn acrotrichum*; *Croton angustifolius*, 7 feet high and as much in diameter, grandly coloured; *C. Queen Victoria*, also handsome; *Kentia Fosteriana*, very large and extremely graceful; *Latania borbonica* of great size and in fine health; *Ixora Pilgrimi* and *Ixora Williamsi*, beautifully flowered with large dense heads; *Erica kingstonensis*, *Bougainvillea glabra*, *Allamanda nobilis*, and *Erica obbata*, even, healthy, and profusely flowered. Mr. Tudgy secured the second place for a praiseworthy collection, in which *Croton Johannis*, *Pritchardia pacifica*, *Cycas circinalis*, and *Kentia australis* were equally notable. Mr. H. James was third, his fine-foliage plants, such as *Seaforthia elegans*, *Corypha australis*, and *Theophrasta imperialis*, being the strongest part of his collection, though his *Anthurium Andreanum* and *Statice profusa* were uncommonly beautiful.

Two classes were provided for fifteen miscellaneous plants, not less than six in bloom, one being confined to nurserymen and the other to gardeners.

The entries in these classes occupied considerable space, and together with those in the previous class almost filled one marquee. Amongst the nurserymen the first place was accorded to Mr. J. F. Mould, Pewsey, who contributed a handsome collection of plants, especially noteworthy being *Dipladenia Brearleyana*, finely flowered; *Allamanda nobilis*, similarly beautiful; *Dracæna Goldieana*, large and healthy; *Gleichenia rupestris*, most vigorous and fresh; *Erica Austiniana*, and *Kalosanthes princeps* being large and freely flowered. Messrs. Jackson & Son, Kingston, were second with a good collection of *Crotons*, *Dipladenias*, *Statices*, and similar plants, all well grown. Messrs. J. C. & H. Ranson, Hill Lane, and Messrs. Oakley & Watling secured the third and fourth places, each staging healthy neat plants. In the gardeners' class Mr. E. Wills, gardener to Mrs. Pearce, The Firs, Bassett, was accorded the premier position for a neat creditable collection of specimens, of which *Statice profusa*, finely flowered; *Alocasia Lowii*, *Erica Parmentieriana rosea*, *Cycas revoluta*, *Kalosanthes coccinea*, *Croton Queen Victoria*, finely coloured; and *Verschaffeltia splendida*. Mr. N. Blandford, gardener to Mrs. Haselfoot, Moor Hill, West End, secured the second place with vigorous healthy plants, *Cyanophyllum magnificum*, *Croton Disraeli*, and *Adiantum trapeziforme* being exceedingly fine.

Orchids are never shown very largely at Southampton, but probably if the prizes were increased in value more competitors would be induced to enter, and greater encouragement would thus be given to Orchid culture in the district. The highest price at present offered for a collection of Orchids is £2 10s., and this is not sufficient to insure a very large display. Mr. Osborn, gardener to H. J. Buchan, Esq., Wilton House, Southampton, was awarded the first prize for a very tastefully arranged group of well-grown and freely flowered plants, amongst which the beautiful white *Dendrobium Dearei* was particularly well represented. *Oncidium Papilio*, *Odontoglossum Roezli*, *Dendrobium filiforme*, *Cypripedium Veitchii*, *Odontoglossum Alexandræ*, and several other species and varieties, about four dozen plants being included, with small Ferns. Mr. H. James took the second place, showing *Dendrobium Dalhousianum* in very fine condition, and *Dendrobium glumaceum* equally good, besides several other species and varieties. Mr. Blandford was third, his plants of *Peristeria elata* being exceedingly fine, and with an extraordinary plant of the same species he gained the premier award in the class for a single specimen. This had six spikes with twelve to fourteen flowers each, large and pure in colour; very rarely indeed is so handsome a plant seen. Mr. Osborn followed with *Cypripedium Sedeni*, having twelve or more spikes, and Mr. James was third with *Cattleya crispata*.

Fuchsias were extremely well represented, the grand specimens with which Mr. Wills gained the first place in the class for six plants being of remarkable merit in health, floriferousness, and condition generally. They were 6 to 7 feet high, freely and informally trained, of conical shape, and loaded with flowers. Mr. Osborn was second with similar specimens, and in smaller classes some well-grown plants were staged by Messrs. Wills, Osborn, W. Joy, Betteridge, and Burch. Mr. W. Joy had the best single specimen *Fuchsia*, about 4 feet high, compact and neat, Mr. Busby being second with a slightly less regular but good plant.

Tuberous Begonias were also shown satisfactorily as regards the size and health of the plants, but the varieties were mostly of the old type—namely, with narrow petals, brightly coloured, but wanting in that substance with which we are now familiar. As decorative plants, however, well-grown specimens of even the smaller-flowered Tuberous Begonias are very useful. Mr. Wills was the leader in the class for six with profusely flowered plants, Messrs. Osborn, Amys, Molyneux, and Windebank following in that order with similar plants, differing slightly in size. Cockscombs were fine, with large richly coloured heads; Mr. Hunt, Mr. Osborn, and Mr. Windebank securing the prizes in that order. Zonal Pelargoniums also, both single and double, formed an important addition to the Show, furnishing a most welcome colour. Messrs. Blandford, Ransom, Wills, and Windebank were adjudged the principal prizes for compactly trained and freely flowered plants.

The best single specimen stove or greenhouse plant was a large *Rhynchospermum jasminoides* from Mr. Amys. It was about 5 feet in diameter, in good health, but not quite so well flowered as might be desired. Mr. Cox was second with *Allamanda Hendersoni*, to which the same remarks would apply; and Mr. James followed with *Rondeletia speciosa major*, large, and in fairly good condition. Mr. Cypher had the best single specimen *Heath*, *Erica Barnesi*, 4 feet in diameter, even, and in most healthy condition. Mr. Amys secured the second place for a well-grown *Erica Irbyana*, and Mr. J. F. Mould followed with *Erica Fairriana*.

Fine-foliage plants were well but not largely shown, especially in the class for nine specimens, which were mostly large and handsome examples. Mr. E. Molyneux, gardener to W. H. Myers, Esq., Swanmore Park, Bishops Waltham, was adjudged premier honours for beautiful plants, of which *Allamanda Hendersoni*, *Croton Queen Victoria*, *C. variegatus*, and *Cissus discolor* were the most noteworthy. Mr. H. O. Hunt, gardener to R. Moss, Esq., Weston Grove, Woolston, followed with smaller but clean and handsome plants—*Lygodium scandens* globularly trained, and a large profusely flowered *Oncidium sphacelatum* being remarkable. Coleuses were of moderate size, but finely coloured. Mr. R. West, gardener to R. Wigram, Esq., Northlands, Salisbury; Mr. Wills, and Mr. Hunt, were the prize-takers in that order.

Ferns were in all the classes very healthy, and though mostly of moderate size that was far from being a disadvantage; in the very large specimens are too frequently rather lacking in that most essential quality—freshness. Mr. Wills had, however, some handsome plants in the class for six, and easily won the leading honours. Particularly fine were *Davallia Mooreana*, *Davallia polyantha* (extremely vigorous), *Adiantum cardiophyllum*, and *Adiantum farleyense*. The second place was secured by Mr. Amys, who had *Davallia Mooreana*, *Lygodium scandens*, and *Alsophila excelsa* in prime condition. Mr. Wills was also first with six hardy Ferns, neat plants, of good varieties. With four exotic Ferns Mr. W. Pell, gardener to Miss Todd, Shirley, took the lead with *Davallia Mooreana*, *Adiantum farleyense*, *A. assimile*, and *Gymnogramma chrysophylla*, all healthy. Mr. Cox, gardener to R. R. Wyndham, Esq., Corhampton House, Bishops Waltham, was second, his best plant being *Nephrolepis davallifolia*; and Mr. Blandford was third, an example of *Gymnogramma peruviana* in his collection being of great merit. In the nurserymen's class for four Ferns Messrs. Jackson & Son were placed in the first position for *Dicksonia antarctica*, *Lomaria zamioides*, *Platynerium grande*, and



*P. alcornae*. Mr. H. James took the second place, showing *Phlebodium aureum* very fine. *Selaginellas* were not of remarkable merit, but Messrs. Wills and Busby had fairly good specimens.

The groups of plants arranged for effect were an important feature, some very graceful arrangements being contributed. Two classes were provided, the most important being for a half-circular group 16 feet in diameter, and for which the Mayor and Corporation of Southampton offered the first prize of £7. This honour was secured by Mr. Wills, who had an exceedingly tasteful group, composed of Palms, chiefly Cocos, in the centre, with a base of small Ferns, *Ixoras*, *Ericas*, *Impatiens Sultanii*, and *Panicum variegatum*. This group was extremely light and graceful, and was much admired. Messrs. J. C. & H. Ransom were second with a slightly more formal but beautiful group, in which double *Pelargoniums* and *Clerodendrons* were the most notable of the flowering plants, with a margin of Ferns and *Panicums*. Mr. Blandford was third with a mixed assortment of *Fuchsias*, *Pelargoniums*, *Caladiums*, &c.; Mr. Amys being fourth with a tasteful combination of *Crotons*, *Begonias*, *Caladium argyrites*, *Panicums*, and *Adiantums*; Mr. Mould taking the fifth place for a fairly good group, in which *Kalosanthes* and *Eucharis* predominated. In the smaller class for a group 10 feet by 6 feet the exhibits were not so commendable.

#### CUT FLOWERS AND TABLE DECORATIONS.

Flowers were shown in good numbers and occupied considerable space in the fruit tent, the ordinary miscellaneous stove and greenhouse plants were especially well exhibited by Messrs. Budd, Thomson, Hillier, and Axford; hardy flowers by Mr. Molyneux, who had a very beautiful collection; Mr. H. Guillaume, 12, Oriental Place, and Mr. Thomson. *Pelargoniums*, both single and double, were well shown by Mr. Molyneux, Mr. Flight, and the Rev. R. L. Dashwood, Sheffield Rectory; *Lilies* and *Gladioli* by Mr. Guillaume and Mr. W. F. Piper. Roses were also contributed by Mr. Betteridge, Dr. Seaton, Mr. Guillaume, Mr. Privett, and Mr. Flight. Messrs. Keynes & Co., Salisbury, had two stands of magnificent *Dahlia* blooms, being awarded first honours for both, and a first-class certificate was awarded for Mrs. Langtry, a handsome Show variety with grandly formed blooms, the florets yellow tipped with crimson. With table decorations, Mr. Cypher was as victorious as usual. His table was set out with great taste, the flowers principally employed being *Francoas*, *Gloriosas*, and *Russelia juncea* for the upper portions of the stands, and *Dipladenias*, *Nymphæas*, and *Ixoras* for the base, with a suitable admixture of Fern fronds. Mr. Chard, Clapham Common, followed with a pleasing table, on which *Potentillas*, *Geums*, with shoots of *Golden Lonicera* and *Orchids* were the principal feature. Mr. F. G. Chamberlain, Fitzhugh, and Miss Bertha Fagot, Cornstyles, Twyford, were third and fourth respectively. With bridal bouquets Mr. Chard took the lead, followed by Mr. Cypher and Messrs. Cross & Steer, Salisbury. Mr. Chard was also first with ball bouquets, followed by Messrs. Keynes & Co. and Mr. Cypher.

#### FRUIT.

The classes provided for fruit were well filled, but we have seen exhibits of better quality at some of the Southampton Shows in preceding years. The Local Tramways Company offered a prize of five guineas as the first in a class for eight dishes, and this honour was deservedly won by Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, who had large bunches of *Muscat of Alexandria* and well-coloured *Black Hamburgh Grapes*, a good *Providence Pine*, large *Goshawk Peaches*, *Brown Turkey Figs*, finely coloured *Elrue Nectarines*, *Hero of Lockinge Melon*, and *Moorpark Apricots*. Mr. F. Thomson, gardener to W. Baring, Esq., Norman Court, Dean, was placed second with good *Muscat* and *Madresfield Court Grapes*, but the latter were somewhat rubbed; *Grosse Mignonne Peaches* and *Moorpark Apricots* were also fine. Mr. J. Budd, gardener to F. G. Dalgety, Esq., Lockerby Hall, was third, his *Elrue Nectarines* being uncommonly good. Mr. J. Edmonds, gardener to the Duke of St. Albans, Bestwood, Arundel, was fourth, showing a beautiful *Providence Pine*. With six dishes Mr. Molyneux took the lead, showing *Black Hamburgh* and *Muscat of Alexandria Grapes*, fine *Violette Hâtive Nectarines*, *Pine Apple Nectarines*, and *Morello Cherries*. Mr. J. Jones, gardener to Lord Calthorpe, Winchfield, was second, his *Princess of Wales Peaches* and *Elton Cherries* being very creditable.

Grapes were not of first-rate merit, some of the white varieties being not fully ripened, and black varieties were in several instances much deficient in colour. With three bunches of black Grapes Mr. Budd was first with *Black Hamburgh* of medium size, but finely coloured. Mr. Molyneux was second with *Madresfield Court* with very handsome berries. Mr. Ward followed with the same variety rather smaller; and Mr. W. Sanders, gardener to J. East, Esq., Langstock House, Stockbridge, was fourth with *Black Hamburgh*, much wanting in colour. Mr. Cox was first with two bunches of *Black Grapes*, fairly coloured *Madresfield Court*; Mr. Axford being second with small *Black Hamburgh*. The best three bunches of white Grapes were staged by Mr. Molyneux, *Muscat of Alexandria*, large in bunch and berry, and well coloured. Mr. W. Hills, gardener to Viscount Gort, East Cowes Castle, followed with the same variety, and Mr. Hillier was fourth. Mr. Osborn was the only exhibitor of two bunches of white Grapes, and was awarded the first prize for well-ripened *Buckland Sweetwater*. In the one-bunch classes Mr. Molyneux was first with *Madresfield Court*; Mr. Ward second with the same; Mr. Axford, third with *Black Hamburgh*, small; and Mr. Sanders fourth with the same, red. With white Grapes Mr. Molyneux was again first with *Muscat of Alexandria*, finely coloured, large in bunch and berry. Mr. Ward was second with the same variety not so well coloured; Mr. Budd and Mr. Thomson following with *Muscats*, to which a similar remark would apply.

Melons were in good numbers. For a scarlet-flesh variety Mr. Sanders was first with *Blenheim Orange*, Mr. Molyneux and Mr. Cox following with the same variety, and Mr. Ward was fourth with *Victory of Bristol*. In the green-flesh class Mr. Ward took the premier place with *Hero of Lockinge*, finely netted; the second prize was awarded for the same variety, but the exhibitor's name was not attached to the card, and Mr. Budd was third. Mr. Ward had the only *Pine Apple* shown, a good fruit of *Charlotte Rothschild*, for which the first prize was awarded. For six *Peaches* Mr. Windebank was the most successful exhibitor, staging beautiful fruits of *Chaucellor*. Mr. Osborn was second with *Early Grosse Mignonne*, nearly as fine; Mr. Jones was third with *Princess of Wales*, and Mr. Thomson fourth with *Early Grosse Mignonne*. Mr. Huut's dish

of handsome *Pineapple Nectarines* was placed first in that class, Mr. Budd taking the second place with *Elrue*, Mr. Thomson third with the same, and Mr. Ward fourth with *Pineapple*. Outdoor fruits were shown in good condition, the principal prizetakers being Messrs. Budd, Jones, Sanders, Thomson, Windebank, Fitford, and Busby.

#### VEGETABLES.

Though the competition was keen in the class for a collection of vegetables, the exhibits generally were not up to so high a standard as at some previous shows of this Society. For nine varieties Mr. G. Busby, gardener to F. Williams, Esq., Thornhill House, won the premier prize with a clean and praiseworthy collection, including *Telephone Pea*, *Perfection Tomatoes*, *Sutton's Intermediate Carrots*, and *Giant Rocca Onions*, very fine. Mr. Budd was second, his *Tomatoes* and *Onions* being his best dishes, Messrs. Amys and Hunt followed in that order. Mr. W. Sanders was first with eight dishes of *Potatoes*, representing the varieties *Adirondack*, *Beauty of Hebron*, *Fillbasket*, *Rector of Woodstock*, *Sutton's Prizetaker*, *Reading Rupert*, *Covent Garden Perfection* and *Cosmopolitan*. Mr. Ward, Mr. Axford, and Mr. Molyneux secured the remaining prizes in that order. *Onions* were largely shown, Mr. W. Sanders taking first with *Early White Naples*, very handsome. Mr. Laxton, Sandy, Bedford, offered prizes for dishes of *Evolution Pea*, *John Harrison Bean*, and *Sandy Prize Spanish Onions*, which brought some competition, the principal exhibitors being Messrs. Sanders, West, Cox and Ward. Twelve brace of *Cucumbers* were staged; Mr. Shadwell, gardener to Hay Morant, Esq., Manor House, Ringwood, being first with *Tender and True*, even and clean, Mr. Ward followed with *Newton Hero*, and Mr. Busby with *Telegraph*.

Miscellaneous exhibits were contributed by several nurserymen, Messrs. Jackson & Sons of Kingston having a very handsome group of stove and greenhouse plants, which formed a great attraction. Messrs. Lucombe, Pince & Co., Exeter, showed collections of *Carnations*, *Phloxes*, *Tea Roses*, and flowering plants. Messrs. Cross & Steer, Salisbury, showed a box of *The Governor Carnation*; and Messrs. Keynes & Co., Salisbury, had a stand of new *Dahlias*.

#### THE STRAWBERRY GRAPE.

I HAVE sent for your opinion two bunches of a peculiar Grape known here as the *Framboisier* (or *Raspberry-flavoured*). It was introduced from Switzerland by the son of my employer, by whom it is much esteemed. I had never seen the variety till I came here about three years ago, when I found something both peculiar in foliage and berry to what I had ever seen before. My employer told me the Vine had been planted several years, but it had not been a success, as they seldom had a bunch with more than eight or nine berries on it. It is now, I may say, vigorous, as you will perceive by the foliage. Is it known by any other name? I intend submitting some to the Fruit Committee of the Horticultural Society, but did not think them sufficiently ripe, and I am afraid I shall not be able to keep any till the next meeting, as the demand by the family and the depredations by the wasps will soon make them scarce. It is a shy setter, and takes a long time to thoroughly ripen. The perfume fills the house, which is about 60 feet long, and the intense blackness of the berries and the thickness of the bloom is very remarkable.—JOHN GADD.

[We have never seen a better example of the *Strawberry Grape* (syn. *Raisin Framboisier*). Mr. Barron, in his "Vines and Vine Culture," says:—"This singular Grape is generally assumed to be of American origin, on account, it may be supposed, of the great similarity in the leaves and in the character of the fruit to the native American Grapes. It is, however, we believe, of European origin: Lady Cave sent us some fruit from near Montreaux, on the Lake of Geneva, and stated that she found it in the market at Gray, on the Saone, west of Dijon, which almost fixes its nativity to that district. It is grown in this country more as a curiosity than for the value of the fruit. The late Duke of Devonshire, it was said, was very fond of it, and Mr. Paxton had to grow the fruit specially for His Grace. During the past year or two we have met with it in the gardens of Earl Brownlow, Ashridge Park; in those of the Earl of Rosebery, Mentmore; and at the Duke of Bedford's, Woburn."]

#### THOUGHTS ON CURRENT TOPICS.

"WHAT shall we have first this week?" was the thought playing in my mind when I opened my last Journal. Ah, *Potatoes*—a plain subject, but an important one. The remarks on lifting, storing, and supertuberating made me think of old times and spoiled crops; some spoiled, though, by lifting, and some saved by being left in the ground. Early lifting is no doubt a matter of great importance, provided—and this is a vital point—they are lifted in time, also that the tubers are properly disposed afterwards. Neglect of either of these conditions is almost certain to result in bitter disappointment and ruinous loss.

If *Potatoes* are left in the ground until the murrain attacks them even slightly, and are then dug up in a half-ripe state and stored thickly, the disease will spread with far greater rapidity than if they had not been dug at all; but if taken up while perfectly free from disease, well dried, and then stored in a cool, yet, of course, frost-proof place, they will remain perfectly sound. Pulling off the tops of *Potatoes* is, as in the case of taking up the crop, only of use when done before the murrain has affected the plants, or at least on the very first signs of disease specks, and before the virus, or whatever the destructive medium may be, has descended to the tubers; after that the removal of the tops is only useful in one way, and that is in preventing the fructification of myriads of spores of the terrible fungus, for the *Potatoes* from which the tops have been taken will "go."

TAKE up and take care of early *Potatoes* before the attack of the great



enemy is the safest and soundest course that can be adopted; but after the attack they are just as well in the ground as out of it, and very often much better, because there the tubers are in a far greater degree isolated from each other by the intervening soil than when stored in heaps, which become actual "hotbeds of disease."

THE remarks of your correspondents, who evidently know what they are writing about, took back my thoughts to experimental days when sacks of too-late-taken-up early Potatoes were afterwards ruined, and the only sound tubers were those that had been left in the ground till November. Nor did the sound tubers grow again—supertuberate—that year; the earliest sorts seldom do; it is the later kinds which are seriously checked in growth when the tubers are about as large as Walnuts, and with strong haulm, that rush into a second growth under the influence of late summer or early autumn rains, and for this unfortunate accident there is no remedy, at least that is what I think on the subject.

"I DO not like new pots for Strawberries" remarks "A Kitchen Gardener" on page 88. When reading that observation my mental soliloquy may be embodied in the sentence—I wonder who does? I wonder further, who can like them for anything—until they are soaked? Numbers of plants besides Strawberries are seriously checked in growth every year and permanently injured by placing them in new porous pots without these having been immersed in water. If your correspondent will place his new pots in a pond for twelve hours or more, then dry them before use, he will find his Strawberries will not object to their receptacles—at least mine do not. If not thus prepared new soft flower pots are dangerous, and only a little removed from coffins to whatever plants are put in them. Avoid, therefore, the use of new unsoaked pots.

IF anything more were needed to show the capricious character of Strawberries it is the note of Mr. Muir on page 90. He prizes what hundreds of persons regard as the poor little Black Prince, and denounces what hundreds more regard as one of the most productive and useful Strawberries that were ever raised—Vicomtesse Héricart de Thury, in some districts known as Garibaldi. I have been told by "one who knows," because he has grown scores of acres of the fruit under notice, that, "taking one year with another," none pays him better, and few so well, as the very prolific Garibaldi. The flavour, of which your correspondent speaks slightly, numbers of persons appreciate; and the colour, to which he objects, is exactly what many prefer. So much for fancy and the influence of soils and positions affecting varieties of Strawberries. The only way out of the difficulty raised by conflicting evidence that I know is to do as I did when "bothered by writers" many years ago, and this is to at first grow a few plants of many varieties, and eventually many of a few, and most persons who do justice to the plants will then have plenty of good Strawberries.

THE article following the one above "thought about"—namely, that on watering plants, ought to be read attentively and its dictates followed sedulously by every young gardener in the kingdom, and not a few old ones, for it is to be remembered that there are numbers of sexagenarians who have been dabbling about with the watering pot for nearly half a century, who would not be allowed to water the plants of a really good plant-grower if they were willing to pay him a guinea a week for the privilege. Having had the opportunity of being drilled by the grower of some of the finest hardwooded plants that were ever staged at the London shows, I am in a position to speak plainly on this point. A man must indeed have a good capacity for "thinking" to be able to water plants exactly when they ought to be watered, and to give them exactly enough. He must be able to do more than think through the proverbial "9-inch deal," as he must be able to drive his thoughts through half a yard of soil and take note of its condition and the state of the innumerable root fibres that are penetrating it. Until he can do that he can never be a good waterer, and until he makes himself competent in that respect he cannot possibly become a good grower of plants. A thoughtful man and accurate judge of watering will keep plants healthy in inferior soil, but a person who cannot justly be regarded as otherwise than a bad waterer will have them unhealthy in the best of soil. I worked in gardens for ten years before I was able to water plants correctly, and there are hundreds of young men now in the same position that I was then. Let them think very deeply on this subject, for it is intimately connected with their failure or their fame.

I FELT a little puzzled when I read the notes of Mr. Inglis on East Lothian Stocks on page 91, and thought I must have the wrong variety. I cannot understand the plants flowering in perfection in July of the same year in which the seed is sown. I have had magnificent plants in the conservatory in December from seed sown in spring, and huge bushes in July from seed sown the preceding June. Perhaps if your correspondent were to obtain a few particulars through his friend Mr. George on his method of culture they might be of service; for myself I confess to feeling myself "at sea" on the subject, and cannot "think" myself out of it.

"I LIKE the double-flowered Ivy-leaved Pelargoniums very much," says "B.," on page 91. So do I, and I scarcely think the merits of such varieties as he names are fully known to all lovers of flowers. The variety Gloire d'Orleans is a model plant for a free graceful specimen. It is neither so loose as to make it appear "weedy," nor so compact as to have a "lumpy" appearance, but well grown is at once graceful and

bright. It is observable that prizes are offered at most shows for bicolors and tricolors, but I think the beautiful Ivy-leaved forms are at least equally worth encouraging.

DESTROYING scale by the use of Fowler's insecticide, as recorded by Mr. Burton on page 95, is a useful hint. Fortunately I have no scale on my plants, or would try the remedy; perhaps someone else may do so, as however safe paraffin may be in the hands of some persons, I have seen it kill plants as well as insects. If the insecticide may be used at "double" the scale-killing strength recommended, it must, one would think, be safe as well as efficacious.

I THOUGHT how very interesting Mr. Percival's narrative of the history of the King of Daffodils was on page 93. The variety under discussion is in my opinion one of the most beautiful of a beautiful genus. It reached me under the name of Horsfieldii, and this, too, is the name given in Mr. Burbidge's book on the Narcissus; but unless Mr. Percival has made a mistake, which judging by the character of his remarks does not appear likely, Mr. Burbidge for once in his life must be wrong in his rendering of the name; and an error of this kind, if passed unnoticed, has a natural tendency to obscure the origin of a plant on which it is always desirable there should be no doubt whatever. At least that is my thought on the matter, and if it is erroneous I am open to correction. I shall not be wrong, however, in advising all who can do so to grow *Narcissus bicolor Horsfieldii*.—A THINKER.

## TREES AT THE CAPE.

THE OAKS.

(Continued from page 104.)

ALMOST as successful an introduction as the two Pines already mentioned is the Oak (*Quercus pedunculata*). The Dutch brought the tree with them from Holland 200 years ago, and it was the early Dutch settlers in the south-west who planted those groves which are now such beautiful sights in many of the old western towns of the Colony. Various writers, from Anthony Trollope upwards, describing these picturesque Dutch villages, expatiate on the beauties of the old Oak avenues—the cool substantially built houses, lying embosomed in Oak foliage, and backed by stretches of rich vineyard. This picture is a contrast to the oven-like modern tenement, crowned with its hideous iron roof! In the young English towns of the eastern part of the Colony the Oak has been planted sparingly along with other trees, and there as a foliage tree it seems to have out-distanced all others, though, of course, Eucalypts show a more rapid growth. The striking feature of South African streets is their extraordinary width, the reason assigned for this being the difficulty of manœuvring the huge waggons of the country. As a consequence, the impression left is somewhat that of a dreary waste of dusty macadam with dwarf houses in the distance. What more calculated to relieve this, and the glare of a nine-months summer, than a double row of Oak trees? In the Grahamstown Botanical Gardens there is a fine show Oak tree, its too spreading limbs held together by bands of iron against the strong South African wind. There is a fine avenue of old Oaks near the Botanical Gardens and the new Houses of Parliament at Cape Town. The restoration of this avenue was made over to the Forest Department, and the treatment applied is described at length in the last Annual Forest Report of the Colony.

Fresh from India, and after ten years spent in its torrid fire-swept forests, I must confess that few sights have afforded me greater pleasure than the bursting into leaf of the Oaks in Cape Town at the end of the brief Cape winter. It was pleasant to renew acquaintance with our hoary old friend. In Italy, Switzerland, and France I had found the Oak leafless; in June, in Cape Town, its last leaves were rustling to the ground. Two months afterwards, towards the end of August, the trees were assuming the glory of their spring foliage.

I cannot remember whether the bursting into leaf of the Oak in this mild Cape climate is more sudden and vivid than the same phenomenon in Europe. Certainly it was here very beautiful! And it recalled memories of the old Nancy days and of friends now scattered far and wide. Poor Bagneris has gone to that last rest whither many a tall Oak has preceded him; and many of us, buried in the wearisome tropics, have almost forgotten the Oak and all he told us about it. I have seen the same old Oak fighting a losing battle in Southern India.

The Oak at Ootacamund, at an elevation of 7500 feet, makes twice a year faint-hearted attempts to come into leaf after the south-west monsoon and at the end of the cold weather. Elsewhere in Southern India, 4500 feet is the lowest elevation at which I have noticed the common English Oak planted and growing. It is never leafless there, is stunted, and of poor growth, but still bears fertile acorns. In the eastern portion of Cape Colony, where the climate begins on the coast to show semi-tropical features, the Oaks do not lose all their foliage regularly, but the yield of acorns is abundant and regular.

The species of Oak which has been planted in Cape Colony for 200 years appears to be exclusively *Quercus pedunculata*. Count de Vasselot in his tours has found only this species, though he informed me that he had searched carefully for *Quercus sessiliflora*. Of the two common European Oaks, *Quercus sessiliflora* has a rather more southerly habitat than *Quercus pedunculata*.

It is surprising that this Oak should have become so completely naturalised in a climate undoubtedly warmer than its European habitat. In the damper, more European-like climate of the Cape Peninsula, the



naturalised Cape Oak reproduces itself with facility by self-sown seedlings. All over the colony the Oak bears acorns abundantly and more regularly than in Europe (within my remembrance). The common method of planting Oak trees in avenues or near houses is to go into an Oak wood and dig up a sapling 6 or 8 feet high, and with about as much root as would go into a large kettle. That trees should survive such a treatment is one proof of thorough and hardy acclimatisation. I believe that the wood of the Cape Oak is not inferior to the wood of the European Oak, that the Oak in Cape Colony grows faster than in Europe, and that the decay to which the Oak in Europe is liable sets in earlier here. No attempt has been made at coppicing or barking the Oak or treating it as foresters treat the Oak in Europe. In the eastern mountainous forests of Cape Colony it is probable that the Oak would be thoroughly at home. Acorns are now being sown in glades and burnt areas of forest with the view of testing this. How far this Oak may be useful for afforesting purposes, or how far it may spread into the indigenous forest, will be an interesting subject of future observation.

After seeing the fine specimens of the Turkey Oak (*Quercus Cerris*) at Kew, the reflection is natural that if *Quercus pedunculata* grows well in Cape Colony, *Quercus Cerris* ought to grow better. And *Quercus Cerris* is a finer tree, yielding better timber than *Quercus pedunculata*. An application has been made to Kew for acorns of *Quercus Cerris*, in order to test its growth in different parts of the Colony. There is an Oak, said to be *Quercus Cerris*, and to be about eight years old now, growing in the Government Gardens at Cape Town. It is stated to have not yet produced good acorns. We should be thankful to any friend (and happy to exchange seeds with him) who would send us some Himalayan acorns, or, indeed, any Himalayan seeds, notably *Deodar*. And here it may be remarked that the climate of the eastern forest country of Cape Colony resembles the temperate climates of the Himalayas in its comparatively dry winters with occasional falls of snow, its rainy summers, its latitude, and its mean temperature. It differs in being subject to droughts at intervals of from five to ten years, and to brief hot winds from the interior, which send the thermometer above 100° for some hours. These hot winds may blow at any time of the year, though they are mitigated in winter. In winter they do not range much above 80° Fah. In summer they reach 110° and occasionally 115°. During the night they are always stopped, especially near the sea, by a cool current from the Southern Ocean, and differ in this respect from the hot winds of Australia, which blow at a temperature of about 120° for two or three days together. The best of the eastern forests of Cape Colony are between elevations of 3000 and 4500 feet, which in mean temperature probably corresponds with an elevation of between 6000 and 7000 feet in the Himalayas.—(*The Indian Forester*.)

(To be continued.)



#### HARDY FRUIT GARDEN.

*Ripening of the Fruit.*—Ripe fruit of Citron des Carmes and Doyenné d'Été Pears was gathered from cordons on July 26th. The first dish of Margaret Apple was also ripe on that date, which was ten days before the usual time of ripening of either of these early varieties of Pear and Apple. We mention this to show the importance of being on the alert to gather fruit in good time that is so liable to become spoiled by the delay of a day after it is ripe. Early Beatrice Peach was ripe on trees against a west wall a day or two later. Most of the fruit, though small, is high-coloured and excellent in flavour; some of it is spoiled by stone-splitting, as is most of an abundant crop of Early Rivers Peach on a south wall. We also note that Black Bigarreau Cherry afforded us a valuable supply of its large delicious fruit for dessert. Bigarreau has been still more useful, excellent fruit being obtained from netted trees till the first week of August. Belle Magnifique had an abundant crop of fruit, much larger than the Kentish, which it resembles in colour and flavour. It was used for jam and for bottling. We recommend this valuable Cherry for planting next autumn. It grows with rampant vigour where Kentish barely exists, and its fruit is abundant and fine. It is by taking note of such matters now that we gain the requisite knowledge for our guidance when the time for planting arrives. By using Nottingham netting to preserve ripe fruit on trees and bushes we are able to exclude insects and birds, both which contrive to find a way through fishing net. Red Currants on walls required for autumn are now covered with garden mats, under which it will be well to look occasionally for slugs, which have been very destructive to ripe fruit this summer, and are best caught at night.

*Strawberry Beds.*—Again we call attention to the importance of digging in manure between the rows of established plants as soon as possible after the fruit is gathered. Remember that the bearing of an abundant crop of fruit puts a heavy strain upon the plants, and they require a prompt and ample store of nutriment at the roots both to restore them to full vigour and to promote the development of strong crowns for next season. Regarding the exception taken by "Thinker" to our favourable notice of James Veitch Strawberry, we certainly have ample reason to speak highly of its flavour and colour in the south, and as it is

by no means one of our latest sorts we see no reason why it should not answer in many parts of Scotland. In Invernesshire, where the first ripe Strawberries and Green Peas come in with grouse-shooting, Sir Joseph Paxton is probably the latest sort grown. Can any of our friends in the north enlighten us upon this matter? If you have been unable to afford space for the early planting of new Strawberry beds do not keep the plants standing for several weeks in pots for late planting, but turn them out at once into a nursery bed, so that they may grow freely now and be ready for transplantation next spring.

#### FRUIT FORCING.

*MELONS.*—The stopping, thinning, and tying the growths will require frequent attention, as if these matters are neglected it will certainly result in injury. The possible recurrence of dull cold weather may necessitate the lighting of fires occasionally to dispel unnecessary damp, and at night to maintain the requisite temperature—viz., 70° to 75°, and to secure this in the daytime. The atmospheric moisture in the houses, pits, and frames must be regulated in accordance with the growth and the condition of the weather, keeping somewhat dry when the fruit is setting and ripening, but affording a moist genial atmosphere to plants swelling their crops. Closing can be done earlier in the afternoon now, or from three to half-past. Damping and watering will need to be lessened in pits and frames where there are no hot-water pipes at command, and the latter will be the better for having linings placed around the frames.

*CUCUMBERS.*—The present is a good time to sow seed of Cucumbers for winter fruiting. There is none to surpass Telegraph, although Telephone is very fine, and so is Cardiff Castle. What is wanted in a winter Cucumber is hardy constitution and prolificness. Those we have in the Sion House race, and of which there are so many forms that names are superfluous. Sow the seed singly in 3-inch pots in light soil, and plunge the pot; in a frame where there is a little bottom heat, but that is not imperative, shifting into larger pots as they require more room at the roots until they are planted out, or finally shifted into their fruiting pots or boxes. As a compost for Cucumbers there is no equal to three parts turfy loam and one part peat, with a sufficient quantity of charcoal to keep the whole porous. We find Cucumbers—and, indeed, all plants—are much healthier when grown in good soil without any admixture of manure, feeding the plants afterwards with rich surface dressings or liquid manure. Place small sticks to the plants when sufficiently advanced, and train with one stem to the height of the trellis. Syringe the plants twice a day where hot-water pipes are at command, and close early in the afternoon, or from three to four o'clock. The time, however, of opening and closing ventilators must be regulated by the weather, admitting a little air at 75°, and keeping the temperature through the day at 80° to 85°, closing at the latter, and with plenty of moisture, allowing an advance to 90° or 95°. The usual thinning, stopping, and tying will need attention, removing surplus fruit and exhausted growths, so as to make place for successional fruitful growths. Watering should be done in the early part of the day, and not be given until required, and then copiously so as to reach the lowest roots. Maintain a moist genial atmosphere, and keep up a good supply of fresh growth.

*PEACHES AND NECTARINES.*—As soft fruits are going out the value of Peaches and Nectarines in late houses becomes apparent, and they will, from the scarcity of Plums and Pears, be invaluable. The most important matter in the management of late houses is the application of liberal supplies of water both to the roots and to the foliage, as few trees under glass when in vigorous health take more water than Peaches and Nectarines. They also require abundant ventilation through the day, and closing early in the afternoon when the fruit is swelling, the trees being syringed, and the floors, borders, &c., sprinkled with liquid manure. If it be necessary to accelerate the ripening to keep the house somewhat warmer by sun heat and early closing, being particular to admit air in the early part of the day, and to close as early as safe. The observance of these matters will secure fruit of the largest size and quality, syringing being discontinued after the fruit begins to soften; and if the fruit is to be retarded a low night temperature will best answer the purpose, and at the same time help heavily laden trees. Good syringing is essential to keep the trees in health, only it must not be continued after the fruit begins to soften, and this will keep down insects, which if allowed to have their own way injure the foliage and bring about premature decay, which means unripe wood and imperfectly developed buds.

To have Peaches really good in flavour, they should be gathered when dry early in the day, and before they are quite ripe when they have to be packed for travelling. Avoid pressure in gathering, as the tender skin of Peaches is easily injured. Very fine fruit often swell round the wood on which they are growing, in which case it is best when the shoot can be spared to make a cut above and below the fruit, which is preferable to removing them by force; but when the shoot cannot be spared the fruit should be held in the palm of the hand in a pad of wadding and the fruit detached with a pair of Grape scissors. Keep them in a cool room until wanted for use.

#### PLANT HOUSES.

*Azaleas.*—Plants that were started early into growth and are now under cool treatment will have set an abundance of flower buds. These plants, if the space is wanted indoors, may with safety be removed to the outside for the next two months. When placing these plants outside it is wise to partially plunge the pots in ashes or cocoa-nut fibre. The plants when outside will without injury bear the full blaze of the sun, and are much benefited by being exposed to its rays, but they generally suffer at the roots if not protected. When plunged the watering of the plants must be



done by those capable of watering properly and judiciously, or injurious results may follow. Later batches that are just completing their growth should have more light and air, less syringing for about a fortnight, and flower buds will form freely. Those that flowered late have not yet completed their growth; these should be pushed on as rapidly as possible, so that their flower buds will be well formed before the dark sunless days of autumn. Give all plants that are root-bound another application of artificial manure on the surface. The plants outside should be syringed twice daily when the weather is favourable. Watch for thrips, and if they appear eradicate them by syringing with tobacco water, or they will spread rapidly and injure the foliage.

*Grevillea robusta*.—These plants when once established in small pots form rapidly and soon become too large for some forms of decoration, especially if they have been transferred into 5-inch pots. They will grow less rapidly if placed outside in a position sheltered from the strong rays of the sun. At this season of the year they do as well outside as in, providing they are liberally supplied with water. Another batch of seed may be sown, and the plants will be found most useful at a time when the majority of those raised earlier have been destroyed through employment in rooms. If the plants raised now are small at the approach of winter they can soon be forwarded in gentle heat; in a close warm temperature they grow rapidly. The light Fern-like leaves of these plants are most useful in a cut state, for they last much longer than Fern fronds.

*Mignonette*.—The plants grown for standards should now be placed in their largest pots, and have the trellises placed to them upon which they are to be trained. Pots 10 inches in diameter are very suitable for these plants, and in potting the utmost care must be taken not to injure the roots, or the growths will become woody and afterwards seldom do much good. The soil should consist of fibry loam, one-seventh of decayed manure, and about the same quantity of leaf soil. To each barrowful of soil should be added a 5-inch potful of soot and the same quantity of bone meal, and sufficient sand to render the whole porous. After potting keep the plants close for ten days, shade from strong sun, and stand them upon some moisture-holding material. A number of 5-inch pots should now be filled with the compost advised above, and seed of the common garden variety or Miles' Hybrid Spiral sown in them. The soil in the pots should be pressed firm, and the seed sown on the surface; then, being covered with a little fine soil, a good watering should be given, and the plants stood in a frame where they can be shaded from the sun until the seed germinates, when abundance of air may be given and less shading employed.

*Celosias*.—These are amongst the most useful plants that can be grown for winter decoration. Their rich crimson and golden plumes last well in a cut state, and are invaluable for arranging with other plants in rooms and halls where effective groups are required. They last in beauty a long time in such positions, and for the conservatory are unsurpassed. They are easy to cultivate, but not grown half so much as they deserve to be. Plants from seed sown as directed and placed in small pots when ready should without delay be transferred into 4 or 6-inch pots, the smallest plants being placed in the first size and the strongest into the larger. These plants do not require large pots, as they will bear liberal feeding after their pots are full of roots. When placed in large pots for winter decoration they are liable to damp off during dull sunless weather. Any rich soil will suit these plants, and it should be pressed firmly into their pots to ensure a sturdy compact growth. As soon as they commence rooting freely in the new soil give air abundantly, and grow without shading from the sun.

*Salvias*.—These, whether planted out or growing in pots, should have the points of their shoots taken out for the last time, or they will grow tall instead of remaining dwarf and bushy. When grown in pots liberal feeding is required as soon as the pots become full of roots. The plants should be arranged in any sunny position.

*Roman Hyacinths*.—The bulbs of these can now be obtained, and where their flowers are required from the end of October no time should be lost in potting them. Four or five bulbs should be placed in 4-inch pots, using for a compost three parts fibry loam, one of leaf mould, a seventh of decayed manure, and coarse sand. When grown only for purposes of cutting the bulbs may be placed thickly together in pans or boxes. After potting they should be placed outside and covered with about 4 inches depth of coal ashes, where they can remain for about six weeks to fill their pots with roots, which is essential before forcing them into flower.

## THE BEE-KEEPER.

### BEEES.

#### THE COMPOUND FRAME HIVE.

IN my last article on the above hive I omitted to mention that where the staple might be objected to the objection is overcome by splitting the lateral slide, nailing the one half which makes the frame rigid, while the loose half is sufficient for its purpose. To prevent the deep frame from coming into contact with the back and front of the hive when manipulating, a bell-wire staple or round-headed screw is driven into the ends of the frame, projecting a quarter of an inch or rather more, so that it is impossible to crush a single bee.

If any person is desirous of carrying out the oblong style of

hive during summer, it is an easy matter to transfer each comb to such shallow hives. A word of caution may not be out of place here in reference to these hives. The old readers of this Journal will remember the discussion on the subject under the leadership of the late Mr. T. W. Woodbury, who, amongst others, pointed out the danger of having combs transverse to the entrance, which any intelligent bee-keeper knows, but novices are apt to be misled by the glowing descriptions given of such hives. I have often pointed out the error of having hives of an oblong shape, and shown how bees ascend to supers before they will extend their combs laterally. We have had only one week of fine honey weather this season in which the bees stored in excess of their wants, unless on chance days, since July 1st. A large swarm I put into an observatory hive on June 26th with frames transverse to entrance is a great contrast to the Stewarton hives. The latter has carried on comb-building during much of the time the bees in the observatory hive have ceased to work and retreated from the combs further from the entrance. Contrary to the teaching that bees always store their honey at the back, this hive has all its honey stored right above the deepest part of the cluster of bees.

#### SEVERAL QUEENS IN ONE SWARM.

This year it is the exception and not the rule that the old queen leaves with the first swarm owing to so many old queens being deposed through long breeding, so that instead of one queen accompanying the first swarm there are often many. There are many singular phenomena in connection with this, but two or three I will notice. When many queens accompany a swarm they are restless, not hiving readily, and often fly a long way before clustering, and sometimes in many clusters. Then there is often a great difficulty in getting them hived, and they are very liable to fly off afterwards. Sometimes after such bees are considered safely hived a swarm will divide itself and fly out. I have had many such cases. On the 16th I had a swarm containing several queens. After it had been hived twenty-four hours it divided, and a swarm came off. Such swarms cause trouble and annoyance, and are perplexing to the uninitiated, to avoid which a constant watch should be kept on old stock, and the supernumerary queen cells pressed between the finger and thumb.

There is still a greater annoyance, not only with such abnormal swarms, if they can be so called, because I believe on the average two-thirds of all swarms do not possess the old queen. When shaken either in front or at one side of the combs, perhaps one-half will fly away unobserved, if not the whole of them, either to be lost or to cause the trouble of hiving again; sometimes under unfavourable circumstances, if a thunderstorm comes on. Although an expert succeeds often when shaking a swarm, either in front to enter at the mouth, or on the top or side of frames, the latter causes much trouble and risk to guide the bees to where wanted, and is often a cause of beginners becoming disgusted with frame hives. I never approve of shaking bees unless when it cannot be avoided. In the straw hive, the Stewarton and frame hives without feet, the bees can be hived at the first, but not so with what are termed complete hives carrying their own stand, unless with those on the old plan of having the feet attached to the floor.

Many frame hives are ill adapted for stocking bees, but all should have facilities for that purpose. My hives are made with an easy sliding floor. A hiving box takes its place, which may be described as an oblong box of proper size to slide underneath the hive, fitted with a very light floor easily fastened or detached from hive. The crown of this box is of three or more pieces pivoted at the ends. A strong wire passes underneath these and keeps them close and firm. The bees are hived into this, slid beneath the hive, the wire is withdrawn, the flaps fall down, and the bees ascend without causing either fuss or loss. This hiving box is admirably adapted for taking or sending swarms to a distance when the crown is covered with perforated zinc, and ventilation also from beneath; the flaps give foothold to the bees, so that it is impossible for them to smother if anything like care is taken with them. The box being very light, a child could carry a swarm with ease and safety a long distance.

During this month all the belongings to hives should undergo a thorough overhaul to destroy the eggs of moths. Boil what can be boiled, and dress with carbolic acid where that cannot be done. Earwigs and spiders destroy all moths. I preserve all these useful and affectionate creatures.

#### THE SEASON.—JOINING SWARMS.

As the season is now upon us to make the most of our bees, but in which the largest harvest of honey is to be obtained, providing the bees have access to the Heather, and fine weather favours the blooming period, the stocks strong and supers well



wrapped up, the bee-keeper will assuredly be rewarded with a bountiful harvest. There is seldom any difficulty in manipulating straw hives, but too many frame hives are not so easily managed in this respect. To be successful in joining swarms to frame hives, simply uncap some of the cells, disturbing the bees a little until every one is gorged with honey, the swarm to be added having previously been well sprinkled with thinned honey or syrup. Now cast the swarm on to a frame hive, and not a bee will be killed. Where there is no ventilation take steps to have all floors provided with this safety valve, not forgetting to make provision for the escape of the vitiated air at the top of the hive. That being attended to, overheating becomes impossible, and the stocks seated in pairs instead of equi-distant, so as to prevent confusion and fighting, all will go well. Then as supers are finished and empty ones added, all will have been done that the bee-master can do. We only hope and wait for a favourable season, which is at the present promising.

#### THE BEST HIVE.

A correspondent "Francis J. Jackson," is desirous of information as to which is the best hive. The best hive is the one that is managed best by the bee-keeper; but as I have often said that the narrow and deep hive which suits the habits and instincts of the bees must surely be the best. It is admitted by almost all bee-keepers that oblong hives do not seal their sections in the body of the hive so readily as on the top. This is my experience, and simply points to the fact that such hives are wrong. I am also satisfied that it is an error to suppose that bees begin comb-building more readily in the body or back of the hive than above. I have kept five different varieties of bees, and every one of these seem to work alike, preferring to work in supers than to fill oblong hives in the body with comb. Like your correspondent I have both written and spoken of what must be perplexing to beginners experiencing so much difference of opinion. The cause of this is not difficult to ascertain. Many bee-keepers who write on apiarian matters have not had experience. A favourable season makes them imagine they know all about bees. They then attribute their success to Mr. So-and-so's hive. I quite agree with the late Mr. Pettigrew that straw hives are not out of date, and never will be, but at the same time I will not place them on the same footing as some other hives, but certainly before oblong and shallow frames, while I am sure that the straw hive, in combination with either the deep compound frame or the Stewarton, will not be easily surpassed. As Mr. Pettigrew so continually advocated "good management," so do I, and the clever bee-keeper with proper straw hives with side slits and absence of centre hole, need have no fear of good results, either in supers, or should it be dript honey if cleanly done.

Times are changed now from what they were twenty years ago. We then had no difficulty in getting 2s. 6d. per lb. for supers, often 3s. 6d., and sometimes more; but now 1s. 6d. is the maximum, except in scarce years such as last one was, when 2s. was readily obtained for Heather comb. At no time now have we any difficulty in getting from 1s. 3d. to 1s. 6d. per lb. for dript honey; so that in reality, taking the wax into consideration, and the extra outlay for sections, dript honey is the least trouble and most profitable to the bee-keeper. So much has been written about the advantages of frame hives and non-productiveness of straw ones, that I am surprised that bee-keepers have not been up in arms long since. All the honey merchants in Glasgow I have conversed with prefer supers to sections; and while in Edinburgh I inquired which was most in favour, and all of them said supers holding from 3 to 8 lbs. were preferred. Sections were objectionable more ways than one. Large supers, if divisible, were also in favour. The foregoing, though brief, on the kind of hive, super, and honey, will, I think, be understood and accepted as reliable from experience.

The hive your correspondent speaks of, 17 or 18 inches deep, and double-walled, I do not approve of. If he will have Stewartons, he should have the original or Renfrewshire make. Never mind though frames are not interchangeable. It would have been to the advantage of many bee-keepers if they had never possessed interchangeable frames. The Stewarton hive in horizontal sections enables the bee-keeper to build up his hive to the required strength of the bees, and to deprive the bees of the overloaded top honey, as well as many other advantages which I may speak of again. The super for Stewarton hives had better not be over 4 inches deep, but have a number of them. If the outside case is made (which is better than doubled-walled sectional hives) sufficiently deep for three 6-inch boxes and two supers with the roof to lift off and on, so that it can be placed on the top super as they are tiered, it will be satisfactory. An outside octagonal case may be made by having two octagonal-

shaped hoops inside, the angles being screwed firm through holes in the hoop; or a cheap outside case with lifting roof may be made with four legs and five-eighth lining run horizontally, feather edge looking up, and its upper edge bevelled so that the water runs quickly from it, while the under edges of the upper boards serve as a drip. It is not necessary to have dividers with sunk hives, but if required they are easily used.—LANARKSHIRE BEE-KEEPER.



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Exhibiting *Lilium auratum* (Constant Reader).**—This is a hardy plant, and is also grown in pots for greenhouse decoration. We consider that flowers cut from plants established in borders in the open air are eligible for staging in stands of hardy herbaceous flowers, and also that specimens grown in pots and employed for greenhouse and conservatory adornment can be staged with greenhouse plants, unless there is any clause to the contrary in the schedules.

**Begonia Stems Decaying (M. F. W.).**—Possibly the stem has been crushed or bent at some time, so that the vessels of the stem have been ruptured, interrupting the course of the sap and causing a kind of decay. However, if all the other plants are healthy you have reason to be well satisfied.

**Outdoor Mushroom Beds (A. W., Colchester).**—It is obviously impossible to check the increase of temperature in hot weather. In the summer season if beds are made at all they should be in cool shaded places; but Mushrooms cannot be profitably grown during June, July, and August. Sprinkling the covering with salt water is the only method we know of checking slugs without injuriously affecting the Mushrooms. No one can tell how thickly a bed should be covered three weeks hence, as everything depends on the condition of the bed and the weather. Insert a thermometer in the bed, and regulate the covering as may be needed to keep the heat between 70° and 80°. The finest beds we ever saw had iron rods in them for testing the heat. One in every 10 yards length quite sufficed, and even "the French" could hardly say that could be seriously injurious.

**Strawberries (Cambridge).**—The three varieties you name are good, two of them, Sir J. Paxton, and Dr. Hogg, very good; the third, Eleanor, being large and late, but not very sweet. These will ripen in succession. Black Prince is the earliest established Strawberry, but it will have a formidable rival in Laxton's King of the Earlies. Perhaps the latest Strawberry is Loxford Hall Seedling. On page 42 (July 10th) you will find a list of excellent varieties for succession, from which you can choose the number you require, but all Strawberries do not succeed equally well in different kinds of soil. It is best to try several sorts and retain those best adapted to your garden.

**Vines Overcropped (Sigma).**—Without seeing Vines it is a difficult matter to decide if they are overcropped or not. Any that are in good health and carrying a fair number of bunches should continue to form strong sub-lateral growth beyond the bunches, but without producing more bunches. The fact of your growths in most cases being accompanied by a strong show of bloom may be a sign of weakness or of a check being given to the Vines either from overcropping or some other cause, this resulting in premature hardening of the growths. If your laterals are about 18 inches apart and alternating, half of them only should be allowed to perfect a good bunch of Grapes. Twelve well-finished bunches are of greater value than eighteen inferior examples, and overcropping should be carefully avoided accordingly. With regard to the length of time the various stages in Grapes should take we can only advise approximately, so much depending upon circumstances. It is generally about a month from blooming to the stoning period, and the latter will take up nearly as much time. The final swelling, colouring, and ripening varies considerably according to the varieties. The thin-skinned early sorts, such as Black Hamburgh, Foster's Seedling, and Buckland Sweetwater, may be fit to cut in about six weeks, while the thick-skinned Muscat of Alexandria, Lady Downe's, and Black Alicante require fully another month and sometimes longer to ripen to perfection. If you let the Vines take their chance till they give signs of insufficient vigour to finish off the crops properly, the chances are you will then be too late to do them any good. Examine the border now, and if at all dry, or if it has not recently been given any kind of rich top-dressing either of good short manure or some kind of artificial manure, then by all means assist the Vines with guano water as you propose. If the border is in a very moist state further waterings while in this condition will serve to saturate it, and perhaps contribute to shanking.



**Hydrangeas (E. B. D.).**—If you partly cut down the plants—that is, shorten them to the strongest growths to which you refer as sprung from the lower part of the stems, remove some of the surface soil and add fresh compost, plunge the pots in ashes in a sunny position, they will form sturdy growths that may possibly flower next year. If you cut the plants quite down to dormant buds they will not have time to produce growths strong enough for flowering in 1885. The young plants you struck in spring, and which are now established in 48-size pots, ought to produce fine crowns this autumn and large trusses in the spring and early summer. They should not be shifted into larger pots now, but plunged in a sunny place out of doors, and watered sufficiently to keep them steadily growing, reducing the supply as the autumn advances, and only giving sufficient in the winter to prevent the leaves shrivelling. The plants can either be placed in larger pots in the spring or top-dressed and supported with liquid manure when the flower trusses are visible in the points of the shoots.

**Striking Calceolaria Cuttings (E. A. E.).**—You are mistaken in supposing that the cuttings will not strike now. They will strike readily enough if inserted in sandy soil and kept moist and shaded to prevent flagging. The reason why October propagation is recommended is because the plants stand the winter better than if raised much earlier, and are sturdier in the spring and thrive better than plants that are rooted long before winter. Cuttings also are stronger and far more plentiful in October than in August.

**Budded Briars (G. D., Devon).**—We should not shorten the Briars close to the inserted buds, as if this is done before the buds have "taken" there will be a check to the flow of sap that may prevent the desired union of the buds with the stocks; while if the union is effected and the buds dormant yet healthy, it will be better for them to remain so until the spring, as if forced into growth late in the autumn, as they may be by shortening the Briars, the growths will not have time to mature, and will thus be liable to be seriously injured if not killed during the winter.

**Cucumbers for Winter (E. Mason).**—It is not at all too soon for sowing the seeds, or striking cuttings either. Many persons fail by raising plants too late. September-raised plants have not time for attaining the requisite strength for bearing from November onwards. The best winter Cucumbers we ever had were raised from seed sown during the last week in July. Grown with abundance of light and air and in rather firm soil, they made strong short-jointed growths, and produced far more fruit than it would have been prudent to allow to remain on the plants; in fact, bearing the plants heavily late in the autumn or early in winter is the best method we know of preventing anything like a good and regular supply of Cucumbers from Christmas till March. Cardiff Castle and Telegraph are good varieties for winter, some gardeners preferring the former, others the latter. As you have room for half a dozen plants you will not seriously err by growing three of each.

**Seedling Strawberries (Henry Fenwick).**—In consequence of the box being only half filled, the fruit, as might be expected, was so much shaken that not one berry arrived in anything like a sound state. All that we are able to say is, that the fruit is of average size, and the flavour appears good; but sound examples are necessary for judging with accuracy. If you draw up an advertisement and send it to the publisher he will inform you of the cost of insertion.

**Azaleas in Summer (E. Davis).**—The different advice you have had need not seriously perplex you. Some of the finest Azaleas are kept under glass always, but they are in houses that are well adapted for these plants, which have all the light and air needed for keeping them in good condition. It is different with plants that are crowded with many others in conservatories and vineries, and rather than allow them to be half-stifled there we should certainly place them in the open air for a month or six six weeks from the present time. If the sun is bright when the plants are removed from the houses it will be well to afford them slight shade for a week or so, but they will eventually endure the full sun and be benefited by it provided, and this is important, the root-action is good and water is applied judiciously. The pots should be shaded, as if the sun strikes directly on them it is almost sure to injure the roots.

**Venus' Looking Glass for Spring (Mrs. Lawton).**—This is one of the prettiest and hardiest of annuals, but it does not flower so early as some others, and is not off the ground soon enough for persons who wish to put out their summer bedders as soon as possible in May. If seed is sown thinly towards the end of the present month in an open position and not too rich soil, it will be a severe winter if it destroys the plants, and then if planted in clumps in mixed beds early in the spring will be very attractive in May and June; far more so, indeed, than plants that are raised by sowing in spring.

**Stove Flowering Plants (A. B. A.).**—To have the plants in flower by the end of June or early in July the Allamanda and Stephanotis must have their growth completed and thoroughly ripe by the end of October. They should rest for two months after the date given in a temperature ranging from 50° to 55° at night. The first mentioned may be kept quite dry at the roots, while the latter should have no more water than is necessary to keep the wood and foliage fresh. The 1st of January the plants should be started in brisk moist heat where the temperature can be maintained for 65° to 70° at night, with a rise of 5° or 10° by day. As soon as they show signs of growth, if the plants need potting this should be done. For some time after potting water must be applied with great care. The syringe should be used freely two or three times a day. The Clerodendron should be kept growing until the end of the year if possible; in fact, no attempt should be made to send it to rest. After that date it may be kept drier at the roots until the foliage ripens, and water can be entirely withheld from the roots. While at rest this plant should not be in a lower temperature than 55° at night, or else when wanted to start into growth it may fail to do so. This plant may be started into growth by introducing it into brisk heat about the first week in April, and it will then come into flower about the same time as the two plants started in January. The Bougainvillea should not be put to rest before November, and while at rest will bear being kept dry at the roots, and in a temperature of 45° to 50°. It should be started into growth about the middle of March the same as the others. It must be understood that when

these plants are put to rest water must not be withheld from them suddenly, but gradually, until the foliage ripens naturally and the wood becomes firm. The Anthurium should be kept in a stove temperature until the end of the year, and then in a night temperature of from 50° to 55° until the middle of March, when it can again be returned to the stove. While at rest much water will cause the roots to decay in the lower temperature which is essential to induce rest and keep the plant back for the time you want it to flower. If your Allamanda and Bougainvillea are as large as you need them they will require pruning before they are started, but this we presume you understand. It is better to be a week too early than several days too late in having plants in flower for a particular occasion, as they can be retarded a little if needed; but if too late in the earlier stages of growth, while unusually dull and cold weather occurs later, it is beyond the power of the cultivator to attain his object of having them in the best condition on a specified date.

**Name of Fruit (T. A.).**—The Peach being overripe when packed, and the paper box much too fragile, it was crushed, and the escaping juice from the fruit saturated the cardboard almost to the melting point. It is a wonder the postal authorities delivered it. Of course, the fruit is unnameable.

**Names of Plants (Pen and Ink).**—The specimens are in better condition this time, and it is clear you have taken great pains to keep them fresh. There is no plan so good as packing them so as to be immovable in a small box with a little damp moss or other moisture-holding material secured round the stems, and the flowers themselves enclosed in a soft green leaf, such as Spinach or Rhubarb with the midrib removed; enclosed in dry paper the moisture is extracted from them in hot weather. The names of your flowers are—1, Mimulus cardinalis; 2, Francoa ramosa; 3, Bartonia aurea; 4, Astrantia pauciflora. (Augusta).—Cyranthus carneus. (Clifford).—Calystegia Sepium. (J. R. P. & Sons).—Silene armeria var. compacta. (Young Gardener).—1, Lysimachia Nummularia (Creeping Jenny); 2, Ajuga reptans, employed in spring bedding; 3, Aspidistra lurida variegata; 4, Philadelphus coronaria; 5, Magnolia grandiflora. (S. A.).—Alstroemeria aurea. Plant in the autumn. (Flora).—1, Oxalis corniculata; 2, Chenopodium album; 3, not recognisable; 4, Plantago media; 5, Sonchus asper; 6, Polygonum viviparum.

**Supering—Removing Bees and Honey (F. S.).**—The bees will fill the super if they can gather sufficient honey to do so, and you may then remove it; but we cannot advise you to drive the bees or take the honey from the hive so late in the season as you propose, as that is never a safe course for inexperienced bee-keepers to adopt.

**Supering (R. S. T.).**—If the hive and super are full by all means remove the latter and put on another. If the weather remains fine and the bee pasturage of your district good, there will be no difficulty in having this second super filled, unless it be a very large one, and it may be taken off also.

**Bees Swarming (T. H.).**—You appear to us to have made the man a very liberal offer under the circumstances. He can undoubtedly be proceeded against for trespass, and we think something more, but on this point a solicitor is the proper person to advise you. Possibly if you were to send a policeman to the man he might settle the matter without further difficulty. According to your statement, however, you appear to be completely master of the situation.

**Joining Swarms (Richard Haynes).**—You wish to learn which swarms to take and how to join bees. The old stocks are certain to have queens of this year. New combs are the best both as stocks as well as for dripping. You must determine which you will take. Preserve the youngest queens and have both bees fully gorged with honey, then shake them altogether. Secure the oldest queens, kill them, then put each amongst its respective bees. This protects the other queen from rough treatment.

**Uncompleted Sections (J. Marriott).**—You have about 80 lbs. of uncompleted sections with no chance of being filled from gathered honey this season. Select your best hive for this purpose—that is, a strong one and which has all its body combs full of brood or honey. Place a portion of your sections on it, and feed the remainder either from below or at extension, but which few hives have. If your hives have none of these facilities place some of the sections at the entrance after sunset, and lift them by sunrise next morning. After you get some of the sections completed and the others emptied, hermetically seal the latter, and store them in a dry place for the next season.

#### COVENT GARDEN MARKET.—AUGUST 6TH.

Soft fruit still in good supply with prices unaltered.

##### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. ..	1/2 sieve	0 0 to 0 0	Oranges .. ..	100	6 0 to 10 0
Cherries .. ..	1/2 sieve	18 0 0 0 0	Peaches .. ..	per doz.	4 0 12 0
Chestnuts .. ..	bushel	0 0 0 0 0	Pears, kitchen ..	dozen	0 0 10 0
Currants, Red ..	1/2 sieve	3 0 4 0	„ dessert .. ..	dozen	1 0 5 0
„ Black .. ..	1/2 sieve	3 0 3 0	Pine Apples English ..	lb.	2 0 3 6
Figs .. ..	dozen	2 0 0 0	Raspberries .. ..	per lb.	0 3 0 4
Grapes .. ..	lb.	2 0 5 0	Strawberries .. ..	lb.	0 2 0 9
Lemons .. ..	case	15 0 21 0	St. Michael Pines ..	each	2 0 6 0

##### VEGETABLES

	s. d.	s. d.		s. d.	s. d.
Artichokes .. ..	dozen	2 0 to 4 0	Mushrooms .. ..	punnet	0 0 to 1 6
Beans, Kidney ..	lb.	0 6 0 0	Mustard and Cress ..	punnet	0 2 0 0
Beet, Red .. ..	dozen	1 0 2 0	Onions .. ..	bushel	2 6 3 0
Broccoli .. ..	bundle	0 9 1 0	Parsley .. ..	dozen bunches	2 0 3 0
Brussels Sprouts ..	1/2 sieve	0 0 0 0	Parsnips .. ..	dozen	1 0 2 0
Cabbage .. ..	dozen	0 6 1 0	Potatoes .. ..	cwt.	4 0 5 0
Capsicums .. ..	100	1 6 2 0	„ Kidney .. ..	cwt.	4 0 5 0
Carrots .. ..	bunch	0 3 0 4	„ New .. ..	cwt.	5 0 9 0
Cauliflowers .. ..	dozen	2 0 3 0	Rhubarb .. ..	bundle	0 4 0 0
Celery .. ..	bundle	1 6 2 0	Salsafy .. ..	bundle	1 0 0 6
Coleworts .. ..	dcz. bunches	2 0 4 0	Scorzonera .. ..	bundle	1 6 0 6
Cucumbers .. ..	each	0 3 0 6	Shallots .. ..	lb.	0 3 0 0
Endive .. ..	dozen	1 0 2 0	Spinach .. ..	bushel	1 0 2 0
Herbs .. ..	bunch	0 2 0 0	Tomatoes .. ..	lb.	0 4 0 0
Leeks .. ..	bunch	0 3 0 4	Turnips .. ..	bunch	0 4 0 0
Lettuce .. ..	dozen	1 0 1 6			





## SEASONABLE HINTS ON SHEEP MANAGEMENT.

THE separation of ewes and lambs is an important event in flock management, marking the end of a twelvemonth's work, bringing us face to face with results, and warning us to prepare for another cycle wherein the work awaiting us, though but very much a repetition of that done in the past, requires due consideration and such alterations and improvement as experience has shown to be necessary and possible. Three flocks must be passed in review—the ewes, the lambs, and the tugs. Taking them in the order mentioned we have first

**THE EWES.**—Here we have to draft out the over-age ewes, and it is unwise to continue breeding after the teeth become broken or are falling; a close scrutiny is therefore made of all full-mouthed ewes, and none are kept whose teeth are at all in a doubtful condition. As a matter of course all that have shown signs of debility or which proved bad mothers at the time of lambing were then marked for drafting. Occasionally it is found that nothing will induce a ewe to suckle its lamb, or it requires much watchfulness and pains to induce it to do so. All such troublesome sheep should be discarded, as also should any in which the slightest tendency to protrusion of the uterus was perceptible during parturition. If breeding ewes have to be purchased for the enlargement or formation of a flock preference should be given to “four-tooths,” which means ewes three years old having four of the permanent teeth fully developed, and which have already had one lamb, and are at the best age for breeding fine lambs. We never go to a fair for such sheep, but to the Michaelmas sales of outgoing tenants or sheep farms.

**LAMBS.**—These are usually grouped for drafting into three classes—the best, seconds, and culls. If the home farmer breeds largely it is customary to select the best for sale, forcing them on as fast as possible, so as to bring them into the market fat and ready for the butcher. It has been shown by careful computation that this may be done at a prime cost of 1s. 2d. per week, or, including green food, shepherding, troughs, and hurdles a total of 1s. 6d. per week, and for this outlay really fine well-bred Hampshire Down lambs improve at a money value of 2s. 6d. for the first six months. This statement of profit would probably be found somewhat beyond the mark this year. At a South Down fair in the last week of July we purchased a flock of excellent “seconds” for £1 7s. 6d. apiece, and had the best lambs offered us at £1 18s. These prices are remarkable, showing as they do a decline of 6s. per head from last year's rates. No doubt the reduction was partly owing to the drought, and the subsequent showery weather may send up prices by the time this appears in print. The culls or weakly lambs are always saleable at prices proportionate to condition.

**TEGS.**—Sheep of a year old is literally the meaning of the term; under it we include the killing flock of all ages from which the home farmer draws weekly supplies for home consumption. Under good management this flock should now contain enough sheep for the next ten or twelve months, but it must not be forgotten that the drafted ewes afford a valuable auxiliary supply of excellent mutton most economically used for home consumption, for the butchers will never give so much for old ewes as for tugs. Yet their customers never by any chance hear of cheap mutton, the same high price being charged for all of it. By folding on grass the ewes are in condition for killing by winter. Care is taken to keep the carcasses hanging long enough in the slaughter house to insure tenderness, and then the meat is of the dark colour and high flavour so much valued by the connoisseur. This is a matter demanding personal attention, for if the carcasses are handed over to a careless cook, say a day after the killing, there will soon be complaints of tough mutton. Tugs may be purchased now, but they are sent to fair and market ripe for the butcher, and are proportionately high in price. Better would it be therefore to make up our quantity with ewes, of which there will now be plenty on sale till the end of September. This is only recommended upon emergency. It should be our aim to obtain enough lambs annually either by breeding or purchase to keep up the steady supply for killing without high feeding. We are now killing excellent two-year-old grass-fed sheep of an average weight of 70 lbs. that have had very little corn or cake. We hope next week to tell why any was given them.

(To be continued.)

## WORK ON THE HOME FARM.

**Horse and Hand Labour.**—During corn harvest horse and hand

labour is so generally combined as to be practically inseparable. Wheat harvest began in Essex by the cutting of White Talavera Wheat at Malden on July 21st. On the same day at West Grinstead in Sussex there was a successful trial of a Hornsby's light-draught string sheaf-binding reaper in a field of winter Oats, the work being done clean and well, an acre being cut and bound in an hour. For heavy crops of Wheat a self-raking reaper, leaving the sheaves ready for tying, will probably prove more generally useful. Wheat and spring Barley have also been cut in Kent, and with bright weather the harvest will soon be in full swing in all the southern counties. Wheat laid down by wind and heavy rain is liable to sprout, and must be watched closely, and not a day lost in cutting as soon as the milky period is past, squeezing a few grains being the test, and as soon as the milk-like juice ceases to exude from pressure the corn is ready for cutting. “Cut early and thrash late” is a safe maxim to follow with Wheat. In showery weather we prefer mowing Oats into swathes, turning the swathes once or twice, and carrying to the rick without binding, our chief aim being to avoid excessive heating and subsequent mildew. Barley is a fine heavy crop, and it will be left uncut till the Wheat is secured, as it is all the better for being fully ripe before it is cut. Our silo has been filled twice with coarse herbage, cut and carried green from some poor pastures. It was put in in layers a foot thick, each layer being well trodden by the men. When so filled pressure at the rate of 130 lbs. per square foot was applied, and in two days the silage had sunk 4 feet. The pressure was then removed and it was again filled with grass, the same pressure applied, and it sank 18 inches, which space will be filled later on. A peculiar and rather pungent odour is perceptible, but there has been no visible escape of vapour.

**Live Stock.**—A gradual improvement is visible in the growth of grass, the recent heavy showers having rendered an abundance of green food a certainty during harvest. This will not be the case, however, upon poor grass land, and a daily supply of tares will prove highly beneficial to stock upon such land. The dairy cows are now living upon the sweet, fresh, succulent growth of the aftermath; the butter is at its best both in colour and flavour, and potting for winter is being done twice every week. Care is taken to quite fill each jar or pot at once, and not gradually; and, in working the butter for potting, to 22 lbs. of butter we add 16 ozs. of salt, a teaspoonful of saltpetre, a tablespoonful of best powdered white sugar. This excellent formula is highly recommended by Professor Sheldon in his great work on dairy farming. He also commends a new agent for preserving butter, termed “Glacialine,” claiming for it the merits of being tasteless, odourless, harmless, preserving butter quite sweet for a much longer time than salt will, and entirely removing the bitter taste in winter butter. It is our practice to have a daily churning for the household supply with a box churn, and a bi-weekly big churning with the barrel churn. The second litters of pigs are healthy and unusually abundant. A litter of ten a month old now will prove useful for our home supply of porkers in autumn. The best of the early pigs were reserved for bacon. They are kept about thirty weeks from the birth, and weigh some 240 lbs., our object being the production of good sides of bacon and hams weighing 20 to 25 lbs.

**BATH AND WEST OF ENGLAND SOCIETY.**—At a Council Meeting held at Bristol on Tuesday, July 29th, Mr. Brown inquired if the Council were aware that there was a desire on the part of Bristol and the neighbourhood that the Society should hold its annual meeting in that city in 1886, and if such a proposal would be likely to be favourably received by the Council. Some discussion ensued, the general feeling elicited indicating that an invitation to hold the Show in that city would be very favourably entertained by the Council. Mr. G. Gibbons gave notice of motion to the effect that a sum of £100 be apportioned by the Society for the special encouragement of Dairy Husbandry.

## METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain	
1884. July and August.		Baromet- ter at 32a and Sea Level	Hygromet- er.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.		On grass.
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday .....	27	29.817	57.2	55.1	N.E.	59.0	68.3	52.3	115.9	51.8	0.191
Monday .....	28	30.139	59.6	55.8	N.	59.6	71.8	52.3	121.6	47.9	0.119
Tuesday .....	29	30.57	65.0	62.0	N.E.	60.2	68.7	55.2	92.9	54.4	0.003
Wednesday ..	30	30.217	62.4	60.5	N.E.	60.9	74.2	60.3	102.5	58.7	—
Thursday .....	31	30.202	63.5	62.0	E.	61.0	75.7	55.8	103.4	48.8	—
Friday .....	1	30.110	68.3	63.5	E.	61.7	79.7	55.9	107.4	49.4	—
Saturday ....	2	29.934	73.8	66.0	S.W.	62.3	81.6	55.9	122.8	51.6	—
		30.068	65.0	60.7		60.7	74.3	55.4	109.5	51.8	0.318

## REMARKS.

27th.—Showery all day, at times heavy.

28th.—Fair day; showery after 5 P.M.

29th.—Dull all day.

30th.—Very dull and oppressive.

31st.—Rather brighter, but very damp.

August 1st.—Hazy morning, then fine and warm.

2nd.—Brilliant and very fine day.

Showery at the beginning of the week; fine and hot towards its close.—G. J. SYMONS





## COMING EVENTS

14	TH	Maidenhead Show.
15	F	
16	S	
17	SUN	10TH SUNDAY AFTER TRINITY.
18	M	
19	TU	
20	W	Shrewsbury Show (two days).

## SPOILING TREES AND SHRUBS.

**I**F it could be made known how many thousands of acres of land occupied by plantations in this country are for all practical purposes wasted, and how many millions of trees that might have been both beautiful and valuable are spoiled by neglect, the figures would be nothing short of startling. There is not one acre of ground out of ten where the thinning of trees has been systematically conducted, and the result is a confused jumble of miserable examples of little or no value for timber, and only "beautiful in the mass," where each hides the other's faults and deformities.

As splendid evidences of shortsightedness there is surely nothing comparable to the woods of Great Britain. It is quite true that some owners of estates have been alive in time to the resources of the soil for timber production, and wise enough to engage experienced foresters and allow them to discharge their duties according to the dictates of experience. The consequence of this enlightened policy is woodland at once profitable and creditable, instead of a mere wild waste of spoiled trees of no other use than for affording cover for game. Those few bright spots, really well managed plantations, bring out by the force of contrast the negligent state of the remainder. The observant man and thoughtful, who has some knowledge of the resources of land and the value of timber, wonders why such a deplorable state of things has been allowed to become paramount, and well he may.

In innumerable instances the present owners of woods have been and are helpless in the matter. The evil has been of long growth—the growth of generations, and it has grown in too many cases beyond remedy. But cannot the crowded overgrown trees be thinned? Undoubtedly they can; but tall branchless trees, with hide-bound bark and few roots, cannot be improved by thinning. No matter how many may be removed, those left will remain unsatisfactory and decidedly less safe than before.

There is a time when the violent thinning of long-neglected plantations becomes even dangerous. Trees drawn up in thicket like a lot of Bamboos, with only a few stunted branches and leaves at the top, make few roots, because such trees need but few, and when an opening is made into the mass by the removal of half or two-thirds of the "poles," those remaining are no longer able to resist the violence of the gales, and acres of trees may be laid low in a few hours by a passing storm. That has often occurred when trees too long neglected have been thinned too much, and will occur again if the same measures are adopted with belts and plantations that have been neglected for years. It may be that certain tracts are better cleared thus summarily, because then a fresh start can be made in arboriculture, and the work conducted on sound principles; but in not a few instances the removal of a sheltering belt of trees or a distant plantation would be a serious loss. It is well, then,

not to act hastily and thin long overgrown masses of trees "with a vengeance."

While late and extreme thinning is seldom profitable, and may be disastrous, the importance of early thinning cannot possibly be over-estimated. Plantations well planted with trees naturally adapted to the soil, and systematically thinned, will increase in value yearly, while the individual specimens will be objects of admiration instead of, as in the case of examples in neglected groups, little short of eyesores.

"Woods are unprofitable" is an oft-heard remark, but this is, in the majority of cases, because they are ill-managed. Initial mistakes in planting and immediate after neglect in tending are the origin of unprofitable and unsatisfactory plantations. Those mistakes are so common that they may be seen almost everywhere, and they should be regarded as evils to be avoided.

All readers of this Journal may possibly not be greatly interested in the discussion of the subject under notice, but many of them are very directly, and others ought to be, for it has an immediate bearing on the management of parks and gardens; and in these, or very many of them, tree and shrub-spoiling is far too prominent. Examples of thoughtless planting and gross neglect in thinning are visible in half the parks, pleasure grounds, arboretums, and cemeteries in the country. In instances innumerable the destruction of what might have been handsome specimens is lamentable. In some cases the planting has been done in a higgledy-piggledy way, and this has gone on increasing until there is general confusion and spoiling all round. In other instances the trees have been disposed with thought, and had the idea of the planter been carried out by the timely removal of what was put in for shelter and immediate effect, the trees and shrubs intended for full development would now have been handsome specimens instead of miserable distortions or one-sided monstrosities.

But whose fault is it that such negligence has been permitted? Is there not a cause? It is not easy to fix the fault nor to indicate the real cause of the evil in question. There is not a doubt that men are in charge of overgrown masses who fully appreciate the necessity of thinning, and indeed long to be able to accomplish the work; but if they are not prohibited from "meddling with the trees" they have no means at their disposal for preventing ultimate failure. Some owners of pleasure grounds are actually so shortsighted as to prefer a tangled mass—a wild interlacing of branches, because it "looks natural." That is simply unnatural nonsense, for such false notions cripple and check the work of Nature, and impede the development of Nature's grandest ornaments—noble trees. By such fads and fancies Nature is stifled and true art murdered; and yet, forsooth, there are persons who indulge in such whims, who, in the most self-satisfied manner, regard themselves as "leaders of taste." This would be ludicrous if it were not serious. What will be the state of such overcrowded shubberies a few years hence? This: Instead of splendid specimens that Nature furnishes when the chance is afforded, we shall have an arrangement that is fairly comparable with a lot of besoms stuck into the ground by their shafts—bare stems and stumpy heads. That is what will be, must be, the result in a few years' time in not a few public parks and private gardens if the present policy of inactivity is much longer indulged in.

In the case of public parks, arboretums, and cemeteries, the unsatisfactory state of the shrubberies is possibly due to the conflicting opinions that find utterance at the "board." These boards are composed of excellent business men, no doubt, but their knowledge of trees and shrubs is necessarily limited; and they either cannot trust the gardener in whose charge the ground is, or they are tied by pledges of "economy" to keep down expenses. But there is no true economy in failure. Either trees and shrubs are worth planting or not. Then if planted, where is the economy of permitting



them to be spoiled? This is in truth not economy at all, but the exact reverse of it—waste. If the means are provided for keeping trees in order and encouraging their development, and the work is neglected, the fault rests with the manager. And it must be said that all gardeners are not so wide-awake as they ought to be to the importance of tree and shrub-tending. More is the pity. They, or some of them, pride themselves more on a house of Grapes, a few Orchids, or possibly Zonal Pelargoniums; but whatever fame they may achieve in growing these will be ephemeral in comparison with the permanent monuments they may raise and which will endure for generations in the form of grandly developed and effectively disposed trees and shrubs.

Instead of being spoiled, trees should be cherished; instead of being neglected they should be tended; instead of being despised they should be admired greatly. But are they? Look at the woodlands and pleasure grounds now and let them answer.

Now is the time for examination with the view to improving what may yet be improveable. Another year, or even a few months, may be too late. Pruning, or at least marking for that, or for removing, should be done now the foliage is still green and the approaching ruin apparent. When the trees are leafless the danger is less manifest, but it is still there. Let it be seen in time and faced boldly, yet prudently, and the reproach of spoiled trees and shrubs, of choked plantations and overgrown pleasure grounds, will in time be removed.

And now, lest it should be thought that the picture of tree and shrub-spoiling has been overdrawn, let the experienced readers of these notes examine the parks and gardens that have been formed and planted in their districts during the past fifteen or twenty years, and judge for themselves whether the present condition of the grounds is satisfactory, or whether there has not been neglect in the management of the trees and shrubs. I shall be quite content for all that are perfect and all that are imperfect to be enumerated, and for the accuracy or otherwise of my opinions to be judged by that test.—A NORTHERN GARDENER.

#### CLOSE CROPPING IN KITCHEN GARDENS.

WHERE the space is somewhat limited and the demands comparatively heavy, those in charge of a kitchen garden do not always find it an easy matter to maintain a constant supply of vegetables in season. More judgment is required of a gardener than is at first sight apparent, as not only has he grown a sufficiency of everything, but he in so doing has to be equally careful not to unduly favour one kind at the expense of the other. He must keep up a regular supply, and that, too, in spite of various hindrances, such as scarcity of manure and labour, various insect and animal enemies, destructive frosts, long spells of showery or dry weather, and other evils which he has to contend with. Some there are who profess to garden on scientific principles, paying particular regard to the supposed necessity for rotation of crops, while others pay less heed to science, and are far less particular about the change of crops. Amongst the latter I must be included, being of opinion that there are but few gardens where a systematic method of cropping can be adopted. Here, for instance, no two quarters in the garden are alike, and anything like proper rotation of crops is out of the question. In one place Onions will do well, and ten yards beyond, where the soil is colder and heavier, will fail, and it is the same with other root crops. As a consequence certain of the best working quarters must be devoted principally to the root crops, Celery, salading, and early sowings of Peas and Beans, while the heavier-working quarters have to be almost continuously cropped with fruit bushes and the various Brassicas. As it happens, this plan renders close cropping a simple matter, and failures are less rare, as we always know where certain kinds succeed best.

If manure were applied once in three years the case would be very different, as then there would be greater necessity to study what food certain plants derive from the ground, and which class of plants would be most benefited by what is left untouched. We crop as heavily as possible, and once a year at least return as much as we can to the ground in solid farmyard manure, varied with occasional dressings of ashes, garden refuse, lime, soot, salt, leaf soil, or any other fresh decaying substance

likely to be beneficial. Deep digging or trenching, for reasons hereafter to be given, is never resorted to, and we very rarely dig the ground for any summer-planted crops. If the latter were attempted all the work could not be done, neither would the crops do so well. Summer digging is most laborious on our heavy land, and it would never be sufficiently broken up for either seed-sowing or planting.

The question may be asked, What has all this to do with close or even successful cropping? My anticipatory reply is, Much in every way, as by no other means could the garden be kept so closely cropped. If I held the notion that the ground for nearly every successional crop must be dug, and perhaps manured, much space would often remain uncropped, simply because there were insufficient men to do the work. In our labour-economising fashion we contrive to keep every quarter closely cropped, and the produce, too, is not always the worst in the neighbourhood.

I will endeavour to give a few instances of what I consider profitable, if unscientific, close cropping. The warmest border I have never fails to yield a heavy crop of Potatoes, and soon after these are cleared and the ground levelled, drills are drawn 2 feet apart for Cauliflowers and early Broccoli. For this position I prefer late-sown Veitch's Autumn Giant Cauliflower, Veitch's Autumn Broccoli, and Snow's Superb. They are moved from where they are pricked out and replanted with a trowel about 2 feet asunder. During dry weather they are watered occasionally till well established, and usually receive a strong dose of liquid manure before they are earthed up. Here, then, are obtained several hundreds of late Cauliflower and early Broccoli hearts at a time when they are most wanted, and all are cleared off long before the ground is again required for Potatoes. On this same border Peas have failed twice in five seasons, but on a south-west border they do well year after year, and directly these are cleared off drills are drawn with a heavy hoe, next soaked with liquid manure, and then planted with Snow's Broccoli, and very hardy and very serviceable the latter generally proves. In the same manner a south-east border suits early Cauliflowers, and subsequently the ground is hoed over, drills drawn, and either planted or sown with Endive. There are four east borders, and these are cropped almost as profitably as the warmer borders. One is closely planted with Leeks, these being followed with late Broccoli; another produces the earliest Turnips, these being succeeded by autumn Cauliflowers; another is first occupied with thousands of pricked-out Broccoli and other plants, and these are followed with winter Spinach; and the fourth is cropped with early Savoy, followed the next spring by Turnips.

No attempt is made to plant Broccoli or Winter Greens among the strong-growing Champion and Magnum Bonum Potatoes; in fact the principal portion of our late Potatoes are grown on ground that for four seasons have been given solely up to them. All the manure this ground gets is by no means formidable, and all the rotation consists in following the Magnum Bonum with the Champion, and *vice versa*, yet there is apparently no falling-off in the quality or weight of the crops. Widely planted Potatoes do not exhaust the ground half so much as we imagine, and the Potatoes are no more liable to disease on such frequently planted ground than they are in quite fresh positions. The second early Potatoes are planted on a quarter which is fairly light in texture, and between these are planted several sorts of successional and late Broccolis. The latter are earthed up as the Potatoes are cleared off, and are followed the next season by Celery. The Celery trenches being dug early admits of the spaces between being cropped with Lettuces and early Kidney Beans, and the former especially are very fine in these positions. After the Celery we crop with Peas, and as fast as the latter are cleared off, providing the ground is not very hard, Broccoli, Savoy, or Kale are planted. The bed of autumn-sown Onions is generally followed by Coleworts, and the spring-sown Onions are cleared off in time for the ground to be planted with the July-sown Cabbage, no digging being necessary in either case. It may be the latter would grow to a greater size on heavily manured newly dug land, but we plant thickly, and prefer small heads to large ones. Besides, our undug land is always the driest and warmest during the winter.

Directly the worn-out Strawberry beds are cleared off the ground is at once planted with Broccoli of sorts, strong pricked-out plants, and which are transplanted with a trowel, being prepared for the purpose. These do not generally grow to a great size, but they are the most hardy Broccoli we have, and produce good serviceable heads. The spaces between the newly planted rows of Strawberries are planted with late Lettuce for early winter use, early or hardy Lettuce for spring use, and Tripoli Onions. Asparagus Kale is extremely hardy and very good, and this we sow between rows of late Peas and runner Beans, and



thin out freely much as we would treat Spinach. From these rows we pick great quantities of Greens late in the spring. Between the young plantations of Raspberries, Gooseberries, and Currants we first grow a row or rows of early Potatoes or Turnips, and directly these are lifted and stored the ground is planted with Read's Hearting and other Kales, and although the site is low and cold, the Greens seldom fail. Brussels Sprouts are of much greater value, and these require plenty of room and a long season's growth. We have tried Broad Beans between them, but these tend to draw up and weaken the sprouts, and we now give them all the ground from the commencement. They are followed by late Peas.

In conclusion, let me urge upon all the necessity for closely cropping, especially the corners, which, if planted with Savoys, Coleworts, and Greens, may tend to maintain the supply when choicer kinds have been destroyed by frosts.—W. IGGULDEN.

### CHOICE ALPINE PLANTS.

**GENTIANA BAVARICA.**—Only those who have seen this lovely little plant can form anything approaching an adequate idea of its real beauty, and only those who have witnessed it flowering in its mountain home can know anything of its attractiveness. No lover of alpine has yet dared to pronounce this an easy plant to grow in this climate of unceasing variations. All alike seek information as to the secret of its cultivation, and the information imparted to anxious inquirers is generally as varied as the climate to which it will not yield. I am not disposed to lay down hard-and-fast rules for the cultivation of alpine, since years of practical experience and close observation have taught me otherwise; but with the plant in question (which must be regarded as an exception), after repeated trials in a variety of situations and soils, the same practice has taught me that two conditions must exist to ensure growing it successfully; these are primarily abundant moisture at all seasons, with plenty of sun and light. It is not an easy matter to make arrangements for these unless there is an abundant supply of water either in the shape of a pond, or bog garden, or running stream; the trickling of a stream it delights in above all else, for I need hardly add that stagnation must in all cases be carefully avoided.

I have this week been engaged in planting this with other choice plants, and I will give in as few words as possible my mode of dealing with it. In the first place, the site to be planted was south-east, which guaranteed the one condition of sun and light. It was no elaborate or expensive rockery about to be planted, but merely a border in which for years past spring bedding plants had found a home, now happily replaced by permanent occupants, which may one day each be features in themselves. To suit our purpose the border was raised several inches, placing stones here and there to form rude pockets as it were for each. Unfortunately, no water is to be had without carrying it to the spot; so, having an abundance of rich maiden loam, we prepared to plant our treasure. Selecting a compact little spot, edged with a white sandstone, we took out the ordinary soil to a good depth and supplied rich rough turfy loam, and placed the plant in position, filling in with rough turf and broken sandstone, ramming exceedingly firm, and placing a thick covering of sandstone over the surface, treading firmly against the plant, and covering lightly with soil. Stones were then placed around the whole, and the joints puddled with clay to make it as watertight as possible. There it will receive copious waterings till the heavy autumnal rains begin; and the stones immediately beneath the surface will prevent a too rapid evaporation, and I have but little doubt as to its success. It is, however, nowhere so much at home as it is beside a running stream, where fresh and continuous supplies are always forthcoming. Under cultivation it is among the rarest to be seen in good condition, and where it cannot be accommodated with something like saturation in the border or rock garden it should be grown in pots or pans plunged half their depth in water.

In general appearance the flowers of this species resemble those of the Vernal Gentian; but it is readily distinguished from it by its more dense little tufts of Box-like leaves, and by its tiny flower stems thickly set with foliage and terminating with flowers of the deepest and most brilliant blue, so intensely brilliant that methinks it even more charming than the lovely *G. verna*. It is a native of the high Alps of Europe, growing 2 to 3 inches high, and is only found in perfection in spongy boggy situations, where the soil is so full charged that the water oozes freely on the slightest tread. Endeavour to obtain established tufts to begin with, and one patch of its lovely flowers will repay all extra care and trouble, and will prove a source of daily enjoyment to watch its unfolding buds in the morning sun.

**CAMPANULA RAINIERI.**—A sturdy little mountaineer from

northern Italy, having large, erect, somewhat funnel-shaped blossoms of a dark blue, and is a most pleasing and distinct member of its genus. It is comparatively rare in cultivation, though by no means difficult to grow or to increase, and it is somewhat surprising that it is not more generally met with. It is more vigorous in habit than any other of the dwarf Harebells, and is adapted for the border or the rockery. It is readily increased by division and also by seed. It grows best in moist situations in very sandy loam, and is usually from 3 to 6 inches high, the latter height, however, being a rarity.

**SILENE VIRGINICA.**—One of the best and most valuable of recent introductions to our list of good plants, and is one of the most desirable rock plants in cultivation. It is at present only sparsely distributed, and should receive every possible encouragement so as to extend its now limited cultivation. It is of neat slender growth, and attains a height of 18 inches; not strictly alpine, perhaps, still too beautiful to be lost sight of. Its lower leaves are ovately spatulate, slightly pubescent, the upper ones oblong lanceolate; its flowers are of a brilliant crimson scarlet hue, and have a very striking appearance. It delights in a rich though light sandy loam, and is adapted for the choice border or the rock garden; in either case, do not give it a too-exposed position. It is easily propagated by division and also by seeds. Slugs are its worst enemy, often destroying the whole plant. Seeing, however, that it is no ordinary plant, and that special precautions are necessary, it is advisable to place either some soot about the plants or bran, or form a ring with cotton wool; they seldom face the latter. It flowers in early summer, and is doubly valuable, inasmuch as it to some extent fills up a break which long existed among hardy plants. It comes from North America.

**ANDROSACE LANUGINOSA.**—This differs from the majority of the species of this lovely genus. It is of procumbent and sometimes branching habit; indeed, when growing freely I have known it to make stems a foot long in a season. It differs, too, from all the rest by being a profuse bloomer. In warm favoured counties where a free genial air exists it commences flowering early in July, and continues producing its compact heads of lovely flowers far away into the autumn, this last-named particular being in itself sufficient to claim the special attention of the cultivator. It is, moreover, of easy culture, and does not suffer from damp as do many of the tufted members of this genus. *A. lanuginosa* is perfectly hardy, and once planted in a suitable position on the rock it will take care of itself. It should have a sunny position, and should be planted in equal parts of peat and loam to a good depth, with an abundance of grit; these are essential to its well-being and free growth. I have never known an instance where it has succeeded in ordinary close soils. In very light sandy soil it will grow; but to attain perfection with it nothing will be found to equal what I have prescribed above. It should be allowed to ramble at will, and very pleasing everywhere are its compact umbels of flowers, which are of a delicate rose colour with a yellow eye.

To have compact patches it must be gently bent or broken half through the stem, and either pegged down or covered with sand, placing a stone upon it to keep it in position. It will emit roots in about three weeks, and also throw out fresh growth immediately behind the bent portion; when these are of sufficient length the operation may be repeated till good patches are formed, and that with very little trouble. It well repays for a little extra attention, might easily be made one of the most conspicuous of alpine, and one plant is readily increased by cuttings. The points of the growth are generally selected for this purpose, but it may interest not a few of those desirous of increasing it to the fullest extent to know that the flower stems, if cut into lengths of 1½ or 2 inches, will root just as readily as the points, and soon form growth buds in the axils of the leaves. When of insufficient size to ensure safe removal they may be potted singly or transferred to the rockery to form small colonies. In or out of flower its silvery leaves, mingling with others of varied tints, always have a pleasing effect. In short, it is one of those charming Himalayan species without which no collection is complete.

**MYOSOTIS ALPESTRIS.**—Many and varied as are the rich and rare gems which come to us from far-off mountain regions, this, a true British alpine species, can vie with any alpine with which I am acquainted. It is truly a beauty, and in addition to other features which claim special notice for it, it is a true perennial. This Forget-me-not forms dense cushions some 2 inches high, which are covered when in flower with its large closely set cymes of brilliant deep blue fragrant blossoms with a yellow eye, which adds to the effect. It prefers in its native home narrow deep fissures of rock in sunny spots, but it is by no means difficult to manage; indeed, its cultural requirements are the



simplest, and those not having rock gardens can grow this little gem to perfection. Place it in rich loam with plenty of grit, in almost any position, and the chances are in its favour. I have also found that it can be grown in any fairly good garden soil. I have grown it in small nursery beds and on slightly raised borders quite as well as in any other position, and hundreds of plants raised from seed and transferred to the open beds far away from any rock garden have grown with the greatest luxuriance and have attained a height of 4 or 5 inches. At this height it is not less lovely than in its natural condition of its mountain home, and where it evidently delights to be jammed firmly between the rocks, struggling in vain to free itself.—J. H. E.

### ONIONS.

WE have just harvested our crop of autumn-sown Onions, and are reminded thereby that the time for preparing for next season's crop is drawing near. There is this difference between Onions sown in autumn and Onions sown in spring—that in the latter case the ground can hardly be too rich in nitrogenous plant food, while in the former case it may. About the 20th of August is a suitable date for sowing autumn Onions, and at that time we have Potato ground ready for re-filling. No preparation is required more than levelling slightly with a wooden rake, and firming the surface of the ground before and after sowing. It is generally preferred to sow in drills, but I am dubious as to any benefit in this case more than can be obtained by running a hoe down between the drills, and at the late season this can be done. I do not know that any benefit results to compensate the plants for the protection they reciprocally give to each other throughout the winter. After the seedlings are up the beds require to be hand-weeded, but if this is done in time it is not a large affair. Two of the best varieties to sow are, I think, Giant Rocca and Trebons. The Flat White Tripoli is, perhaps, earlier, but the others turn out a heavier crop.

The time to plant-out in spring is just when it is noticed that the plants are beginning to grow away. This occurs with us about the beginning of March. Autumn-sown Onions are nothing if not large, therefore we must prepare accordingly. The cheapest, and at the same time the best way to attain this end, is to put a layer of Mushroom dung 2 inches thick over the surface of the ground to be planted. Point this in loosely 3 inches in depth, draw drills 12 inches apart, and in these drills plant out the Onions, one at every 6 inches. After planting, if the soil is dry firm it well by treading. If in a wet condition wait until it becomes dry before doing this. The after culture is merely an occasional hoeing, and towards the end of April a slight dressing of sulphate of ammonia will cause the bulbs to swell to a great size. Any plants that shoot for seed are easily stopped by pinching-out the flowering stem as soon as it is noticed.

The plants left in the seed bed are useful for drawing for use in spring and early summer, and the "thick necks" among the transplanted stock should be used as required. If properly harvested autumn-sown Onions keep well into winter. To follow these spring-sown Onions require to be grown as hardy as possible. The ground is prepared in the same way as for those transplanted from the autumn beds. Lines are also drawn in the same way, and the seed sown thinly enough for the plants to grow without thinning. I do not care for the bulbs being large, but must have them well ripened. If they are thoroughly well dried in September and securely stored away in a cold dry room there is no fear of running short of a supply until the autumn-sown plants are in. Half a dozen small well-ripened bulbs can be grown on the same ground that one large bulb can, and the chances are all in favour of the small ones keeping. When so much thinned by the Onion maggot as to allow those that were left to grow to a large size, I have found it sometimes necessary to ripen up the bulbs in vineries before storing. Strong-growing plants can be checked considerably if the roots are slightly loosened with a fork. Like many other vegetables, the varieties of Onions are very numerous. If I were restricted to two kinds I think those likely to give most satisfaction would be James's Keeping and the old Blood Red.—B.

### PRUNING VERSUS NON-PRUNING APPLE TREES.

IN the spring I stated in this Journal that I purposed leaving my standard trees unpruned and to watch the result. I have sent you a few Apples, and especially a twig, to show the effect of not pruning, also a few details of the progress up to this time. When the blossom buds commenced swelling, and until they were set, the unpruned last summer shoots on the tree tops remained dormant. These then commenced to swell at the tip, many showing blossom. Now, of course, they are bearing fine fruits where I have not removed them by pruning, as I shall relate. The variety I have sent is a Pippin, but Stone Apple, Warner's King, and Ecklinville Seedling have all done the same, but the twigs or shoots are many times larger. During the drought these seemed to draw up the sap which had almost ceased running, and to monopolise it solely at the tip, which became

bushy at the expense of the lower part of the trees. Although all the fruit continued to swell, the lower foliage was badly infested with blight and vermin, and syringing had no effect until I flooded the roots with water. Ten days after the sap flowed freely, and the Apples which had been falling came off faster. Owing to the wind and the great length of the unpruned shoots much fine fruit was shaken down, so I resolved to prune at once. The matter was a puzzling one. To cut off the tips with the fruit on meant leaving no leaves to draw up the sap to the fruit on the older spurs lower down, and to leave them on looked as bad, or worse. So I resolved to cut to the lowest eye showing a little life about the 21st July, and now the foliage is doing well and the fruit swelling satisfactorily.

There has been quite a plague of blight and vermin this season, with many extreme variations in the weather. Several of my Apple and Plum trees lost nearly all their foliage, the fruit hanging in clusters, but after I drenched the roots with water all rapidly recovered and now look excellent. Apples are good; Plums, Gooseberries, and Currants heavy. The Pear trees which have been root-pruned were too forward in blooming, and although there was a very heavy set of fruit, the frost and hail destroyed nearly all, and the weevil is finishing the remainder.

The foregoing teaches me many lessons as follows. The twigs show how an Apple tree is made lank and bare of fruit and foliage buds by not being pruned to a fourth part at least of its summer growth. This, also, shows how young trees are spoiled and unable to carry much fruit. Closely pruned trees carry much finer fruit, are much less liable to be affected by the wind, and more certain in bearing. Early autumn and summer, as well as winter pruning, is the chief cause of disease, as the wood is often not then ripe, and the spring often shows this remarkably late spring pruning is best, as having some tendency to retard the blossom and to escape severe frosts. It appears also to keep the roots more healthy, and to afford much protection to the tree itself.—J. E. WAITING, *Grange-over-Sands*.

[The fruit received is good. We have seen many similar examples of naked spurless branches as the result of non-pruning.]

### AN AMATEUR'S GARDEN.

THE most healthful and enjoyable of occupations, whether for pleasure or profit, is gardening. Every week and year brings fresh recruits to the already great army of gardeners, especially amateurs who, as the term implies, cultivate their gardens as a source of pleasure. This rapidly increasing love for gardening has exercised a most wholesome influence morally and socially over the great masses of people who inhabit the suburbs of our great cities and large towns. We refer specially to the artisan class; but there is another and higher class, the enterprising business men of our great cities, who are developing a taste for gardening for higher reasons than the toiling masses just referred to. It is for the love of gardening in its noblest sense, the study of form and beauty in the vegetable kingdom, and the great enjoyment to be derived from cultivating Flora's and Pomona's richest treasures with their own skill.

It is not every lover of gardening who, commanding wealth, cares to undertake the sole cultivation of very choice Palms, Ferns, and Orchids without the assistance of a skilled gardener. Undoubtedly the greatest enjoyment is to be obtained by those who tend and care for their plants personally. That there are those who do this we can vouch for, as we had the pleasure a short time since of inspecting the model amateur's garden of F. N. Adkin, Esq., Tower House, Belmont Park, Lee. We had been promised a rich floral treat, and rich it certainly was on the date of our inspection. This garden is only of limited extent, but, although small, Mr. Adkin is certainly doing his best to render it a model one. Like most amateurs he makes one department of the garden a speciality, and in his case the speciality is stove plants. The glass houses are neatly built from Mr. Adkin's own designs, and are in every sense externally and internally models of perfection. This is not unduly lavished praise. There are four pigmy span-roof stoves built together in a block. Each of these little houses does not measure more than 8 feet long and 12 feet wide and about 8 feet high in the centre. In each of these houses the stages of wood slope from the sides to the path, which is 2 feet wide. The front edges of the stages are tastefully adorned with virgin cork, thus hiding the objectionable edges of the stages and the hot-water pipes around the house from view. In the first house were growing plants which for health, vigour, and culture would do ample credit to the most skilled gardener; beautifully grown plants of Palms, *Kentia Fosteriana rubra*, *Areca Verschaffelti*, *Calamus ciliaris*, Orchids, *Trichopilia tortilis* well grown and carrying fine flowers; a splendid plant of *Nepenthes Morganii* with fine pitchers. Marantas and other plants were quite at home and tastefully arranged. Ferns and *Nepenthes* were suspended in baskets from the roof, thus rendering this house most charming.

No. 2 house, similarly constructed, contained a splendid specimen of *Davallia Mooreana*, *Gymnogramma Laucheana* (Gold Fern), *Adiantum amabilis*, *Nothochlaena sinuata*, among Ferns; *Croton Lord Derby*, *Cytoceras reflexum*, *Phyllanthus nivosus*, and others among general plants. Nos. 3 and 4 are devoted to Ferns. These are special favourites with Mr. Adkin, and he certainly thoroughly understands their requirements in every way. Charming specimens of choice Ferns are to be seen here, such as *Microlepia hirsuta*, *Lomaria fluviatilis*, *Didymochlena truncatula*, *Davallia Mariesi cristata*, *Nephrolepis philippinensis*, and others too numerous to mention in these notes. Some are grown in baskets suspended from the roof, and are equally well grown.

In addition to the four stoves there are two greenhouses of much larger dimensions. These are span-roofs, and contain a central path and two side stages. Both houses were filled with choice flowering plants, such as



the best varieties of tuberous Begonias, Pelargoniums, Gladiolus Colvilli, Boronias, Gloxinias, Achimenes, and the tiny-leaved *Sibthorpia europæa variegata*, which makes a charming little pot plant. Arranged by the wall of the dwelling house was a healthy collection of Azaleas, Camellias, and other hardwooded plants. There is a trim little lawn with a border of choice hardy Ferns, comprising the best species of *Osmundas*, *Asplenium*, *Polystichums*, and others one side, and tastefully arranged flower beds. In one corner a little sub-tropical gardening is successfully attempted, as well as a few hardy plants. Underneath the shadow of some noble Elm trees is a sunk pit in which is flourishing a good collection of Filmy Ferns. Mr. Adkin simply had a rough hole excavated to the depth of 4 feet, in which a few stones were placed here and there. In the nooks and crannies he planted small plants of *Hymenophyllum dilatatum*, *Todea Wilkesiana*, and *superba*. These are now growing well. Plunged in large pans at the bottom are *Trichomanes radicans*, *Todea superba*, and *Hymenophyllum tunbridgense* all growing well and seeming quite at home. The cool moist atmosphere has caused hundreds of little Ferns of other genera to come up thickly. This little Fern cavern is covered with an ordinary frame light, and is shaded during bright sunshine. Great attention is paid to the proper amount of moisture being given to them. At the bottom of the garden are the tool sheds, which are covered with a glass roof. Shelves are fitted up near the glass, and these are filled with choice half-hardy Ferns.

It will thus be seen that every available space is turned to account. Mr. Adkin is justly proud of his plants; and, as I have previously stated, he employs no skilled gardener, but pots, trains, and waters his own plants. The only assistance he receives is a man occasionally to do the rough portions of the work. As Mr. Adkin's business demands his attention in town daily he has only the evening at his disposal. The tending and ministering to the wants of his plants is to him one of the greatest pleasures, and he is to be congratulated on his choice and well-grown plants in his interesting little houses and garden.—T. W. S.

### VINES AFTER FRUITING.

As a rule when Vines are starting into growth, forming fruit and swelling their crops, they have every attention required to assist the fruit in finishing, but when this is all cut many are apt to think they have done their part with them for the season, and give them no more attention. This is quite a mistake, as much of the attention which can be given to Vines after fruiting will benefit them more than all their first requirements, so far as their successful fruiting the following season is concerned.

Very early Vines may be quite yellow in the leaf. By this time the wood is brown and matured, but the roots are not at rest, and if they do not have sufficient water now they will shivel, and many will die. Inside roots especially are most liable to suffer in this way, and it is the worst thing which could happen to them. All Vines, no matter at what stage of growth they may be in, should be watered as liberally at the roots now and throughout the autumn as they were when the fruit and leaves were green. This is the only way to keep them robust and healthy in the highest degree.

So much for the roots; now for the leaves. When the interior of the vinery is humid, and everything green and growing, insects have hard work to gain a footing; but when the atmosphere is kept dry, when the fruit is ripening, if insects exist they are sure to spread, and very often Vines which showed no signs of being infested with insects at the beginning of the ripe fruit season will be found to be overrun with thrips or red spider before the fruit has been all cut, and these must be battled with after the Vines have fruited. Decayed leaves and superfluous shoots, such as the young points which form on the tops of the main shoots during the summer, should all be taken away, and then begin syringing. This must be done with vigour. Clean water applied through the engine is very serviceable, but paraffin oil and water is preferable. There is no insecticide to equal it, and a gallon or so will thoroughly cleanse several vineries. I use one wineglassful to one gallon of water. Syringe it on freely, and only allow it to remain on a few minutes. Its effect is instantaneous, and one good syringing of it will completely clear the vinery for the remainder of the season. Where no insects exist on the Vines it is an advantage to wash the leaves with clean water. Ventilation is not an important matter in the case of such Vines, as the best way to do is to open the lights back and front fully, and allow them to remain like this night and day.—A KITCHEN GARDENER.

### ST. BRUNO'S LILY.

THERE are few of the dwarf Liliaceous plants which will bear comparison with the charming old St. Bruno's Lily, *Anthericum liliastrum*, represented in the accompanying woodcut (fig. 25), and which also bears the generic synonyms of *Czackia* and *Paradisica*. In almost any position, with the exception of one that is very dry, this bulb will do fairly well; but it will thrive excellently in a situation with a west exposure, partially

damp subsoil, in a rich soil, free on the surface, by adding small pieces of brick or stone.

Although introduced as far back as 1629, shortly after which time it was a great favourite, its popularity has greatly diminished, owing probably to the superiority of many of our later introductions of *Liliums* although none of the white sorts can be used in the same way as the *Anthericum*, being too tall for a front position in mixed borders, a position in which the St. Bruno's Lily will be found to be very effective in the early spring months. For the rockery at that season it is almost without a rival, and although it may leave bare spaces in the summer months these may easily be covered by other trailing or overhanging plants without harming the bulbs.

It seldom exceeds a foot in height; and the many spikes, which bear a



Fig. 25.—*Anthericum liliastrum*.

profusion of spotless white flowers, about 2 inches long, bell-shaped, nearly double the size of the common *A. Liliago*, are extremely fragrant, and keep long when in a cut state. The leaves are narrow, grass-like, and are produced in small tufts. It is a native of Southern Europe. A variety of handsome appearance, named *A. liliastrum major*, sent out by nurserymen, is undoubtedly a very great acquisition, and ought to be a general garden favourite.—M. S.

### THOUGHTS ON CURRENT TOPICS.

I THOUGHT when I read the first article in the Journal last week that an "Old Gardener" was not a believer in the doctrine condensed into a line by Pope, that "whatever is is right." On the contrary, I was forced to the conclusion that the convictions of your correspondent are the exact opposite of that doctrine, and that one of the canons of his belief is—whatever is is wrong.



WE are wrong in letting weeds grow because we cannot help it. Wrong because we cut our Cauliflowers instead of pulling them, like pulling Apples or Gooseberries. Wrong in letting Lettuces run to seed, even if the cook wants succulent stems for preserving. Wrong in waiting for rain for planting, and wrong if we do not wait. Wrong if we raise too many plants, and wrong if we have none to plant when the ground is ready. I have never been able to determine how many wrongs make one right, and I thought it would not have been amiss if this "Old Gardener" had solved that old problem for the benefit of the old and young readers of this Journal.

BUT I must not forget that we are wrong in another thing—training gardeners. I thought when I read the list—a negative list it is true, of the delinquencies of the craft, that it was just a little curious that if there are so many untrained gardeners picking the plums from the pudding that it should be such a great "mistake" for the best men in the ranks to train others to follow in their footsteps, for it is presumably only the best who can take apprentices, and—is this the "rub" I wonder?—who get a premium with them.

WHILE I think there is a great deal of truth in the suggestion that gardeners are being manufactured too freely and in advance of the increasing wealth of the country, by which alone they can be supported, it is very doubtful if a less number were trained by skilled men in the best gardens that any real improvement would follow, for the reason that the door would be opened wider for those spurious gardeners who are ever seeking opportunities for elbowing themselves in, and the more there are of these the more the status of the craft will be lowered, and emoluments would almost inevitably fall in the same proportion. Let it not be supposed that I am animated by any personal motives in these observations, such as seeking an excuse for taking fees from young men. This is not so, for although I have helped to make a few gardeners, it has never been the custom in the establishments in which they served to charge any fees whatever.

I HAVE always thought that this is an employer's rather than a gardener's question. When gardeners are permitted to take fees with pupils, these fees are regarded as part of the gardener's salary: that is to say, he is paid so much less than if there were no fees, and we thus arrive at the somewhat strange fact that the young men in question really contribute what is to them a no small moiety towards the keeping of the gardens of the wealthy. I cannot help thinking, if this subject was well considered, that noblemen and gentlemen would make the (to them) small addition to their gardeners' wages that the apprentices contribute, and thus abolish fees altogether. It is certain, if this were done, it would be better for all, for the gardener would then be under no obligation to keep a man if he was not worthy, and had not great aptitude for his calling, and was not diligent in his work.

I HAVE been led into this subject by the thought that an "Old Gardener" approached a question that he was too diffident to examine fully; and here let me say in all seriousness, that although I have commented freely upon what I fancied was perceivable between the lines of the article under notice, I still thank your correspondent most cordially for a communication that may be studied with advantage by all.

UNDOUBTEDLY the next most noteworthy article in your last issue is that supplied by an "Employer" on gardeners exhibiting. I thought when I read that admirable paper that such a one had never come under my notice in the gardening press. If an "Employer's" reasoning is not sound it will be well if someone will point out the weakness of his arguments. On every point save one it appears to me that he is in an impregnable position, and the exceptional point is debateable—namely, that light cropping necessarily results in large produce. In instances innumerable the poorest of Grapes, Melons, and all other fruits have been seen where the crops were of the lightest; while, on the contrary, the very finest of examples have been part of decidedly heavy crops. The question is one of high culture solely; and the man who wins prizes in good competition simply shows that he is a good cultivator, and in nine cases out of ten his crops "at home" are decidedly heavier than those who have not fruit of anything like equal merit.

ANOTHER and highly important matter is introduced by "Employer"—namely, quality *versus* size as the primary merit. Quality, in my opinion, is by far the more important element;

and in the case of fruit, for example, the test of merit should be this—whether this large bunch of Grapes or huge Pine or Melon, but neither of them quite ripe and of inferior flavour, would be more acceptable in a high-class dessert than smaller examples perfect in finish and markedly superior, as tested by the palate. If I were judging I should act on the latter principle and let the critics have their fling.

IN the case of "specimen" plants, the best judges never overlook quality, and they would make a serious mistake if they did. They will not, nor ought not to hesitate in giving premier honours to specimens, say, 3 feet in diameter, if they are in superior condition as regards culture to others of twice the size. As "Employer" so tritely remarks, "size means generally age or room"—namely, that "the plant has lived several years and that the owner has a house large enough to hold it." Still, we occasionally see products honoured because they are large and little else, but judges do not honour themselves by such verdicts.

THEN the greed of exhibitors is referred to in the same significant article. It is this "greed" that has caused many owners of gardens to prohibit showing altogether. The immoderation of gardeners in scraping together everything they could—making the whole routine of practice subservient to the show day, practically clearing the garden with the object of getting every possible prize in every possible class, showing neither consideration towards employers nor mercy towards competitors with humbler means—it is this kind of showing that sooner or later results in no showing at all from the gardens in which such extreme and unthoughtful practices have been indulged in; and also induces—and who can wonder at it?—the owners of other gardens to take their stand against exhibiting. Other thoughts arise in connection with this important subject, but they must at present be suppressed.

"WE are all too much afraid of cutting and pruning trees in summer," writes a gardener on page 114. I think not quite "all" are afraid of the practice, but the vast majority of persons are. Time is showing, as it must show, that the more of summer and the less of winter pruning is done the more fruitful are the trees, whatever they are, and in whatever form grown. It cannot be too widely known that branches may be removed from fruit trees in summer, and shoots thinned out to any required extent quite as safely as in the winter. Now is the time for pruning to be done effectively. There should be no delay. At no other time can such an accurate judgment be formed as to the proper distances for securing the growths. Let them be so disposed that the sun and air can act as directly as possible on the foliage, and if fruit buds do not follow there will be "something wrong at the roots."

"A. J. B." wishes to know the opinions of correspondents generally, and that of Mr. Iggulden particularly, relative to the merits of Muscat Troveren and the two Black Muscat Grapes named on page 114. As to the two blacks, they are so much alike in my eyes that I cannot tell "t'other from which," and if I taste them I am in the same difficulty. I have, however, never grown them side by side, because I never thought it worth while having more than one rod of this Grape under whatever name it was offered. As to the Muscat Troveren, I think it is a very good Frontignan Grape. I have never seen it win a prize in competition with Muscat of Alexandria, and I do not think I ever shall, unless the latter is very bad and the former better than I have yet seen it. The Muscat Troveren is rich in flavour and large for a Frontignan, but it bears no comparison in size of bunch and berry, nor of productiveness, with the best of all white Grapes, Muscat of Alexandria.

MR. BURTON evidently grows splendid Rose leaves, but the condition of his bushes is due, I think, to something besides early pruning. The thinning-out of the wood of Roses in autumn, cutting away as much as the weak and the old and leaving the strong and young shoots, is the best of all methods of getting fine foliage, and if the pruning is not too close, of fine blooms too; but if very strong growths are shortened severely there will be fine leaves only. Your correspondent thinks the "middle or end of March quite late enough for pruning even so far north" as Westmoreland. As to this, I am of opinion that the danger of early pruning is greater in the south than in the north, but the end of March is not very early for pruning anywhere.

MR. MURPHY advances what he calls his "last word" on A. K. Williams Rose. I hope it is not his last word. I think



he will find after he has had a few more plants from nurseries that this Rose is not a good grower. I have seen it in twenty gardens this year—in some cases dead, and in all regarded as difficult to establish; but it is wonderful what grand blooms even small plants will produce. I hope both your correspondent and "D., Deal," may be right in their opinions, but at present they must allow me to think that I attach a little more weight to the practice of "One who Knows" than to either of them, especially as a grower of at least 50,000 Roses told me that nine-tenths of the blooms exhibited of A. K. Williams were cut from plants that had not been disturbed since the buds were inserted.

I MUST have a "thought" on seed Potatoes. "B." attaches far more importance to changing seed than I do. The finest crop of Ashtops I have seen this year, and with little doubt one of the finest crops ever grown, was from "seed" raised by the cultivator in the same garden for more than thirty years. With care in selection, preservation, and preparation for planting, I think there is no degeneration—at least, in the Ashtop varieties. I have bought seed of these for a dozen years from a dozen different places, and not in one instance have the resulting crops been in favour of the purchased seed. With later sorts the case has been different, and Scotch-grown seed has usually proved the best; but this only means that southern-grown and earlier-ripened tubers were more forward, and the early growths displaced before planting, as it is not easy to retard several sicks, while there is little or no difficulty in having a bushel or two of kidneys just as we wish to see them.

DR. PATERSON'S observation relative to the proximity of the Hen-and-Chickens Marigold, and Hen-and-Chickens Daisy, and the possibility of the latter influencing the former, will possibly have provoked a smile of incredulity on the part of some matter-of-fact individual who is a non-believer in occult "influences" of this kind. There may have been nothing whatever in the doctor's supposition, but unless I am misinformed there is a sort of sympathy among plants that has been turned to practical account in the establishment of new varieties—these having been the result of simply intermixing the growths, of evergreens for instance, which has predisposed to sporting, and the sports have been fixed by propagation. This I am informed has been done; and my informant being the person who asserts he has done it, I am not prepared to laugh in derision at a suggestion that opens up a field of thought on a most interesting if obscure subject. I wonder if anyone else thinks this little matter worth thinking about.

IN the illustration on page 123 attention is directed to a very distinct and beautiful Primula. Grown as represented *Primula sikkimensis* must have a charming appearance. I have never so seen it, but have proved its value for pots for conservatory decoration. As its adaptability for that purpose does not seem to be mentioned in the excellent article on the page quoted, I thought the omission worth noting in the interest of those who wish to have their greenhouses and conservatories as variedly attractive as possible during the late spring months.

My last thought this week is that Mr. Barron is as lucky as he must be worthy. It falls to the lot of few men to have two gold watches presented to them within twelve months, and I think if two were presented to me (what a wild thought!) I should endeavour to keep at least one of them. Mr. Barron will make a similar endeavour no doubt, and let us hope he will succeed, or giving gold watches will go out of fashion, and I shall have to be content with my old silver "ticker."—A THINKER.

### DWARF CHRYSANTHEMUMS.

WHERE dwarf plants are in demand for decoration in small pots, and effective arrangements are required either in the conservatory or dwelling house, it is necessary to grow plants specially, and as suitable for the purpose as possible. However dwarf and well grown Chrysanthemums may be in from 6 to 10-inch pots, they cannot always be employed amongst other small dwarf-flowering or foliage plants to present a light and effective appearance. When propagated early they often grow too large for many positions, and instead of producing a pleasing effect would be unsightly. For standing amongst and rising above groups of Ferns, Primulas, Cyclamens, Zonal Pelargoniums, or Hyacinths arranged tastefully together nothing is more serviceable than a good batch of Chrysanthemums of the large free-flowering types rooted at once in 4-inch pots, and not shifted into larger afterwards.

Strong cuttings should be selected of such varieties as Elaine,

James Salter, Early Red Dragon, Parasol, Mrs. Dixon, Mrs. G. Rundle, Beverley, Empress of India, Queen of England, and many others, including late-flowering varieties, and inserted in the centre of the pot in which they are intended to flower. Cuttings root freely at this season in cold frames if they are kept close and well shaded from strong sun until rooted; they should then be hardened and grown outside the same as those propagated earlier in the season. All side shoots must be removed as they are produced, and the plants finally disbudded to one, two, or three flowers. If one is taken the crown or centre bud may be selected; if more, this must be removed, and the plants will branch into three shoots, upon which terminal buds will be produced. On these small plants we generally have only one good bloom, and never more than two. It is surprising how beautiful these are when freely arranged amongst other plants, for they will not exceed 18 inches in height.

That beautiful variety, *Sœur Melanie*, is grand for this purpose, and single plants can be grown well in 3-inch pots. This is allowed to grow to a single stem the same as the others until it branches the last time, when the whole of the shoots produced are left and two or three buds towards the end of each shoot. The last-named variety and the majority of free-flowering Pompons make most lovely decorative plants if inserted thickly together now in 4, 5, and 6-inch pots, and then grown on after they are rooted without stopping, pinching, or even disbudding. Plants rooted now and grown without staking or tying are more useful and effective in many gardens than those raised months earlier. Such plants as have been described can be arranged with effect on the side stages of small houses or conservatories in conjunction with Primulas and other dwarf plants, while those grown in larger pots and staked would be out of place unless the stage to be filled is very wide, and the pot and lower part of the plant where the stakes are visible can be entirely hid from view by other plants. When arrangements have to be low and not on the banking system early-propagated plants are almost useless for the purpose; however, the stems may be bent and twisted for the purpose of keeping them dwarf and low. For effective arrangements twisted formal specimens must be ignored, for they cannot be used without making a break amongst other small flowering plants. The late striking of Chrysanthemums for purposes of decoration is not practised so much as it deserves to be, for the most lovely little natural-looking specimens can be produced that can be used in almost any position and enable the cultivator to make telling arrangements that it would be impossible to make with the plants generally seen and grown for the purpose.—SCIENTIA.

### MELON PLANTS DECAYING.

MR. BARDNEY, like myself, seems to have a fair share of diseases and other evils to contend with in his gardening career. It is, however, no consolation to know this, but it is more satisfactory to find that he is in a position to point out the cause of the sudden decay of the Melon plants. From the first I was under the impression that the sudden collapse of part or the whole of a plant was due to the excess of sap over and above what was needed to meet the demands of the plant during dull weather. In clear sunny weather there was nothing the matter, but directly we experienced dull sunless weather the evaporation was suddenly materially checked, and then followed the collapse. In two different gardens beside our own, where I saw these failures, the glass had been rather heavily shaded with limewash during the prevalence of very hot weather, and in our case the remedy was the removal of the greater portion of the shading, the increase of fire heat, and the admittance of more air or less water given at the roots. This lessened the supply of sap and increased evaporation, with the result of saving some of the plants that had already lost several healthy leaves in the peculiarly strange manner before described. Now we are having clear weather no difficulty is experienced, the disease being very different from the common canker.—W. I.

### ROSES—THE AFTERMATH.

I PRUNED, as last year, about the first days of March—feeling perhaps more uncertain than usual as to the results. It will be remembered there was much correspondence in the Journal, and that correspondence was not encouraging. On the 15th of May I went out, and was obliged to remain away from my garden quite two months. The first Rose bloom was nearly over on my return. The gardens I had visited, chiefly in the west of England, and the Rose shows I had attended, exhibited, as a whole, fewer collections and specimens of merit than I had observed for years, and the general impression appeared to be that the Rose year had not been so good as usual. A long spell of east wind prevailed everywhere, and when warmth came there was not moisture enough to balance the drought; yet, spite of the intense sunshine, dark Roses seemed less scorched than usual.

But the Rose season of 1884 is not yet over, and I believe the best has yet to come. At last, towards the end of July, dull grey skies and torrents of rain brought down the temperature and refreshed the parched ground; indeed, so thick and almost chill was the atmosphere, that I began to fear mildew and consequent debility. But soon again the sun reappeared, and the magnificent weather of the last eight or ten days has had mar-



vellous effect. Rose shoots are thrown up with remarkable vigour; some of the trees are already full of bud, and present the most even, healthful, and beautiful appearance, while the dry-weather Roses, both dark and light, such as Lord Beaconsfield, Pierre Notting, Madame Lacharme, and others, are happy and fragrant exceedingly.

Let us congratulate ourselves on the condition of our Roses if the heat is not too trying for them. Let us hope that delicate constitutions may be set up, and much good wood ripened early in preparation for the next Rose season we trust to see when the coming aftermath, and the, happily yet distant, winter are over.—A. M. B.



**EXTRAORDINARY HEAT.**—According to the meteorological return the shade temperature last Monday (August 11th) was as high as 93° at Hillington, in Norfolk, 92° in London, and 87° at York. At half-past eight on Monday evening the thermometer in London registered 85°, and at one o'clock on Tuesday morning 76°. Messrs. Negretti & Zambra state that at the Crystal Palace a record of 97½° was taken—the highest, for very many years. Mr. Abbey states the thermometer registered 95° in the shade on the 8th and 93° on the 9th at Paxton Park, St. Neots, Huntingdonshire; and in Messrs. Veitch's Nursery at Chelsea we are informed the sun temperature was 131° on the 11th inst. On Tuesday the shade temperature in London was 82°. Yesterday (Wednesday) the weather was cooler.

— **THE PUTNEY AND DISTRICT CHRYSANTHEMUM SOCIETY** announce that their Exhibition this year will take place on November 11th in the Assembly Rooms, Putney. The usual prizes are offered, including the silver cup for the best collection of Chrysanthemums arranged for effect.

— **CAMPANULA VIDALI.**—In a few gardens this plant is now flowering, but though very distinct in habit and form of flowers, the colour of the latter, a dull white, is not quite pleasing. Possibly some improvement could be effected by crossing it with some blue-flowered species; and though there might be a little difficulty in accomplishing this it would be worth the trial, as a blue-flowered *C. Vidali* would be a decided acquisition.

— **EXHIBITING.**—A correspondent writes:—"I should like to thank Mr. Iggulden, and also "An Employer," for their good articles on exhibiting. Though I do not think it will induce my employer to exhibit, the articles must do good to many of your readers."

— **WELLINGTONIA GIGANTEA.**—Among the remarkable specimens on view at the International Forestry Exhibition in Edinburgh is a section—10 feet by 14 in diameter—of one of the world-famous Mammoth Trees of California, within the trunk of which it is said a large picnic party could be accommodated. Arboriculturists hold that the specimen shown in Edinburgh is over six thousand years old.

— **THE JERSEY POTATO CROP.**—This is likely to turn out an unusually good one this season. Although the earliest crop did not yield over-well, the later ones have made amends, and the *Jersey Gardener* estimates that the total export will probably exceed 45,000 tons, and realise over £300,000.

— **MESSRS. BATES, HENDY, & CO., 37, Walbrook,** have forwarded us a copy of the "MONTHLY CIRCULAR OF GARDENING FOR INDIA," which is issued by the Indian Seed Stores at Ranikhet. It contains a calendar of garden operations on the plains and hills, a letter from a London correspondent, and notes on the Early Amber Sugar Cane and the Doura. It will no doubt be useful to the persons for whom it is intended.

— **CLEMATISES FOR ARBOURS.**—"J. R." writes:—"We have had, and still have, a beautiful display of Clematises this year, though our garden, which is exposed to some of the worst of London smoke—that from the frequently passing engines in a railway close by. The plants are trained over a porch of a summer house, not rigidly and formally, but naturally, and we have a succession of flowers from early spring until autumn. First, the charming white Clematis indivisa produces its clusters of pure white flowers in abundance; this is followed by

*C. Jackmanni* varieties, which are still lovely, loaded with wreaths of rich purple flowers; and now the snowy cloud-like *C. Flammula* is expanding its diminutive but pretty white blooms in profusion. The beauty of these plants cannot be exaggerated, and their value for suburban gardens is inestimable."

— **LYTHRUM GRÆFFERI IN POTS.**—This graceful little plant is admirably adapted for culture in pots, and in a greenhouse or conservatory it has a beautiful effect if suspended from the roof. In this position the long slender shoots droop naturally, and bear their small but bright rosy-purple flowers freely and continuously. Any ordinary soil suits it, and the best method of treatment is to increase it by cuttings every season, placing four or five in a small 60-sized pot, and transferring these together into a 48-size. The leaves are narrow and curiously reflexed, so that they appear to lie nearly flat on the branches. Fresh growths are constantly springing from the root, so that there is a cluster of young flowering shoots in the centre of the pot, in addition to the older ones trailing over the side.

— **THE *Journal des Roses* for July and August** gives plates of *ROSES MADAME PROSPER LAUGIER* and *RED DRAGON*. The first, it is said, was obtained from seed by M. Eugène Verdier in 1869, first flowered in 1872, and was sent out in the autumn of 1875 at the same time as *Abel Carrière*. The plate fairly represents its colour and form. The other is well known as one of Messrs. W. Paul & Son's productions, a seedling from Charles Lefebvre, remarkable for its rich colour and handsome globular form.

— "R. P. B." writes respecting **EAST LOTHIAN STOCKS**:—" 'Thinker' may rest assured that these Stocks can be had in flower in July in the same year as sown. I have had them so repeatedly. The seed must be sown in the beginning of February, and there is no doubt as to their flowering in July. They are later this year, having been later in sowing, but the plants are now coming into flower. At the same time it is not unusual to sow in August and keep the plants cool throughout the winter. Where seed-saving is kept in view autumn sowing is much the better plan, though I do not know that there is much to be gained as regards a fine display of flowers in autumn."

— **PRESENTATION TO MR. J. AUSTEN.**—On Tuesday the 5th inst., Mr. J. Austen, who is leaving Ashton Court Gardens, Bristol, for Witley Court, Stourport, was entertained at a farewell dinner in the Montague Hotel, Kingsdown, and presented with a handsome sideboard, and an album containing the portraits of sixty subscribers. There was a large attendance, Mr. G. Webley, Secretary of the Bristol Chrysanthemum Society, presiding. An address was inserted in the album, the substance of which follows:—"In making this presentation we are actuated by feelings of the deepest regard, and with a due appreciation of the talent displayed by you in the many departments of your profession during the eleven years that you have resided in our midst. We offer you our most hearty congratulations upon your succeeding to so important an appointment as gardener to the Earl of Dudley, believing that it will afford you an extended field for the further development of those abilities which have hitherto characterised your career; at the same time we cannot refrain from expressing our sincere regret at parting from so genial and valued a friend." The Committee, who were appointed to obtain subscriptions and arrange for the presentation, consisted of Messrs. G. Webley (Chairman), J. H. Vallance (Secretary), John Miles, E. F. Woodward, H. K. Ward, W. H. Bannister, E. Brown, J. A. Walker, H. King, I. Bush, W. A. Garaway, F. I. Parker, and V. Down.

— **DR. PATERSON** sends us the following extract from a letter he has received from Mr. F. W. Burbidge in reference to the **HEN-AND-CHICKENS MARIGOLD** figured last week in this Journal:—"May I venture to ask you for a seed or two of your Hen-and-chicken Marigold? It is a most curious thing, and although some may smile at your remark as to its growing near the Hen-and-chicken Daisy, no wise and thoughtful person will do so. I have read of plants becoming variegated when growing near variegated individuals of another kind; and only the other day I was with a farmer who drops a few Swedish Turnip seeds in his drills or rows of Mangold Wurtzels, and he always takes the prize at our show with the Turnips so grown, although he has acres of Turnips cultivated by themselves in the usual way, but they never grow so fine as those among the Mangolds. Verily there are 'many things 'twixt heaven and earth not dreamt of in our philosophy.'"

— **MANGANESE IN PLANTS.**—Recent researches by M. Maumene



looking for the visitors that did not come and the rain that did; and all this with their faces gradually getting longer and longer and whiter and whiter, until you would have thought that they would have been glad to sink into the earth out of sight, which, I understand, was just their feeling.

Thursday the 10th was a little better, but the evening, when the Nottingham people would have flocked in in large numbers, was wet. There was not £30 taken in the two days, and £150 to £200 was wanted to pay prizes and expenses. A council of ways and means was called by the officers, the Mayor (the President of the year), a few gentlemen friends of the Society, and the exhibitors; and on the representations of the Secretaries as to the state of things it was decided that, subject to the kind permission of Alderman Lambert, the owner of Mapperley Park, to grant the use of the park for the two following days of the week, the Show should be continued open at popular prices up to Saturday evening, and the majority of the exhibitors very willingly agreed. Some of them who came a long distance could not do so, but they removed what they had as quietly as possible, and the places emptied were filled by Nottingham gentlemen sending from their gardens sufficient stuff to keep a good show up to the Saturday evening. But even with these two added days the loss the Society suffers is heavy and crushing.

The Hon. Secretaries have published a circular setting forth the condition of things, which, if you could find room for, would possibly be a means of bringing their case into the notice of some who could help substantially. I enclose a copy.

"We beg respectfully to call your attention to your subscription to the above Society which still remains unpaid.

"The deplorable failure through bad weather of the recent Exhibition in Mapperley Park compel the Committee to apply for all outstanding subscriptions, and at the same time ask you if possible to increase it. Some idea of the Society's financial position may be drawn from the fact that while the expenses of the Show, including prize money, amounted to £300, the total receipts at the gates were only £63. Trusting this appeal will meet with a hearty response,

"We remain,

"Yours faithfully,

"JAMES DON, 20, Chapel Bar,

"E. STEWARD, 2, Exchange Row, } Hon. Secs."

The Show itself was a splendid one, infinitely superior to the one of last year, and that was considered by good judges to be as good a show as could be seen in the provinces. The groups of plants set up for effect were the admiration of everybody. These are the only things that I shall specially mention; it is too late in the day now to particularise. Let us hope that the Society may have better luck next year if they "go in" for a show, though shows are not what the Society was established for—the idea of the promoters being more educational than exhibitional—shows, especially large shows, being an outgrowth or excrescence which some of the members deplore.

My second note is the Notts fruit crop. Well, the Notts fruit crop is nowhere this summer. Orchards are blank, or next to it. Apples very few, and those of the constant bearers, such as Keswick Codlins, Duchess of Oldenburgs, or Russian and Greenings. Pears scarcely any, and those of the common varieties. Plums none, Damsons none. No Walnuts, a fair crop of Cobnuts, but not many Filberts. Plenty of Strawberries, though they all ripened at once, nearly. Pretty fair of Raspberries, an abundance of Gooseberries (with us, we lie high; in the valleys not so many). The same of Currants, Black, White, and Red. Apricots a good crop. Peaches a few. All these keep up our supplies of preserves, but they do not make up to us the loss of the Apple crop. No other fruit can make that up to us; and though we can buy in the market cases of foreign Apples fairly cheap, they do not make up to us the loss of our own supply. A gardener can face a cook with a bolder spirit when he has a good Apple crop than he can when his supply is small. At least that is my experience, and I am getting an old hand now. It is, however, time that I wrote the usual—H., Notts.

## TREES AT THE CAPE.

(Continued from page 130.)

### EUCALYPTUS.

AMONGST the introduced timber trees of Cape Colony, after the European Pines and Oak, it will be proper to speak of the Blue Gum of Australia (*Eucalyptus globulus*). The Blue Gum is more widely planted in South Africa than any other tree, but it rarely shows self-grown seedlings, and consequently has not the forestal value of the Oak and the Pines. I shall not easily forget my introduction to the Blue Gum, in its own hemisphere and latitude. It was my first morning on shore near Cape Town. People with their English habits were in bed or at breakfast, and I had the fresh morning air to myself. There was a lightness and freshness about this air wonderfully recalling the Nilgiris, and this illusion was complete when I passed out of the perfumed Pine woods to where some giant Blue Gums stretched their limbs across the road, and filled the air with their strong wholesome scent. All along the coast of South Africa, from above Cape Town to Natal, the Blue Gum grows with facility and rapidity—nearly the same powerful assimilator of carbon that it is on the Nilgiris. Ten tons has been mentioned as the acre-increment in Natal. Approaching the colder western coast this figure probably diminishes, but there are no plantations sufficiently large and regular on the coast to afford any reliable figures of growth.

In the drier climate of the interior the Blue Gum succeeds best when there is subsoil moisture. It is extensively planted round farms everywhere, and is said to have modified the mild malarial fever which is prevalent in some portions of the Transvaal, an elevated plateau (about 4000 feet elevation) which extends northwards into the tropics.

On the same plateau, at the large English town of Kimberley (the diamond fields) where a bad form of malarial fever is prevalent in summer, and where firewood sells at fancy prices, Eucalypts have been planted just sufficiently to show that they will grow well there. There is now a plentiful supply of water at Kimberley from the Orange river, and altogether the best prospects of successful Eucalypt planting. The only portion of Cape Colony where the Blue Gum appears not to succeed is on the last range of high mountains rising to the plateaux of the interior. On these mountains, especially if the aspect is southerly, the snows and frosts of winter are too severe for the Blue Gum. In the semi-desert country to the north-west, where the rainfall ranges from 10 to 15 inches down to only a few scanty uncertain showers, Eucalypts can naturally not be grown without irrigation. The Blue Gum and other Eucalypts have been most extensively planted in the neighbourhood of Cape Town. In certain situations they suffer there from wind, and the wood, as firewood, has a bad reputation for being twisted in the grain and difficult to split. Grown in close plantations these objections would probably disappear.

Speaking generally, the Blue Gum appears to grow less rapidly in Cape Colony than on the Nilgiris, and there are other Eucalypts which rival, or even surpass it, in rapidity and robustness of growth. In appearance, the average Blue Gum on the southern seaboard of Africa is about equal to those I saw in Italy, both being somewhat inferior to the Nilgiri tree.

With regard to the natural reproduction of the Blue Gum, coppice shoots are not so plentiful nor so strong as I remember them a year ago on the Nilgiris; but, on the other hand, self-sown seedlings occur in certain situations in Cape Colony, while on the Nilgiris it is a notable fact that they are practically non-existent. Probably both the lessened power of coppicing, and the occurrence to some extent of self-sown seedlings, is due to the fact that the Cape climate is drier than that of the Nilgiris; the Cape climate is warmer as regards air temperature than the Nilgiris, but as regards the sun quite extra-tropical, being in latitude 34° as against the 11° of the Nilgiris. The mean temperature of Cape Town is 61.25°, and the rainfall 24 inches. On the cool side of the Table Mountain range, where the Pines, Oaks, and Blue Gums attain such fine dimensions, the rainfall is greater and the temperature slightly less. On the Nilgiris, where the Blue Gums grow best, the mean temperature is about 56°, and the rainfall 45 inches. It is remarkable that the best show of self-sown Blue Gums in Cape Colony is believed to be at a farm some distance from the south-west coast, where the rainfall is less than in Cape Town. Here, in this one locality, the young Blue Gums are described as coming up like grass: the situation is dry and open, and the soil somewhat stony. Near Cape Town, self-grown Blue Gums are observable, but they are not common. All over Cape Colony the Blue Gum produces fertile seed, and no other is used in nurseries; while, on the Nilgiris, it is necessary to use Australian seed on account of the bad quality of indigenous seed.

Of other Eucalypts only one I believe has been at all extensively planted. This was at first believed to be *Eucalyptus Mahagoni*, but was subsequently identified as *Eucalyptus robusta*. In Southern India I found it to succeed at 2000 feet lower elevation than *Eucalyptus globulus*, and in Cape Colony it appears to stand drought better than *Eucalyptus globulus*. Mr. Lister is very sanguine of its successful and easy planting. I have rarely witnessed a more rapid and vigorous growth than that shown by this tree in the town avenues and in the Government plantation at Worcester. It is now being tried in the east of the Colony. Its compact form, and (for a Gum tree) dense foliage, render it fit for avenue planting.

Of other Eucalypts, a great variety has been planted, by twos and threes, in different parts of the Colony. Very many of these I recognise as having been more or less successfully planted in Mysore.

The valuable Yarrah has been identified by Mr. Lister, growing near Cape Town, and yielding good seed. The sweetly scented *Eucalyptus citriodora*, which succeeds as a garden tree in Mysore, grows well in Cape Colony, but was found to be sensitive to drought in the Botanic Gardens at Port Elizabeth on the southern coast.—(*The Indian Forester*.)

(To be continued.)

## BISHOP AUCKLAND FLOWER SHOW.

THIS old favourite northern Show has been again resuscitated after five years without any attempt being made to hold an exhibition. The three years prior to that it rained on each exhibition day continuously. At the last exhi-



bition of the Society the day was changed from Friday to Wednesday with the same results. It has always been a one-day show. As much as a thousand pounds have been taken at the gates, the pitmen coming in great quantities in all the available cheap trains from a distance. Right royal Queen's weather prevailed on Friday last, and the old historic town of Bishop Auckland was seen at its brightest. The Show is held in Bishop Auckland Park, by kind permission of the Bishop of Durham, Dr. Lightfoot. A more picturesque and suitable place it would not be easy to find than where the Society had pitched their exhibition. It was a little east of the Bishop's palace, where a gentle stream meanders in the vale, on the right of which, on an eminence, is the palatial residence of his lordship.

The Show was arranged in three tents some distance from each other, and we think the Society would do better in having the exhibits all in one large pavilion; they could be better arranged and more readily accessible to the public. The receipts, we understand, were about £800; we hope, therefore the Society will be restored to its former position, when such veteran competitors as Mr. Baines were accustomed to exhibit here.

**PLANTS.**—For six flowering plants, Mr. E. H. Letts, gardener to the Earl of Zetland, Aske Hall, was first with a good *Stephanotis floribunda*, *Anthurium Schertzerianum*, *Phenocoma prolifera* Barnesi, and *Ixoras*. Mr. Johnson, Elmridge, was second; *Erica Shannoni*, *Ixora Williamsi*, and *Clerodendron Balfourianum* were handsome. Mr. Noble, gardener, to Theo. Fry, Esq., Woodside, Darlington, was third. For six exotic Ferns Mr. Johnson was first with good specimens of *Davallia Mooreana*, *Gleichenia rupestris*, *Dicksonia antarctica*, *Adiantum farleyense*, *Gleichenia Speluncæ*. Mr. J. C. Ford was second, and Mr. Noble third. The groups of miscellaneous plants was one of the most striking and pleasing features of the Show. It is the first time the Society have offered prizes for such. The spirited competition must have been gratifying to the Society. Mr. Noble was here first again with a tasteful arrangement of flowering plants, Palms, all encircled with groups of *Adiantum* Ferns. Mr. Johnston was second. For six handsome foliage plants Mr. E. H. Letts was first with plants similar to those exhibited by him at Newcastle.

For nine *Gladioli* spikes Mr. A. Brown, Whitburn, was first with good blooms of *Eglantine*, *Mons. Legrove*, *Penelope*, *Admiral Brongniart*, and *Amathea*. Messrs. Harkness & Sons, Bedale, Yorkshire, second with good blooms of *Ondine*, *Orpheus*, *Meyerbeer*, &c. For a beautiful bridal bouquet Mr. Rutherford, Durham, was awarded first prize.

**CUT FLOWERS.**—For forty Dahlias Messrs. Harkness received a special prize, which were good so early in the season. Mr. Geo. Finlay, gardener to Mrs. Maynard, East Layton, Darlington, showed some excellent African Marigolds, a seedling *Hollyhock*, and was highly commended.

For three Balsams Mr. James Moore, Auckland, was awarded first prize. His plants were 4 feet high and 2 feet through; they were splendid examples of the culture and skill, and highly creditable to the grower, whose occupation is that of a miner. Mr. Thos. Pearson, Old Shildon, was a creditable second. For forty-eight Roses, single blooms, E. R. Whitwell, Esq., Barton Hall, was first with good blooms. Messrs. Harkness & Son were first for thirty-six Roses, and Mr. Frettingham, Nottingham, second. For twenty-four Mr. E. R. Whitwell was again first; and for twelve Roses, dissimilar, Messrs. Harkness were first. In the B class Mr. Finlay won the first prize for eighteen blooms, and first for twelve dissimilar blooms.

**FRUIT.**—For a collection of fruit, eight dishes, Mr. W. Jenkins, Aldin Grange, Durham, was first with Black Hamburg Grapes, Nectarines, Peaches, Strawberries, and Gooseberries. These were all creditable dishes. The same exhibitor was first for two bunches of Black Grapes; Mr. Westcott, Raby Castle, being first for six bunches of Grapes. The same exhibitor was first for a Queen Pine, Peaches, and Nectarines.

The amateurs' show was highly creditable, and specially may be mentioned the stove plants of Mr. James Moore, Eldon Lane. Vegetables were also shown of first-rate merit.

The Show was in every department creditable to the promoters. There seems but little doubt that this fine old Exhibition will now be restored to its former position by an energetic Committee and the indefatigable Secretary, Mr. R. W. Thompson.

### BRAVOA GEMINIFLORA.

THE *Bravoa geminiflora* is a half-hardy plant, producing a tunicated bulb, about the size of a moderately large Hyacinth root, but more elongated. From this bulb proceed three to four pointed leaves, 18 to 20 inches or more long, and from 1½ to 2 inches broad; they are keeled at the back, and usually quite erect. The scape or flower-stem springs directly from the bulb, and is not uncommonly from 3 to 4 feet high, of a round tapering form, and bearing several pointed half-sheathing bracts arranged alternately at distances of 5 or 6 inches from each other.

The raceme of flowers terminates the stem, and consists of about sixteen pairs of blossoms, at the base of each of which is a small trifid bract; in the early stages of their growth they are quite erect, and pressed close to the scape, but as they expand the tube of the flower becomes gradually curved outwards, until at length its mouth points downwards. Each flower is about 1 inch or 1¼ inch long, of a cylindrical form, and divided at its mouth into six short rounded lobes, which, when the flower is fully developed, are slightly spreading; at this period their tint is a delicate salmon or flesh colour, tinged with green at the base, where the perianth coheres with the seed-vessel.

The *Bravoa* may be cultivated either as a window bulb or in the open border, where it succeeds perfectly in a warm aspect and suitable soil. The only objection to its cultivation in the window is its liability to become "drawn" from deficiency of light and air; but, in all other points, no plant can be more manageable. It should be potted in a good friable loam, with which a little silver sand should be mingled, unless the soil contains naturally a fair proportion of silicious matter. This is necessary to ensure the requisite porosity; but, unless a considerable proportion of good loam is also present, the growth of the plant will be weak. The bulb should be planted with its neck level with the surface of the soil, in a 4 or 5-inch pot, which will be found amply sufficient, except

for the largest bulbs. During the winter months, when the plant is dormant, the soil may be kept nearly dry, but when in activity it requires to be freely watered. It usually commences its growth about the end of April or beginning of May; and, in a warm window, will make rapid progress, producing its flowers about the end of July. After the blossoms have faded the pot should be placed out of doors in a sunny situation to ripen the bulb, and when the foliage has decayed it may be returned to its winter quarters, which may be any airy place inaccessible to frost.

In the open ground its treatment may be inferred from what we have just stated. If planted out in April, while dormant, it should be covered with a hand-glass to protect it from spring frosts; if kept on the window or in a cold frame until the middle of May it may then be plunged into the borders without this precaution. In this situation its height will be less than under glass, and the colour of the flowers deepen to red. It is easily increased by offsets, which may be separated every second or third



Fig. 27.—*Bravoa geminiflora*.

year, and also by seeds, which may be ripened in the greenhouse or window if the plant is grown on after flowering.

The *Bravoa geminiflora* is a native of Mexico. Its name was conferred in honour of the Mexican botanist, Bravo.—W. T.

### FROME FLOWER SHOW.

THIS, the first exhibition of plants, flowers, fruit, and vegetables, was held on August 4th, and on the whole may fairly be termed a great success. It was at first intended that it should be a cottagers' show only, but the leading inhabitants of the district having subscribed most liberally funds were available for the extension of the prize schedule, and a fair number of classes were provided for gentlemen's gardeners. This, though late in being decided upon, was the means of bringing together a fairly attractive display and saved the Show from being a failure. Cottagers are capable of growing vegetables and the commoner kinds of fruit and flowers most creditably, but they cannot make a generally interesting display, and this the founders of cottagers' shows will do well to bear in mind.

In the gardeners' classes the largest prizewinner was Mr. B. Hopkins, gardener to John Baily, Esq., Frome, this exhibitor being a creditable first in the classes for fine-foliaged plants, Pelargoniums, collection of vegetables, collection of six varieties of fruit; second for an unlimited group of plants, &c. The first-prize group was arranged by Mr. E. J. Wilcox, gardener to Mrs. Sinkins, Frome, and included a considerable number of well-grown specimens of flowering and fine-foliaged plants. Mr. Wilcox was also a good first for specimen exotic Ferns; the second prize going to Mr. G. Taylor, gardener to A. R. Baily, Esq., Frome. The latter exhibitor was also first for a group of Fuchsias, these being very well flowered. Mr. W. Stringnell, Marston Gardens, Frome, was a good first in the classes for hand and buttonhole bouquets, and for a vase, showing good taste in each instance, and in these classes Mr. W. Stay, gardener to E. H. Dickenson, Esq., also exhibited successfully. Cut Roses were shown by Mr. E. Brown, Chapmanslade, and Mr. Hopkins; and Mr. F. Lindsey, Spring Gardens, Frome, was first with cut Dahlias, Mr. Hopkins again being a good second. The latter's first-prize collection of fruit included good Grapes, Peaches, Melons, and Apples. An extra first prize was awarded to E. R. Trotman, Esq., The Elms, Frome, for a well-grown group of Gloxinias.

There were no less than sixty classes for cottagers and amateurs, and in most of them the competition was fairly good. Fruit, as might be expected, was not largely shown. In the amateurs' classes Miss Browne, Beckington;



ave shown that the metal manganese exists in Wheat, Rice, and a great variety of vegetables. Wheat contains from 1-5000th to 1-15,000 of its weight of the metal, which exists chiefly as a salt of an organic acid. It is also found in Potatoes, Beetroot, Carrots, Beans, Peas, Asparagus, Apples, Grapes, and so on. The leaves of the young Vine are very rich in it; so are the stones of Apricots. The proportion in Cacao is very great, as it is in Coffee, Tobacco, and especially in Tea. In the 50 grammes of ashes left by a kilogramme of Tea, there was found 5 grammes of metallic manganese. There are vegetables, however, in which no manganese can be found, as, for example, Oranges, Lemons, Onions, &c. Many medicinal plants contain it, as, for example, Cinchona, White Mustard, the Lichen (*Roccella tinctoria*). Tea, Coffee, and other vegetables require abundance of manganese in the soil for their proper cultivation, and the absence of it may account for the failure of many plantations.

— AN INDIAN GARDEN.—In the first annual report on the gardens of the Maharana of Oodeypore, the Superintendent, Mr. T. H. Storey, gives the following description of their situation, &c.—“The gardens are situated in a valley bounded on the south by a large hill over which the city wall runs and dips into the lake on the west side. The hill is very grand, towering above the gardens, and clothed with thick jungle, which during the rains is very imposing. The only specimens worth noticing on it are *Hemidesmus indicus* or Indian Sarsaparilla, *Adiantum Capillus-Veneris*, and *Actinopteris radiata*. On the north, by one of the most beautiful lakes in the plains of India, which gives an endless supply of water to the garden, and is about 80 feet above its level, kept back by natural rocks. The palace lies to the north side also, and commands a fine view, not only of the gardens and city, but the lake, plains, and hills for miles around. The gardens round the palace are very beautiful; plants are growing in rustic baskets made of glass, marble, and china, and meet the eye on every side. In the centre of the lake, and about half a mile apart, are two island palaces which vie with each other in beauty. The one nearest the palace has a lovely garden containing a number of Orange trees of the finest description, and bearing fruit of the finest flavour. On the opposite side of the lake are acres of Lotus, *Nelumbium speciosum*, which flower during the hot season, some of the leaves appearing like miniature *Victoria regias*. The flowers are also much larger than any I have seen before, some of them measuring 1 foot in diameter. The only other aquatic plants found in the lake are *Vallisneria spiralis*, *Pistia stratiotes* (or Water Soldier), and *Anacharis alsinastrium*; and as the latter is supposed to be an American plant, it seems a mystery how it found its way to an inland lake without any connection or river.”

— METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS.—Mr. Joseph Mallender sends the following summary for July:—“Total duration of sunshine in the month, 147·2 hours, or 29 per cent. of the possible duration; we had two sunless days. The sunshine was about the same as last year, but much less than the two previous ones. Total rainfall 4·20 inches. Rain fell on nineteen days. Maximum fall in twenty-four hours on the 9th, when 2·04 inches fell. This is the heaviest fall yet recorded here in twenty-four hours; of the total, 1·34 fell in twenty minutes, and as there were several lulls, the greater part fell in a much shorter time; there was also a fall of 0·83 inch on the next day. Mean temperature of the month, 60·9°; maximum on the 4th, 84·4°; minimum on the 20th, 40·7°. Maximum in the sun on the 4th, 136·3°; minimum on the grass on the 20th and 26th, 35·2°. Mean temperature of the air at 9 A.M., 63·4°; mean temperature of the soil at 1 foot deep, 62·0°. The first few days were fine and warm, but after the heavy thunderstorms on the 9th a change set in, and the rest of the month was showery and rather cold. The rain was much wanted, but it came rather too heavily.”

— GARDENING APPOINTMENTS.—Mr. J. Atkins, late gardener to Colonel Sir Robert Loyd Lindsay, Lockinge Park, has been appointed gardener to Lord Egerton of Tatton, Tatton Park, Knutsford; Mr. Peter Cliffe, who has for many years been gardener at Tatton, retiring from active duty, we trust to enjoy a well-earned rest. Mr. G. Bethell, for some years gardener to Sir Richard Wallace, Bart., Sudbourne Hall, Wickham Market, Suffolk, has been appointed to succeed Mr. Austen as gardener to Sir J. H. G. Smyth, Bart., Ashton Court, Bristol. Mr. G. Trinder has vacated his situation as head gardener at Billingbear Park, Wokingham, Berks, and has been appointed gardener to Sir Henry St. John Mildmay, Bart., Dogmersfield Park, Winchester, Hants.

— DR. LYONS, M.P., again calls attention in an article in the *British Trade Journal* to the subject of our FUTURE TIMBER SUPPLIES. The land really covered by timber in the United Kingdom amounts to two million acres—an area so small that we are entirely dependent upon other countries for our supply. So extensive, in fact, are our imports of timber, that corn, cotton, wool, and meat imports alone exceed them in value. Hitherto we have been comforted by the belief that the timber supply of North America was practically inexhaustible. We read of great tracts of unexplored country, hundreds of miles long, clothed with magnificent forests that were able to meet the timber demands of Europe for all time to come. This happy illusion has been dispelled by Dr. Lyons. Instead of the continent of timber we dreamed of, we learn that the forest area of North America is only 380,000,000 acres, or little more than half the forest area of Europe. At the outset the forests cannot have been so extensive as travellers reported, and the effects of those glowing reports have been disastrous, for the lumbermen were allowed to destroy the more accessible forests unchecked, and most of the forest lands that now remain are so remote and inaccessible that the timber trade is bound to become more difficult and costly. That is, if the States and Canadian Governments will allow the lumber trade to be so recklessly continued, for there are indications, afforded by the hasty and anxious re-forestation of large tracts of America, that our supply from that country will be reduced. We would then have to turn to Europe. But Russia is also anxious about the clearing of her steppes, and planting on a large scale is there also being carried on. Dr. Lyons recommends that the five million acres of waste land in Ireland should be planted, and thinks five million acres in Scotland might also be available.

— ACCORDING to official statistical reports the average annual CROP OF POTATOES throughout the world is as follows:—Germany, 235,000,000 metrical hundredweights; France, 113,000,000; Russia, 110,000,000; Austria, 75,000,000; United States of America, 47,000,000; Ireland, 38,000,000; Great Britain, 26,000,000; Belgium, 20,000,000; Sweden, 16,000,000; Holland, 15,000,000; Hungary, 14,000,000; Italy, 7,000,000; Norway, 6,000,000; Denmark, 5,000,000; the Australian colonies, 3,000,000; Portugal, 3,000,000; and Spain, 2,000,000 metrical hundredweights. Grand total, 730,000,000 of hundredweights.

— IN referring to the death of Mr. AUGUSTUS FENDLER, which took place on the 27th of last November, but which has only lately become known, the “American Gardeners’ Magazine” gives the following particulars of his life and labours:—“He was born near Königsburg in Eastern Prussia, came to America not far from 1840, and was employed by Drs. Gray and Engelmann to collect plants in northern New Mexico in 1846. For a number of years he remained in a measure secluded in a rural retreat near Allenton, Mo., and eventually was induced to accept the care of the Bernhardt Herbarium, after its purchase by Mr. Henry Shaw for the Missouri Botanical Garden. He soon after left the position, and, we believe, returned to his native land. In 1872, or thereabouts, he surprised the writer by a call, expressing a desire to settle in some little hermitage, where, by caring wholly for himself, he could, within his limited income, live only for his scientific pursuits. The facilities for scientific study in the vicinity of Philadelphia pleased him, but was found too expensive, and a place more consistent with his means was found near Wilmington, Del., to which he subsequently removed. But even here the vicissitudes of climate entailed expenses which would not be called for in a milder region, and he removed to Trinidad in the West Indies, where he continued till his death. This departure was, the writer believes, hastened by the expense attendant on the publication of a curious book, “The Mechanism of the Universe,” in which he proposed to elucidate the cause of gravitation and other problems. He had hoped to find a publisher, and tried very hard to induce some Philadelphia house to undertake it—finally, rather than believe his work useless labour, issuing it at his own cost. He was particularly sensitive to a reputation for strict accuracy. A remark he once made to the writer gives the key-note to his whole character: ‘It is pleasant to think that my name may live in connection with some useful work long after my body shall be committed to the earth—but a thousand times would I prefer that my name should be utterly forgotten than that the truth should not prevail.’

— ROYAL BOTANIC SOCIETY.—The forty-fifth anniversary meeting of this Society was held at the Gardens, Regent’s Park, on Monday last. Mr. J. P. Gassiot, Vice-president in the chair. The reports of the Council



and Auditors gave a very gratifying account of the progress of the Society during the year. The receipts have been £7045, against £6651 for the preceding year. The expenses, however, have been heavy, mainly owing to new works, such as rebuilding the corridor and greenhouses and enlarging the tropical portion of the conservatory or Palm house, undertaken during the year; notwithstanding which the accounts show a considerable balance of receipts over expenditure. Exhibitions were successful; especially was this the case with the evening fête, which attracted over 8000 people, the receipts being £1818, a sum altogether in excess of any previous ones. Special facilities have been given to professors, artists, and students engaged in the study of botany and allied subjects; 743 free orders of admission were granted of from one to six months each, and 48,000 cut specimens of plants and flowers distributed to the various hospitals, medical schools, and schools of art in the metropolis for examination and demonstration. The lectures on botany given at the Gardens by Professor Bentley have been well attended, and cannot fail to be of use in diffusing a better knowledge of botany, open as they are to all visitors to the gardens.

— HOTEL WINTER GARDEN AND PROMENADE.—We understand that the South-Eastern Railway Company have decided to enhance the attractions of the Pavilion Hotel, Folkestone, by the addition of an extensive Winter Garden and Promenade for the use, pleasure, and comfort of their numerous patrons. This building, which (as far as we know) will constitute an entirely new feature in hotels, will adjoin and have a special entrance direct from the hotel. We have no doubt it will prove an agreeable lounge and rendezvous at all times, but particularly in rainy weather and to persons of delicate constitution. The building will be 160 feet long by 50 feet wide, and will be fitted up with seats and lounges for the convenience and comfort of the visitors. All the plants and trees employed for its decoration and adornment will be selected for their attractive foliage and hardy habits, none being used but those which require a moderate genial temperature, and this will be maintained all through the winter by means of hot-water pipes. We have no doubt but that the enterprise of the proprietors will meet with its reward. With regard to the style and quality of the building, it will suffice to say that it is in the hands of Messrs. J. Weeks & Co., Chelsea who are erecting it from their own designs.

— ERRATUM.—In our report of the Liverpool Show (page 125) in the class for four bunches of Grapes the second prize is announced as awarded to Mr. G. Middleton, gardener to R. Pilkington, Esq., Windle Hall; this should be Rainford Hall.

### AUTUMN-SOWN ONIONS.

THESE are the most useful of all Onion crops. We are continually hearing complaints of the loss of the spring Onion crop, and a great loss it is, as in every kitchen of any importance nothing can be done without Onions on any day in the year; but if autumn-sown Onions were more extensively and generally grown the supply would be more certain and satisfactory. By sowing at once young plants will be produced by November, and in the absence of others some of these may be employed in the kitchen, and many will use them as salad. Here their use begins in November, and by the spring the plants are as thick as a thumb and will be much valued by the cook. In April, May, and afterwards they will have formed good bulbs, and nothing could be better for culinary purposes. Now they are excellent, and they will continue so until well into the autumn. Indeed such good sorts as the Giant Zittau, Webb's Blood Red, and Emperor Globe will keep as well throughout the winter as any of the spring-sown ones, and anyone may easily keep up an all-the-year-round supply of Onions from autumn-sown seed, while there is this important advantage that they are not half so liable to be attacked by grubs as the spring-sown ones. I intend growing the autumn Onions more largely as being the best and most profitable; and I think cottagers and small growers are beginning to find this out too, as at our recent show the autumn bulbs surpassed all in numbers and quality.

The best way of dealing with them is to make two sowings now, the other about the second week in September. Good ground must be given them. It may be deep or shallow, stiff or loose, but it must be rich. Firm soil is an advantage, as the plants grow most robust in it, and also bulb better than in very loose soil. In the latter good Onions will never be produced.

Although autumn-sown Onions are not so liable to become maggoty as the spring ones they are not altogether proof against such, and it is best to take a few precautions against the worms. This should be done when the soil is being prepared for sowing the seed. In digging

it up it will most likely require manuring, and besides this a good sprinkling of salt and soot should be put in. Gas lime is as good as either of these for killing the worms. Ordinary lime is also valuable, and each or all of them should be thoroughly mixed up with the soil as it is turned. The seed may be sown immediately after digging in rows from 12 to 16 inches apart, and not more than 2 inches below the surface. If the drills opened for the reception of the seed can be filled with better material than the ordinary soil of the quarter it will benefit the seedlings when they are very small. In covering them the surface over the seeds should be trodden down firmly and then made smooth. Keeping them free from weeds is the principal late autumn and winter requirements. The White Italian is one of the quickest varieties to gain maturity, and New Queen is very good in that way too; but where it is desired that the bulbs should keep as long as possible those named above must be included.—J. MUIR, Margam.

### A HORTICULTURAL OUTING.

"WHAT a perfect day!" was the exclamation of our party as we emerged from the station at Leatherhead and found brakes awaiting us for our trip. But who were we? Well, some members of the Horticultural Club, who, encouraged by the success of their venture last year, had determined to try it again. "Ah! you will not find it answer; such a summer as you had last year does not repeat itself, and you will be doomed to disappointment." "Perhaps," was our meek reply, "history will repeat itself, and we shall have a different tale to tell," and so we had; and the universal verdict was, that good and pleasant as our last year's excursion was, this was even better. The weather was better, for once last year we had a slight shower of rain, but to-day was fine beyond expression—not too hot; everything fresh and beautiful after the late rains, and just that mist over the landscape which, while it hides nothing, gives that indescribable effect which is the despair of artists; and while we had not the grand Conifers of Dropmore or the lovely grounds of Cliveden to roam through, we had in prospect the gardens of two of our most successful orchidists and two of the most charming seats in Surrey to visit. Of our company we will say nothing, for were we not horticulturists? and does not that imply (except in rare instances) geniality and courtesy, a lively appreciation of the beauties of art and nature, and a by no means cynical contempt for the good things provided for us. We had with us our veteran Chairman, Mr. John Lee, the wonder and the envy of younger men; and with us, too, a fair proportion of the gentler sex, without whom on such occasions things are apt to be so flat and selfish; and now, as we have a good six hours' work before us we are off. Our first visit was to

#### MR. WILLIAM LEE'S OF DOWNSIDE,

A name well known to all Orchid lovers as an enthusiastic grower and patron of this marvellous tribe of plants. Of course we knew it was about the worst time of the year to see Orchids, and that but little would be found in bloom, but we saw enough to repay us for our visit. Some of the *Masdevallias* were in flower—*M. Chimæra* and some of its curious allied species, fine plants of *Cattleyas gigas* and *Gaskelliana*, some spikes of the ever-beautiful *O. Alexandræ*; but these were but few and far between. The whole range of Orchid houses is of a very complete character, and during the proper Orchid season must be a fine sight. However, we had not time to linger, and so drove on to

#### SIR TREVOR LAWRENCE'S, BURFORD LODGE.

Here, while Orchids are the great *pièce de résistance*, yet very many other things are done in grand style. The grounds of Burford Lodge are charmingly situated inside the towering chalk cliffs of Box Hill, while the river Mole runs through it, and grand Elms and other forest trees give their delightful shade, and the well-kept turf is a refreshment to the eye. Order and neatness reign here. The Orchid houses contain probably the most complete selection of rare and valuable Orchids in the kingdom—the best strains, the most handsome forms are to be found here. To this, however, I must make one exception. There is a poor form of *Disa grandiflora*, similar to that at Glasnevin, which in size and colouring is very far inferior to the variety which I grow, and which I believe is correctly *superba*; in fact, pretty as it is, no one would think of growing it when the other is to be had. In the herbaceous garden were all kinds of pretty things. A delightful bed of that charming Carnation Mary Morris, of which so much has been said, but is one of those things that deserve any praise. Gladioli looked fairly well, and some fine spikes were in flower. The same holds good everywhere as far as I can see this year, and it goes far to prove what I have all along contended, that the cause of failure is more to be attributed to climate than anything else, and that the theory of exhaustion is altogether erroneous. Then *Spiræas*, *Phloxes*, and all kinds of good things were well done, while a bed of *Canna Ehemanni* under one of the windows of the dwelling house excited the unbounded admiration of some of our party. In one of the houses was a beautiful collection of the best kinds of Tuberous Begonias, while *Lapagerias* white and rose-coloured covered the roof. One of the natural wonders of the place are the blow-holes, as they are called, which, when the river is at a certain height, are filled 30 feet deep with water, which reaches them from under ground. Everything in this charming place is in the perfection of order, and reflects the highest credit on both Mr. Barnes, the head gardener, and the Orchid



grower as well, for these latter were in the perfection of health. Very different in character was the next place we visited.

#### MR. CUBITT'S OF DENBIES:

From the entrance gates, which are two miles from the house, there is a continuous ascent to the house, which is indeed set on a hill; and as the drive is an open one, delightful views of the surrounding country, including Dorking and Leith Hill, are to be had; and from the house itself a most extensive panorama is to be seen on all sides. Having through the kindness of one of our members, Mr. Cuthell, had an access to it, we were enabled to see the fine collection of paintings by some of our best modern artists, and to admire the admirable arrangement of the whole residence. Then we walked through the quarter of a mile of conservatories, filled to overflowing with all kinds of beautiful things, the roof of that nearest the house being covered with *Tacsonia exoniensis*. In the long conservatory *Solanum jasminoides* was full of bloom; while *Lapagerias* hung in ropes of glorious white and rose-coloured flowers from the roof. The back walls were covered with large plants of *Abutilons*, *Heliotropes*, and other pretty things; and on the ground splendid plants of *Fuchsias*, *Geraniums*, *Begonias*, &c., filled every space. Outside grand *Conifers*, flowering and other ornamental shrubs were to be met with in all directions. The beautiful greensward invited us to linger; but we had to move onward (we could not, however, resist a short delay in visiting the beautiful church, one of Gilbert Scott's best specimens, and erected by the late Mr. Cubitt at a cost of £25,000), for we had to pay yet another visit to

#### DEEPDENE,

g

Long the residence of Mr. Henry Hope and his widow, but was passing into the possession, through marriage, to Lord Clinton, a brother to the Duke of Newcastle. Here it was not so much the gardens as the place itself that attracted us; although, let it be said, that spring and summer is the time when Deepdene is seen at its best, for the place is crowded with *Rhododendrons*, and must then be a blaze of beauty. So much did our party feel this that, charmed as they were with the prospect, with the beautiful vistas that opened out on every side, they voted that we should try for a visit next May. As its name implies Deepdene occupies a large deep ravine, such as are often found on the Surrey hills, and everything has been done by art to add to its natural beauties. There is no obtrusiveness of art except what I should call in one instance, where, as you look down from the terrace, your eye rests upon a large piece of bedding-out far down below in the plain. This, in my humble opinion, had better have been omitted, and if the clumps of variegated *Maple* had been thrown back to the shrubbery they would have given a contrast which would have relieved the deep green of all around. Having reached the terrace we then began our descent to the house, where the carriages were awaiting us, and then drove back to Leatherhead (through the dear old county town of Dorking) where an excellent dinner had been provided for us at that old-fashioned most comfortable house, the Swan Hotel, in their large and handsome room. Our journey had sharpened the appetites of our party, and ample justice was done. Our saloon carriage was ready for us at 8.40, and we returned to town delighted with our day, in which not a hitch occurred, owing in great part to the excellent arrangements made by our friend Mr. Cuthell; and "To our next merry meeting" was the parting word as we went to our several destinations, feeling that but for the Horticultural Club these pleasant gatherings would never have been held.—D., Deal.

### ORCHID NOTES.

**ONCIDIUM FLEXUOSUM.**—This old but useful Orchid should have a place in every garden where a stove or intermediate house exists. Neither of these structures, however, are absolutely necessary, for it can be grown to perfection in the temperature of a vinery. It is rather accommodating in this respect, but if one position is preferable to another while making its growth it is the stove, and an intermediate structure during its resting period. When grown the whole year round in a warm confined atmosphere the foliage assumes a yellow unhealthy appearance. This plant is often to be found in this condition, but it is not natural, for when its wants are properly attended to the foliage should assume a green healthy appearance. This is one of those Orchids that do not flourish luxuriantly when an attempt is made to confine the roots of the plant within the pot or pan in which it may be grown. Attempts at lowering the stems and potting the plants deeper into the compost used as a medium for the roots should be avoided if the most successful results are to be obtained. Instead of this really useful *Oncidium* requiring a mass of material for the roots to ramble in, it delights in throwing them into the air if the house is moist and warm. Whether grown in pots, pans, or baskets very little soil should be used. I therefore prefer growing it in baskets made of teak, and suspend it from the roof of the stove. The baskets should be well drained, and then nearly filled with lumps of charcoal; and it is a good plan in making-up baskets to place lumps of charcoal in an upright position close behind each stem of the plant, working amongst them a small quantity of living sphagnum moss. As soon as the new roots commence issuing freely from the base of the pseudo-bulbs, just as they are starting into growth, they attach themselves securely to the

charcoal, and finally as they extend outside the basket. I have found the roots enter moss with greater freedom than peat. Very little moss is needed, only sufficient amongst the charcoal to assist in retaining moisture during the growing season.

While growing this *Oncidium* delights in heat and moisture, but at the same time sufficient air should be admitted to the house to ensure firm sturdy growth, which is the secret of large stout flower spikes. During the time growth is active the plants may be syringed liberally overhead, and abundance of water given at the root. Afterwards less water is needed, and syringing must be discontinued until the plants are removed to a lower temperature to rest, when water only is needed to keep the pseudo-bulbs fresh and firm. Shade is necessary during the period of active growth, but abundance of light should on all occasions be admitted to the plants.

Under this system of cultivation large spikes of flowers are produced at different periods of the year, which are invaluable for cutting. These light arching sprays of bloom are admirably adapted for light and effective arrangement in vases. There are nearly always a few flowers to be obtained if several plants are grown.

**ONCIDIUM LANCEANUM.**—Another grand old Orchid that will do as well in the stove or a vinery as in the Orchid house proper. It is quite distinct as a species from any other, and when well grown its foliage alone is very ornamental, being light green in colour, thick, and fleshy, and shaded with darker green and small purple spots. It is a very useful Orchid, flowering at this season when Orchid flowers are not so numerous as they are earlier in the year. When well grown and luxuriant the flower spikes are often 2 feet or more in length and much branched. There are several varieties of this *Oncidium*, but all I have yet seen are worth growing. Most of them differ from the type, which has a rich rosy lip, by having a white lip, or only lightly shaded with rose. The flowers of these forms are generally smaller than the type, but darker and richer in colour; the sepals and petals are greenish yellow, spotted thickly with brownish crimson. The colour of the sepals and petals is lighter in some varieties than others, and the spots are richer, closer together, and more vivid in colour.

This species will grow in a pot or a pan, but better on a large block, raft, or in a basket, the latter being preferable, as this plant delights in throwing its roots into the atmosphere, and often they will hang for a foot or 18 inches beneath the basket of a strong plant. To grow varieties such as this in pots and pans is a great mistake when the plant delights in having its roots outside the potting material and in the atmospheric conditions of the house in which it is grown. When grown in pots or pans it is difficult to confine the roots inside, and even if this could be accomplished it is unnatural; and if the roots are allowed to ramble over the sides of the pot in which they are grown they are subject to serious injury from continually washing the pots, which, in a close moist atmosphere, are green in the shortest space of time. It would be impossible to point out anything that gives to a house a more untidy appearance than dirty pots or pans. Although this *Oncidium*, as well as many others, thrives luxuriantly on blocks with a little sphagnum moss, they give considerable trouble in keeping them watered, much more so than when in baskets.

During the growing season *O. Lanceanum* delights in heat and moisture, and should be shaded only from the direct rays of the sun. Light is essential at all times to ensure a sturdy matured growth. During the winter rest is necessary if strong luxuriant growth is to follow. The management of the plants during their season of repose is as important towards achieving success as attending carefully to their wants during the season of active growth. We have found this plant rest well in a night temperature of 50° to 55° where the atmosphere can be kept rather dry. Although it has no large pseudo-bulbs to sustain it during the dry or resting season, its leaves are thick and fleshy, which enables the cultivator to withhold water for a long time when the plant is at rest without the slightest injury. During the season of action abundance of water may be given both overhead and at the root. The potting material for the roots to work in need only consist of charcoal in lumps and living sphagnum moss. We have used peat, but the roots do not enter it so freely as they do the moss.—W. B.

**DENDROBIUM CHRYSANTHUM.**—Where choice flowers are in demand for small vases or for buttonhole bouquets at this season of the year, there is no more serviceable Orchid in cultivation than the above. Well-grown plants with pseudo-bulbs 3 to 4 feet in length are very attractive suspended in baskets from the roof of a plant stove. This variety usually flowers just as growth is completed, and while possessing the whole of its foliage it frequently continues the supply of its blooms in succession for a long time. There are varieties of this as well as of many other Orchids, and we have two which as regards their habit of flowering and the season are totally dissimilar. One may safely be designated an autumn bloomer, for



its flowers with us are not produced for long after the present date, and then when the pseudo-bulbs are firm, ripe, and destitute of foliage, the other being evergreen during the flowering season. From the latter we have had two crops of flowers in the year by subjecting the plants to only a short period of rest, and then starting them again in brisk heat, but with the other variety this cannot be accomplished. We do not recommend this course of treatment, for it soon proves exhaustive, and the plants only make weak pseudo-bulbs. After flowering this variety is very liable to commence activity again, and will do so unless every precaution is taken to prevent it. When this ceases to flower for the season water should be gradually withheld from the roots, and the plant or plants removed from the stove to a lighter, cooler, and drier atmosphere in order to bring the growth to a standstill. Under artificial treatment this *Denbrobium* has a tendency to grow after flowering if kept in a close warm atmosphere, and under a continual system of activity soon exhausts itself. We can scarcely expect anything else if the plant is allowed to make and complete its growth during the worst months of the year. This Orchid may, without the slightest injury, be kept as dry at the root and as cool during the season of rest as any other *Dendrobe*. A good season of rest is the secret of obtaining strong vigorous growth the following season. During the active growth this luxuriates in heat and moisture, and should be shaded only from bright sunshine. Plenty of light and a good circulation of air are the conditions under which stout firm growth is made and abundance of flowers are produced. The syringe should be liberally used, or red spider will establish itself upon the foliage, and very soon arrest the growth. Abundance of water is also needed at the root. It does best in a basket in peat fibre, lumps of charcoal, and sphagnum moss.

#### WATERING PLANTS.

THIS has certainly been, and is still, a season when a few lessons may be learned in watering plants. I am very glad to see attention called to this important matter, and I trust many a young gardener will think seriously over the matter; indeed, it is not saying too much, as your able correspondent, "Thinker," points out, that every good waterer should be able to think through a bushel of soil. It must not be taken for granted that all young men are alike. They are not all bad waterers, therefore those head gardeners who happen to possess a good one should treat him as they would like to be treated and try to keep him. Everyone must have a learning, and I can say for one that out of many I have had I could generally get them into my way of watering in a few short lessons. I daresay if it were possible to read all the whys and wherefores of good and bad watering we should find that thoughtlessness was at the bottom of it in nine cases out of every dozen. For instance, how often do we find young men dabbing their finger tops into the surface of the soil of pot plants with the idea that they can ascertain whether it is wet or dry. I have often rebuked men for this, and I think deservedly, as nothing can grow in soil rendered like a rabbit's run with the constant dabbing of one's fingers; better far lift the pot up and think through it, or else rap it hard with the knuckles. Even if the pot does prove harder, the knuckles will soon harden to the work.

If I were going to water one or more houses of plants I should first take out half a dozen or so at one end, place them out of the way till I had turned every plant round on the stage and "thought" a little, and perhaps rapped the pots, and if necessary watered them; those taken out where I began would be put up to fill my open space at the end where I should finish.

For my part I like to do watering in the evening in summer, while in winter I prefer the middle of the morning; but it matters little when it is done, provided it is done at the proper time with proper care. It is impossible to gain sufficient knowledge in the art of watering plants in pots by reading, but I am sure much good would come from a few notes by those best able to give them.—G. M. W.

#### MUSCAT TROVEREN AND OTHER GRAPES.

I HAVE not had much experience with this Grape, but know enough about it to be in a position to give an opinion as to its merits as a table or exhibition variety. With me it grew fairly strong under similar treatment to that given to Foster's Seedling and Madresfield Court, but proved less prolific than either. It is more of the Frontignan than Muscat type, and though much liked as a dessert fruit on account of its brisk and refreshing flavour, is far from being a good exhibition Grape. Against Muscat of Alexandria, if the latter be fairly well grown, it would have no chance, but should be entered in the classes either for Frontignan varieties or for any white Grape exclusive of Muscat of Alexandria. The comparative smallness of the berries and the colour are defects, the berries being of different sizes, and varying still more in colour. Some of the berries were of a good amber, and enough to spoil the bunch of a dirty brown appearance. Those who possess a stock of fruiting or planting canes of this variety are naturally disposed to highly recommend it to purchasers, but it is not a popular Grape, and never will be. Venn's Black Muscat is now generally considered identical with the Muscat of Hamburg, and the variety under either synonym is not extensively grown. The experience your correspondent "A. J. B." has had with it does not differ from that of nearly all who have given it a

trial. The perfect examples of it when first exhibited by Mr. Venn at one of the great Birmingham Shows, I forget which, caused quite a sensation among the many noted fruit-growers there assembled. All that I am acquainted with order a Vine or Vines of it from the grower, and all soon discovered that Venn's Black Muscat was only another name for Muscat of Hamburg. The latter is perhaps the most fickle and difficult to cultivate of any Grape we have, and even Mr. Venn has completely failed with it. Very rarely indeed do we see a well-set fair-sized bunch. On the contrary, in most cases at least half of the berries are small and stoneless, this altogether spoiling the appearance of an otherwise most valuable Grape. As a rule it colours perfectly, and I consider a stand of it in really good condition should be preferred to any other black variety shown against it, so superior is it in quality to all others. As it is a fairly strong grower it would form a good stock for any Grape, whether black or white.

"A. J. B." states he has "some good Black Muscats growing near Venn's." Muscat of Hamburg is sometimes called Black Muscat, but I presume his is Mrs. Pince's Black Muscat. In this case he is fortunate in possessing a really useful variety, and supposing his bunches and berries are of good average size and well finished, I should say they would be preferred by the judges to any other late black variety of somewhat the same size and finish. I add the latter condition, as in all cases where exceptional fine examples of somewhat inferior quality are staged the judges cannot well pass over these in favour of examples of better sorts, though not so well grown. Mrs. Pince seems to colour remarkably well when ripened or forced early. Some of the best finished examples of it I have yet seen were shown at local shows early in July by Mr. L. Barnes, gardener to the late Lady Herschel, Collingwood, Hawkhurst, Kent, and I believe he has exhibited them in similarly good condition at about the same time other previous years. This persevering gardener conceived the idea of turning a rod of Mrs. Pince into the early variety, the other half of the Vine being fruited in a later house with the most satisfactory result. More often than not Mrs. Pince is exhibited in fairly good condition, only the berries are not unfrequently "foxy red" instead of black. It appears, however, to be gaining in constitution, and as a consequence it colours much better than formerly.—W. IGGULDEN.

#### FINE CONIFERS.

WE have some fine specimens here. *Araucaria imbricata*, planted about forty years ago, stands 40 feet in height. It has twenty-four tiers of branches, the lowest of which is lying on the surface bedded in the grass and moss, and is beautifully green and healthy. Each branch of the lowest tier measures 10 feet from the stem to the tip; the stem measures  $3\frac{1}{2}$  feet in circumference 3 feet from the ground. I believe it is a male plant, and I have never known it to bear cones.

*Cryptomeria japonica*, planted at the same time as the *Araucaria*, stands 35 feet in height; it would have been much higher but it lost 3 feet of its top about five or six years ago. The stem measures 4 feet in circumference 3 feet from the ground, and the lowest branches, which are lying on the surface, measure 12 feet from the stem to the tip. The two trees mentioned I consider very fine specimens. If any of your readers know of larger I should be glad to hear of them.—THOMAS LESLIE, *The Gardens, Ardarroch, Garcloch Head, Dumbartonshire, N.B.*

#### PRUNUS PISSARDI.

WE exhibited this new purple-leaved Plum early in the season (grafted under glass) at Kensington, and the Committee desired to see it again, which they did in examples from Messrs. Veitch & Sons, to whom they awarded a certificate. We consider it a great addition to purple-leaved shrubs and trees, as both in and out of doors it retains its fine colour, and does not burn, as many of these coloured-foliaged trees do. The grafted plants under glass have stood all the scorching sun outside without any injury, and are in good order to the base; but those on standards in the open are very telling. The young growth, being semi-transparent, is very taking in full sunshine, and while making fresh growth the old leaves retain their rich claret colour, and some dwarfs in a bed of Silver Maples are very conspicuous.—GEORGE BUNYARD & Co., *Maidstone*.

#### THE ROSE ACACIA.

THIS fine old shrub is a great favourite with many persons, but that it is a stranger to large numbers was abundantly proved at the Richmond Show a few weeks ago. Messrs. C. Lee & Son there exhibited a remarkably handsome group of variegated shrubs and trees, and amongst them were introduced some large clusters of the bright and beautiful Rose Acacia, *Robinia hispida*. The branches shown were loaded with flowers of a most charming rich rose colour, and there was certainly no one exhibit which awakened such general admiration as this. The inquiries concerning it were most numerous, and the comparative few who knew it gladly welcomed it as an old friend.

*Robinia hispida* is a most valuable garden plant, and as a standard it has a fine appearance, forming compact heads and bearing immense numbers of loose racemes. It is usually grafted on seedling stocks of the common Locust, *Robinia pseudacacia*, and is generally preferred in that



way, though upon its own roots it will attain a height of 10 or 12 feet, or in exceptional cases as much as 20 feet. Several varieties have been raised differing slightly from the type in colour and habit, and which have generally received names indicating these peculiarities; nana, rosea, macrophylla, grandiflora, and complexa are examples, some of which appear in nurserymen's catalogues.

### CULTURE OF ROSES IN POTS.

PERSONS of all ages that have an admiration or taste for flowers are acquainted with the Rose. It may be truly termed the most popular flower grown, and nearly every person who cultivates flowers seems desirous of planting a Rose tree in their gardens. In the suburbs of

will now give some of the details that are necessary to be observed in their cultivation.

If the plants when obtained are well established in pots—that is to say, they are furnished with abundance of healthy roots. If they are not in that condition it is useless to attempt to grow them under glass, for the wood will become spindly in the absence of sufficient root-action. The plant may be root-bound; but whatever deficiency there may be of nourishment in the soil can be supplied by feeding the plant at least once a week with weak liquid manure or by surfacing the soil with 2 or 3 inches depth of decayed manure, that from the cow shed being preferable. As soon as the plant begins to grow in earnest you will, on examining the said surface dressing, find that it is filled with a large quantity of white fibrous roots: this shows that the plant is healthy and in a vigorous state. After top-dressing



Fig. 26.—ROBINIA HISPIDA.

most of our large towns the building of middle-class houses is now being carried on to a great extent. The grounds may be small adjoining the houses, but there is mostly a small conservatory, which, however, is generally regarded more as an ornament than for the cultivation of plants, as in the majority there is no means of providing heat. We must not be discouraged in the absence of such an assistance from pursuing our favourite pastime the cultivation of plants, as there are numerous flowers that are very beautiful, and many of which are very fragrant; but yet their cultivation can be successfully accomplished with the aid of a common glass structure, though there be no means of supplying them with fire heat. In that list is the Rose, for which a glass structure such as that I have alluded to will suffice, the great point being to have the means of protecting them from heavy rains and from the scorching rays of the sun when they are in bloom. I

with manure great care must be exercised in supplying water, or the soil may become soddened. To guard against this evil ascertain the condition by rapping against the side of the pots with the knuckles, and should it sound hollow then water it, but if of a dull heavy sound then be very cautious.

The pruning of the plants is another matter demanding consideration, especially as it is somewhat different from the ordinary mode as adopted with those planted in the open ground. We are generally anxious to have a well-shaped plant, because when grown in a pot defects are more observable than in the open ground; therefore we often leave some of the shoots of much greater length than others, according to their strength and the requirements of the plant, which are trained to stakes in order to give it a neat appearance, and the blooms generally need support. In tying, the longer shoots are bent



down at the point, the object being, as in the case of a Vine, to seek to cause the buds at the base to break uniformly with those of the upper part of the shoot. Thus you can maintain an equal balance of strength, otherwise the top eyes or shoots are sure to grow with greater vigour at the expense of the lower or mid eyes, which become weakly. The leading or first blooms will come from the extreme point, but a prolongation of the flowering season can be insured by the bending-down process.

As the buds break afford them all the light and air possible and keep them near the glass, as this will strengthen the shoots. When the wind is east be cautious in the admission of air, for easterly winds, especially in the spring, are very hurtful to vegetation under glass; but when the weather is mild and the house or pit about to be closed for the evening, then syringe them with some tepid but clear water. Avoid syringing on dull and cold days, or mildew will appear, the first signs of which will be white patches or spots on the upper as well as the under surface of the leaves. As soon as these indications are discovered take a small pepper-box filled with powdered sulphur and dust the parts affected. If not done immediately it may get so bad that all future efforts will be useless. Green fly is another destructive pest that must not be allowed to remain, or it will quickly suck away the vital energies of the young wood. Fumigation is the most certain cure, but in small conservatories and adjoining the residence the operation is mostly disagreeable. The best way then is to procure some strong tobacco water and dip the points of the shoots or the buds in it, afterwards syringing it with clean water so as to remove the stain of the tobacco water. Sometimes a feather or a soft brush will remove the insects, but in the early part of the year they are very tenacious of life, because the young shoots of the plant afford them support. Caterpillars will often do much damage amongst Roses in pots. They travel from plant to plant with wonderful rapidity in the night, eating the points of the young wood. The plan I pursue is to search among the plants of an evening; sometimes they are secreted in the folds of the leaves, and at others they may be found curled up on the surface of the soil.

To preserve and insure the true colour of the flowers as they begin to expand afford plenty of air on all favourable opportunities and shade as required; but as the system now recommended is not what is termed forcing, but only a slight gain on those in the open ground in respect to the blooming season, they may not flower before the month of April, or at the earliest the latter end of March.

The following list includes twelve of the most abundant-blooming and hardy-constituted varieties. I have not referred to any of the Tea-scented Roses, as their culture requires a greater amount of skill—Coupe d'Hébé, rich pink; large and double. Madame Plantier, pure white; very free bloomer. Glory of Waltham, splendid crimson; a first-rate variety. Souvenir de la Reine de l'Angleterre, a large bright rose. Paul Perras, fine, full, pale rose. Brennus, deep carmine; very free bloomer. Général Jacqueminot, crimson; very good. Victor Verdier, a first-rate free bloomer of a rosy carmine. Mrs. William Paul, a bright red; flowers in clusters. Madame Emile Boyau, soft rosy flesh colour; of a hardy constitution. Madame Charles Verdier, very sweet-scented. Prince Camille de Rohan, crimson maroon; a very rich colour.—JNO. F. McELROY.

### THE SWEET PRINCIPLE OF FRUITS AND PLANTS.

THE most interesting phenomenon connected with the growth of fruits and vegetables is the development in their structures of chemical principles which influence in a peculiar manner the sense of taste. A variety of impressions are produced upon the nerves of taste, some of which are agreeable and others disagreeable, by bringing in contact the juices of certain fruits, roots, grasses, leaves, &c., in their mature and fresh condition. The sense of sweetness is usually agreeable, while the sour and the bitter are of the opposite character.

The term sweet is applied to a class of bodies which are found in fruits and in a considerable number of vegetable structures, but we do not clearly understand how they are capable of exerting so decided and pleasurable an influence upon the palate, not only of human beings, but upon animals as well. As we walk through our gardens and orchards and watch the growth of the luxuriant products of the soil we do not often stop to consider the intricate and wonderful chemical reactions which are unceasingly taking place in everything that springs from the earth upon which we tread. We place the luscious ripened fruits upon our tables and partake of them with deep gratification, but we do not often consider the origin and nature of the complex agents which render them so acceptable.

Substances characterised by sweetness are assumed to contain an organic product called sugar, and, as a class, vegetable structures do contain it in some one of its forms. There are, however, a few substances which have a sweet taste not due to sugar. Acetate of lead is an example afforded in the mineral world, and glycerine is a sweet liquid, the base of fatty acid compounds having no sugar. There is a form called heptica sugar, which is a product of the liver, and some of the secretions of the body contain it. It is, however, in the organic world that we find sugar

in the vast quantities needed by man, and in the juices of fruits and plants we find its hiding place.

Before vegetable physiology and chemistry were understood the belief prevailed that all the characteristic constituents of fruits and plants were in some way hunted from the soil, and conveyed to their resting places by the sap, which was known to circulate through living vegetable organisms. Although no sugar could be detected in any soil by the most persistent scrutiny, yet it was supposed that sugar and its associated acid and other plant constituents were present and ready for transportation by the ascending sap. We are disposed to smile at this error of our fathers, but we should remember that, in accounting for natural phenomena, or seeking for a reason for things, the easiest and shortest path is the one usually followed. This remains true until we are guided by facts learned from accurate observation and experiment, or until science becomes sufficiently robust to act as an unerring guide.

Science in our epoch is capable of explaining many of the former mysteries of plant movements and plant production, and we now know the source of the sweet principle of fruits and plants—we know that the soil has no direct agency in supplying sugar to any organic structure.

Sugar is a very remarkable substance, and its investigation opens to view surprises and paradoxes not afforded by any other agent in nature. It is highly complex in its organisation, having a high atomic constitution, and yet it is the simplest of all compounds when considered in regard to the nature of the elements of which it is composed.

In studying the sweet principle of plants we soon discover that they possess the capability of elaborating more than one variety of sugar in their structures, and that there is a curious blending of several forms in the ripened fruits which come upon our tables. We discover also that each plant has the power of manufacturing a special variety, or a combination of varieties, and that this law of their constitution cannot be changed by man.

In Beetroots, in the stems and trunks of the Sugar Maple tree, the Sycamore, the Palm, in Sugar Canes, in the Sorghum plant, in the stalks of Maize, in Grasses, we have one kind of sugar called sucrose, which is the sweetest variety; in Grapes we have another distinct variety, called dextrose or glucose; in Apples and other fruits we have still another, called fructose or levulose; in Melons we have a sweet which is nearly pure sucrose, or cane sugar. In that vegetable monstrosity called a Beet, which is hidden from the clear sunlight and the air during the whole period of its growth, there are found juices which hold the most noble and valuable form of sugar known to man. The crimson tissues of this root contain the snow-white sugar which graces the tea tables of the kings and princes of continental Europe, and millions of pounds find their way into commerce. The humble earthy Beet can hold up its head in pride when its sweetness is contrasted with that of the petted Grape, which occupies the foremost place among our delicious fruits. The Grape is sweetened with glucose, an ignoble form of sugar which the chemist can make in the laboratory, and its production does not require the employment of costly or rare materials. Even if it lessens our respect for the tempting fruit of the Vine, the truth must be told. The chemist can make the sweet juices of the Grape from old cotton rags and old newspapers; and if this statement does not indicate a sufficiently low origin, I have only to remark that it can be made from common sawdust as well. Human art has not been able to number among its triumphs the production of the sugar of the Beet, the Maple, or the Cane. The sweet principle of fruits other than the Grape cannot be imitated in the laboratory. It is a mixture of at least two forms of sugar—sucrose and dextrose, in varying proportions.

How curious and mysterious is this plan in nature of delicately adjusting the taste of our noble fruits, so as to produce a sense of the highest enjoyment in their use. In some fruits we find the sweet to exist in its lowest modified form; but this is not due to a lessening of the amount of the sweetest sugar, but to the presence of an entirely different kind. It is probable that the peculiar delicate flavour and taste of the Grape could not be secured by any adjustment of quantity of sucrose or cane sugar, or by any mixtures. It requires glucose pure and simple to act in conjunction with the delicate acids in order that we may have this fruit in its highest perfection. The Water Melon would not be the fruit it is if it had not the capability of manufacturing cane sugar in large quantities; neither would the Apple, the Peach, the Cherry, the Strawberry, or the Pear be what they are if the plants and trees upon which they grow had not the power of bringing into play a subtle chemistry, by which is produced a mixture of distinct forms of sweets which no art of man can imitate. If there was in nature but one kind of sugar the number of choice delicacies in our gardens and fruit orchards would be lamentably small.

But Nature does not, in the bestowal of her fruits, spontaneously, or of her own free will, sweeten them for us so acceptably. What are designed to be luxuries and the most highly prized forms of food she ordains shall be bestowed only through the exercise of labour, care, and skill on the part of man. No one of the fruits in its wild or native state holds any considerable quantity of sugar of any kind—not enough to make it acceptable to the taste or fit it to serve as food. It is only by skilful cultivation, by hybridising, by budding and grafting, that we have secured the sweet principle in fruits. We have, as it were, educated the dumb chemists in the vegetable cell, and fitted them for the work which Nature made them competent to perform under man's guidance.

It is, indeed, wonderful that we can increase or diminish the amount of sugar in any kind of fruit or plant by cultivation. The Beet, for example, under ordinary care will afford from 4 to 6 per cent. of sugar; but by scientific and generous culture the per-centage can be nearly or



quite doubled. I have succeeded in increasing the sweet principle in Apples, Grapes, and Peaches by cultivation and proper fertilisation, and this when the principle was originally present in normal quantity. In increasing the sugar we also increase every other desirable quality in the fruit, for one principle cannot be forced into prominence without being accompanied by all the others.

#### HOW FRUITS ARE SWEETENED.

	Cane Sugar.	Grape Sugar.
Strawberries .. .. .	6.37	4.98
Peaches .. .. .	2.10	3.17
Pears .. .. .	62	8.42
Oranges .. .. .	4.22	4.36
Grapes (Black Hamburg) .. .. .	00	17.26
„ (Concord) .. .. .	00	14.08
„ (Green) .. .. .	00	1.60
Melons (Water) .. .. .	3.17	00
„ (Musk) .. .. .	9.02	00

The table explains how several kinds of fruits are sweetened. The percentage of cane sugar and fruit sugars which enters into Strawberries, Peaches, Pears, &c., is shown. It will be noticed that in Grapes no cane sugar is presented; the sweet principle is entirely glucose. Of course fruits vary greatly in the amount of sugar they contain. These examples are presented as the results of analysis made with the view of obtaining general or approximate results. Whilst it is possible to increase the saccharine principle, and also to modify the hydrated malic acid constituent in fruits, it is entirely beyond our power to change the fixed nature of Vines, shrubs, and trees by any methods of cultivation or fertilisation yet discovered. I know of nothing more wonderful in nature than the persistency with which vegetable structures adhere to their original design. Trees producing sour Apples, Pears, Peaches, or Vines producing astringent Grapes cannot be turned aside from their laboratory work, unless by the introduction of scions or the employment of the knife in other ways.

We all know that two trees growing side by side from the same soil, breathing the same air, and precisely alike in external and internal structure, will grow fruit totally dissimilar in chemical constituents and physical appearance. If a young sour Apple tree is cut off low in its trunk, and scions of another kind inserted, it is changed only above the point where they are placed. The chemical reactions below continue true to their original instinct, and if fruit comes from a sprout it is charged with the acid juices of the parent trees.

We thus have the bewildering fact brought before us that sap circulating through one portion of a tree culminates in the production of excess of acid in the fruit, while in another there is found an excess of sugar. It is not unusual to observe a newly set scion bud, blossom, and bear fruit the first year. The Apple may weigh ten times as much as the frail scion which held it up and supplied the nutriment necessary for its growth, but the little twig transplanted to an alien limb will set up a laboratory of its own, and from the strange juices brought to it will manufacture fruit entirely dissimilar to its companion fruits growing in close proximity. An example of this nature was afforded in my orchard, when from a scion having a surface for cell action of only 9 square inches a sweet Apple was grown weighing 7 ozs., and affording from its juices 93 grains of fruit sugar.

We have, however, still more wonderful examples of fruit chemistry in Apples, which in their own structure exhibit sectional differences of composition, one-half or one-quarter being saccharine, the other portions being extremely acid, and having the sectional lines distinctly drawn. I have seen a basket of this remarkable fruit in which the divisions were in all proportions, but each one unmistakeably marked.

I have brought to view these interesting examples of plant chemistry simply to awaken inquiry and stimulate research, that we may, if possible, obtain new light upon some most perplexing problems.—DR. JAMES R. NICHOLS (in *Transactions of Massachusetts Horticultural Society*).

#### EXTENSION OF COVENT GARDEN FLOWER MARKET.

MIDDLE-AGED people who in their young and vigorous days “did” the early market at Covent Garden as one of the recognised sights of London, say a London daily paper, no doubt will be under the impression that they have seen all that is to be seen there, and know all about it. They are under a great delusion. If for once on a Saturday morning—or any other morning of the week for that matter, but Saturday morning is the best—they will muster a little of their pristine energy and will turn out and make for Covent Garden in time to be there between six and seven o’clock, they will find a market altogether different from the one they have in remembrance. There are few things of the kind more remarkable in London than the enormous development of an interest in flowers, and those who know the head quarters of the trade only as it was twenty years ago, or ten years ago, could hardly fail to be amazed at it as it has appeared during the past spring and early summer months.

The visitor who makes his way towards it from any point of the compass between six and seven o’clock in the morning will be inclined to suspect that he is too late, and that the market has already begun to dissolve. Intermittent streams of flowers are dribbling away in all directions. Market carts are already rattling off into the suburbs with tailboards all aglow with colours that would make a rainbow ridiculous; donkeys and their barrows go tottering over the stones under burdens of blossoms that would have made sensational flower shows in days not so very long ago; small capitalists are trudging off with bundles of Stocks or armfuls of Pinks; and here and there a cab may be seen stuffed with pots of Mignonette and Lobelia, and piled up on its roof with Trumpet Lilies and Fuchsias, Pelargoniums and Calceolarias. Fleet Street and the Strand, which an

hour or two before have been all astir with the newspapers, have now subsided a little, and every now and again quite a floral procession may be met moving through the still, sleepy thoroughfare, and pleasant whiffs of Musk and Heliotropes and Roses come upon the morning breeze. The stranger is apt to think that the market must be getting thin; but as he turns up either of the streets leading directly to it the stragglers he has met appear to be altogether insignificant. A whole neighbourhood is literally choked up with flowers, the actual market being only the central point of the trade which surges through all the surrounding thoroughfares and flows out into the Strand. Wellington Street is closely packed with vehicles laden with flowers, and the buildings on each side are barricaded with them. The office of the *Morning Post* seems to be embedded in a thicket of Indianrubber Plants, Delphiniums and scarlet Geraniums; the Lycium springs from a tangled undergrowth of Marguerites and standard Rose Trees, Clematis, and Tropæolums, Cockscombs, and Antirrhinums, and the shop fronts of both sides of the way are bauked up with boxes of Golden Feather and Lobelia, Pansies, and serried ranks of the most beautiful Fuchsias. The dense growth spreads away down the narrow thoroughfares into Catherine Street; all along Tavistock Street scores of burly porters are pushing their way about with mountains of pendant bloom upon their heads; on the steps of the Strand District Offices a stalwart dealer sits and smokes his peaceful pipe, securely shut in from the surging crowd by a fortification of Strawberries and ripe Tomatoes in baskets, bundles of Watercress and pots of Ericas, Maidenhair Ferns, and the most delicate Arum Lilies. Burlington Street is quite a part of the market. St. Michael’s Church stands knee-deep, so to speak, in Ixias and Dracænas, Phloxes, and herbaceous Calceolarias; and the flood of gleaming colour spreads away right down into the Strand, where vans and carts, unable to get nearer to the central point, are packing and unpacking their treasures.

Of course this has always been a busy spot in the early morning, and these breezy slopes on the north of the Strand have from time immemorial breathed odours of Cherry Pie and Mignonette before breakfast, whatever may have been their fragrance afterwards. But no such displays of flowers as may be seen now were ever dreamed of a few years ago. It seems but the other day that flowers formed only a minor feature in the market, and that the trade was pursued beneath a number of rickety sheds on the outskirts. Only a few years ago the Duke of Bedford set up a substantial building, with a superficial area of some 16,000 feet. This we believe was something of an experiment and seemed at the time likely to meet the utmost requirements of the trade for many years to come. But we have been æstheticising very rapidly since then. Our artists have been impressing upon us the beauties of Sunflowers and large white Daisies, and Government has been setting us practical examples in the parks and public gardens of what may be done with flowers; and though our artistic censors have not yet subdued our inborn delight in crude scarlets and yellows, and our public guides have sorely misled us in their ‘prentice-hand partiality for ribbon borders and carpet-bedding, we are undoubtedly moving on in the charming pursuit of floriculture. “Flowers for the garden” and “All a-growin’ and a-blowin’,” have become familiar ditties in our suburbs. Hundreds of hardworking fellows now do a good peripatetic trade that was never thought of ten or twenty years ago, and the spacious building constituting the head quarters of the trade has long become all too small for the purpose, although there has been prevalent in this market a sort of “Box and Cox” arrangement by which two or three tenants have been accommodated at one and the same stall.

There are about 300 stalls in the existing flower market, and many of these are tenanted by those whose trade lies chiefly in certain classes of goods pertaining to particular seasons, and who only occupy their stands in those seasons. It has been the custom to let the stands at other times to casual comers, who, of course, have to turn out if the lawful occupant puts in an appearance. But, notwithstanding this multiple tenancy, the market has become wholly inadequate to the requirements of the trade, and the Duke of Bedford has pulled down several valuable houses fronting Tavistock Street and is about to extend the market right down to this thoroughfare. A certain part of the structure now in use, and which was put up as a temporary experiment, will also be cleared away and the space taken into the permanent new building, which will add altogether about 100 more stands. This will make altogether about 400 shops entirely engaged in the flower business, which is nevertheless probably even now only in its early days as regards the great mass of Londoners. Every season brings an increase with it, and the early spring and “bedding-out” trade this year has been, we understand, the largest ever known, though from the conditions of the trade it is scarcely practicable to set forth the increase in figures. There can, however, be no doubt about the increase of late years. Everything has contributed to it. The development of facilities for transport have practically brought many parts of the Continent as near to the market as the midland counties were a few years ago, and cut flowers of a great many kinds are now to be had in Covent Garden at seasons of the year which would have rendered them quite phenomenal a generation or two ago.

Various influences have been at work, too, in the development of a taste for floriculture—the planting of our parks and public gardens, the autumn distribution of cuttings, the multiplication of flower shows, the establishment of one or two popular publications on horticulture, and so forth. Year by year, as London grows, and flowers become more and more indispensable, this central flower market demands greater space for its expansion, and though the addition which the Duke of Bedford is now making to it will greatly increase the accommodation, it will apparently do little more than meet the present requirements of the trade, and in a very few years even further schemes of extension will probably be found necessary. Even now it is deemed expedient to provide for the utmost possible utilisation of the additional space, and we understand that in the leases of these new stands it will be expressly stipulated that when not actually occupied by the regular tenants “casuals” may be taken in. This, as we have said, is a custom that has long been in force, but in future lettings it is to become a matter of stipulated right instead of mere favour on the part of the tenant as heretofore. In addition to the demolitions on the ground adjoining the site of the present flower market, a further clearance has been made on the west of the narrow way leading up from Tavistock Street into the main market. It is, we are informed, not quite definitely determined what



arrangements are to be carried out at this point. Possibly the narrow way alluded to may be carried a little further westward, and the present thoroughfare taken into the flower market. It has, however, been determined to effect an important improvement on this southern side of Covent Garden, by setting back both fronts of the line of buildings lying between the market and Tavistock Street, thus at once widening Tavistock Street, and so improving the access to the market, while it will extend the actual market area by widening its southern roadway. Demolitions for this purpose are now in rapid progress.

## ROYAL HORTICULTURAL SOCIETY.

AUGUST 12TH.

THE exhibits before the two Committees were not very numerous, nearly all the available space in the conservatory being occupied by the competing collections of fruit and vegetables in the Cottagers' and Artisans' Show. The chief attraction amongst the floral exhibits were the magnificent Gladioli spikes from Langport, which furnished great brilliancy of colour. The Slough Dahlia flowers were similarly beautiful, and several smaller collections of diverse plants furnished additional subjects of interest.

**FRUIT COMMITTEE.**—Present, Mr. John E. Lane in the chair, and Messrs. John Lee, S. Lyon, J. Willard, Arthur W. Sutton, and G. Goldsmith. Several seedling Melons of little merit were shown, and no award was made for them. A vote of thanks was, however, accorded to Mr. Rutland, The Gardens, Goodwood, for two large fruits of the Goodwood Melon, weighing 17½ lbs., oval, and strongly ribbed. Mr. W. Benwick, Redhill, sent a peculiarly malformed Cucumber, strangely twisted, and with the petiole of the leaf springing directly from the middle of the fruit. Mr. H. Herbst, Richmond, showed a dish of a brightly coloured oblong Tomato, named King Humbert, which was considered by the Committee to be the same as Chiswick Red, or too near it to merit a special award. Several Apples were also sent for name. At a recent meeting at Chiswick first-class certificates were awarded for the following Peas, of which descriptions have not yet been obtained:—

*Pea Bliss's Abundance* (Howcroft and Watkins).

*Pea Magnificent* (H. Eckford).

*Pea Early Paragon* (Sharpe & Co.).

**FLORAL COMMITTEE.**—Present, Section A.—Dr. Masters in the chair, and Messrs. John Laing, F. R. Kinghorn, H. Herbst, John Dominy, and E. Hill. Section B.—Shirley Hibberd, Esq., in the chair, and Messrs. J. Douglas, W. Bealby, G. F. Wilson, J. James, and G. Duffield.

The Gladioli from Messrs. Kelway & Co., Langport, Somerset, were superb, the spikes of great size, the flowers large, with broad substantial petals most diversely, delicately, or brightly coloured. Many grand collections of these handsome flowers have been exhibited by this firm, but their contribution of Tuesday last was undoubtedly one of the best they have staged in London. About 130 spikes, mostly different varieties, were staged, and they were well arranged, so that their colours were either strikingly contrasted or pleasingly harmonised with each other. Of so many that were good it is not easy to make a small selection, but the following were prominently attractive owing to their rich colours or massive blooms:—Marshal Bazaine, scarlet with a yellow centre and mauve stripes; Electra, white with rose and crimson streaks; Earl Airlie, salmon scarlet; Lord Powis, white with purple stripes; Sir S. Northcote, brilliant scarlet; Augustus, white with a central blotch of crimson in the lower petal; Mrs. Dombrain, very delicate and pretty, pale creamy or pinkish white; Pictus, salmon red, crimson-streaked; Duke of Teck, white, blotched and streaked with crimson; and Lady Carrington, which was certificated, and is described with the other plants so honoured. A silver-gilt Flora medal was awarded by the Council for Messrs. Kelway's beautiful collection.

About seventy blooms of Show and Fancy Dahlias, but chiefly the former, were exhibited by Mr. C. Turner, Slough, and were throughout of remarkable merit. The flowers were distinguished by that smoothness of form and clearness of colour which invariably characterise the Slough Dahlias as well as other florists' flowers, and a large number of the best varieties in cultivation were represented in the stand. A seedling Fancy variety was shown under the name of General Gordon, the blooms of which were of great size, a trifle loose perhaps, but of a most peculiar colour—yellow with claret or pale crimson streaks. A vote of thanks was accorded for this contribution.

Mr. C. Noble, Bagshot, sent a box of Clematis flowers, including some fine examples of the white Jackmanni, very pure and of good form. Ascotensis, deep purple; Lady Bovill, purplish lilac; Star of India, crimson purple, with a bright central bar in each division; and Proteus, a very floriferous pale lilac variety, which is said to bear unusually large flowers in the spring, were the most noticeable of those shown. The New Plant and Bulb Company, Colchester, had an interesting collection of hardy flowers, amongst which the following deserve special mention. Montbretia crocosmæiflora with fine tubular scarlet flowers; Montbretia sulphurea, bright yellow; Tritoma nobilis, large and handsome, of a bright coral red; Crinum Moorei, bearing several of its delicate blush-tinted blooms; Eremurus Olga, fine spikes of its white pale pinkish blooms, each division of which has a dark central line that with the yellow ovary gives the flower a very pleasing appearance; Littonia Keitzi with shining green tapering leaves and bright orange-coloured flowers. Specimens were also sent of the Orchids Cattleya Gaskelliana grandis, which has handsome pale rosy purple flowers, and Scuticaria Steeli, which has pale yellow flowers spotted with maroon.

The single Dahlias contributed by Mr. T. S. Ware, Tottenham, formed a charming contrast to Show varieties from Slough. Repeated careful selections from great numbers of seedlings have gradually enabled Mr. Ware to obtain a collection of unsurpassed beauty both in the shape and colours of the flowers. The tints are particularly rich and varied, and they never appeared brighter or more telling than on this occasion. Six boxes were filled with blooms, and the award of a bronze Banksian medal recognised their merit. Mr. Ware also had a box of blooms of a fine yellow self Antirrhinum named Yellow Dwarf.

Amongst numerous smaller exhibits for which votes of thanks were awarded were the following:—Messrs. C. Lee & Co. showed a basket of Statice floribunda, very compact in habit, with abundant lilac-blue flowers. Mr. Noble sent flowers of four species of Spiræa, very beautiful—namely,

S. Douglasii, with large bright rosy spikes; S. Nobleana, with flatter panicle-like clusters of pale rose blooms; S. callosa, similar, but paler; and S. Lindleyana, with white flowers and large pinnate leaves. Three handsome cones of Picea nobilis were also sent, and a small one of Pinus parviflora. H. H. Smee, Esq., The Grange, Wallington, exhibited a plant of Tropæolum aureum flore-pleno, a free-flowering variety of semi-climbing habit, having double yellow and crimson blooms. A Lycaste Deppei was also sent to show a variation, one flower having dark sepals and the other nearly white. Mr. J. Keene, Englefield Green, showed a collection of double Hollyhocks, rather small, but of fair colour. G. F. Wilson, Esq., Weybridge, sent flowers of Govenia fasciata, white, with a few fine dots. It is an American terrestrial Orchid, but little known in gardens generally, through not wanting in attractions. Mr. Bealby, Roehampton, had a plant of the double white Zonal Pelargonium Blanc Parfait; and Mr. H. B. Smith, Ealing, showed flowers of Carnation James Veitch, a pale yellow self with fringed petals.

Messrs. H. Cannell & Sons, Swanley, showed some flowers of the beautiful Tigridias, conchiflora being yellow with red spots; alba, creamy white with crimson spots; and pavonia, scarlet and yellow with heavy dark spots. Messrs. J. Veitch & Sons sent several choice plants, including Rhododendron Crown Prince of Germany, reddish scarlet, large flowers in a rather loose truss; and Curcuma sumatrana with bright green prominently ribbed leaves, and a spike of imbricated reddish tracts, in the axils of which appeared the yellow flowers. Mr. King, Rowsham, showed several Tuberous Begonias of dwarf habit with Coleuses, one of which was certificated.

First-class certificates were awarded for the following plants:—

*Ixora Westi* (Veitch).—A hybrid between I. odorata and I. amboinensis. The flowers are long, of a pale coral pink hue, very distinct and delicate, and are borne in full trusses. It is free in habit, and altogether a most desirable variety.

*Tigridia Pavonia alba* (Messrs. H. Cannell & Sons and the New Plant and Bulb Company, Colchester).—A most beautiful variety of the well-known Tiger Flower, from which it differs in having a creamy white ground with numerous heavy crimson spots.

*Lælia elegans superbissima* (Sanders & Co).—A variety which well merits its eulogistic title. The sepals and petals are narrow, tinted with pale purple, the lip being of an intensely rich crimson magenta, brighter in the throat.

*Coleus Countess of Dudley* (Mr. G. King, Rowsham, Aylesbury).—An exceedingly handsome and distinct variety with bold leaves, deeply crenated, bright green, having a broad central vein of gold, and smaller lateral veins of a similar colour. A valuable addition to the really effective and useful Coleuses raised by Mr. King.

*Montbretia elegans* (New Plant and Bulb Company).—This differs considerably in the flower from the other Montbretias, and is easily recognised. The flowers are small, scarlet at the base of the tube and yellow at the upper part, and are borne in freely branching spikes.

*Gladiolus Lady Carrington* (Kelway).—Several spikes were shown of this variety, which at once attracted attention by their soft blush or pale lilac-tinted flowers. The petals are large and round, forming handsome symmetrical blooms and dense massive spikes.

A vote of thanks was accorded to Mr. Goldsmith, The Gardens, Hollenden, Tonbridge, for a branch of Passiflora quadrangularis bearing six fine flowers, one from each node, and it is seldom this handsome species produces its flowers so freely.

## THE COTTAGERS' SHOW.

This proved in all respects a wonderful success, there being over 700 entries, and the quality of the exhibits generally was most satisfactory. In some of the classes the competition was extremely keen, as many as forty exhibitors entering in some of them, especially those for Potatoes, which formed a really fine display. Onions, Beans, and Peas were also well represented, collections of vegetables and small fruits being in similar strong force. The only class which could be termed a failure was that for a collection of fruit and vegetables, in which liberal prizes were offered for competition amongst local horticultural and cottage garden societies or allotment holders. This did not seem to have been understood, as, although six prizes were offered, there were only two competitors.

The exhibition was a thoroughly representative one, for there were entries from the majority of English counties as far north as Cumberland, and the uniform merit of the productions afforded most satisfactory evidence of the attention given to vegetable and fruit culture by cottagers.

## TWO NOTTS NOTES.

I HAVE been trying for some time back to get a few minutes, so that I might give you a note or two from Notts; but the rush of the summer's work—that perpetual lawn-mowing and tennis-ground preparing, those everlasting weed subduings, the periodical seed-sowings, added to the general tittivating of the whole place, and a nuisance of a hay harvest coming on the top of that, taking one's labour for the best part of every working day for three weeks or a month, that too at the very height of the season. All these things have so filled my hands with duties, my head, with cunning plans whereby the work could be all done and things kept going right, and one's tongue with growls and grumblings audible and inaudible, that there has not been either spirit to write or time to do writing in.

The first note I must make is on our Notts Horticultural and Botanical Society's Summer Show, and such a show, or rather such weather! The first day of the Show was the wettest day of the present season, July 9th. It rained all day or thereabouts, and rained the hardest just when the most money should have been coming in. Even you, Mr. Editor, who are accustomed to moving spectacles and therefore somewhat callous, would have been moved to tears almost, certainly to the deepest sadness, to have seen the officers of the Society on that first day of the Notts Horticultural and Botanical Society's Show in Mapperley Park, Nottingham. They were objects of the tenderest pity as they moved about with macintoshes on and shoulders up, and feet slish-sloshing in the wet grass as they kept



Miss Eames, Frome; Miss Mitford, Fromefield; Miss Holroyd, Miss Moon, Mr. W. E. Stickler, Mr. H. F. Moore, and other ladies and gentlemen were deservedly successful. A grand group of fine-foliaged and flowering plants was arranged, but not for competition, by Mr. W. Pratt, gardener to the Marquis of Bath. Mr. Browne, nurseryman, Beckington, also sent a considerable number of decorative plants, and J. Baily, Esq., had a supplementary group of similarly useful conservatory plants. There was but one exhibitor. Mr. H. Haley, Frome, for the liberal prizes offered by Miss E. A. Ormerod for the best collection of insects destructive to food plants, and this, though very instructive, was by no means complete. Mr. W. F. Moore was the Honorary Secretary, and to his exertions from the commencement much of the success is due.



#### KITCHEN GARDEN.

*Globe Artichokes.*—All the early heads of these are full grown now and inclined to flower, but it is no advantage to allow them to do this, and the most profitable way of treating them is to cut them all, leaving only the small heads to come on, taking away all the dead leaves and giving each plant a soaking of clean or liquid manure. This will induce them to make fresh growth, and the late heads will soon swell to a useful size. As a rule we cut our earliest Globe Artichokes early in May, and by taking them in hand now we manage to keep the supply up until October at least.

*Potatoes.*—Where the stems of early sorts have died the tubers will be perfectly ripe, and nothing will be gained by allowing them to remain in the soil. Advantage should therefore be taken to dig them up when the weather is fine and the soil dry, and fill the ground with winter crops. The very best of the tubers should be stored where there is no chance of their becoming green, as this spoils their flavour; but the second-sized ones, which are very suitable for seed, may be put to one side for this purpose. We always take the precaution to select our seed Potatoes at digging time, and find it a much better plan than trusting to make use of what may be left over in the general heap in spring for this purpose. Seed Potatoes are benefited by being "greened" a little before storing, and this can easily be accomplished by allowing them to lie on the surface of the ground a few days after digging.

*Asparagus.*—The stems of this are now fully grown. We have many of them 6 feet high, and where they have grown so well as this they are very liable to be severely injured by wind. All the strongest and tallest of the stems should be staked and tied firmly at once. A stake may be put to each plant, and the whole of the growths be tied in together to this, or the very finest of the growths may have a stake each. We always regard staking and tying Asparagus growths as well-spent labour.

*Spring-sown Onions.*—These are now bulbing freely, and promise to be a good crop, although not so early as we have had them. As a rule all plantations are kept well cleared of weeds early in the season, but the same cannot always be said at this season of the year, although it is a great mistake to allow the ground between the rows to become very weedy at this time. Indeed, it is just now that the bulbs require most sun, and no weeds or anything else should be allowed to obstruct the sun from them. Clear the Onion quarters at once, and those with very thick sappy necks should have them twisted round and pressed down to stop the flow of sap, promote development, and induce maturity. Autumn Onions have grown splendidly this season, but they are fully grown now, and many of them show signs of splitting, but this they should not be allowed to do, as it spoils them for keeping. The whole of them must be drawn up and laid out in the sun to dry for a week or so before storing away.

*Earthing-up Celery.*—The earliest plantations will now bear earthing up, and where quantities of it may be wanted in September and October it is fully time to blanch it. Begin by stripping off all the smallest and shortest of the outside leaves, then tie the largest and tallest firmly up together to prevent the soil going into the centre. The soil on each side should then be broken very finely and work it in between the plants. We generally put it carefully amongst them with a spade, and afterwards press it firmly around the plants with the hands. Strong plants may have as much as 6 inches of soil placed to them at once.

*Carrots.*—Where these are almost fully grown, but are now being affected by "the worm," lift them, select the best, and store them for winter. This is the only way of saving them. Brussels Sprouts and all kinds of winter greens should now be fully exposed to the sun, as it is during the next two months that their chief progress must be made. All planting and sowing must be done on a wider scale now than during early summer.

#### FRUIT FORCING.

*Figs.*—*Early-forced Trees.*—Early-forced trees from which the second crop of fruit has been gathered will require cool dry treatment to insure the proper ripening of the young shoots; and when this has been secured the roof lights, if moveable, may be taken off for a few weeks, taking advantage of the opportunity to have them repaired and painted. The exposure of the trees to dew and rain will cleanse the foliage, but it will not be sufficient to keep down red spider, which must be dislodged from every part of the trees, and, if necessary, an insecticide must be applied.

*Succession Houses.*—Trees ripening their second crops will require careful treatment as the days decrease in length and the nights become cold and damp. The fruit as it approaches ripeness will be improved in colour and quality by full exposure to the light and a free circulation of dry warm air by day and night; but anything approaching to a sudden check must be avoided by keeping the roots regularly supplied with tepid water, applying it on bright mornings, as the liberal admission of air will then carry off superfluous moisture, which would otherwise condense and injure the fruit. As growths which have reached the extremities of the trellis become cleared of fruit and successions require more room, the former may be cut away to let in air and light, but nothing will be gained by tying them down too closely, as an upward tendency favours the ripening of the points of the growth, and care should be taken not to have the growths too thick.

*VINES.*—*Early Houses—Lifting.*—If the lifting or partially lifting and relaying the roots in fresh material have not been carried out, no time should be lost in having it effected, as success greatly depends on the formation of new roots before the leaves fall. Where this operation was performed at the close of July and the Vines have been carefully syringed and shaded, the crisp appearance of the lateral growth will show that the roots are taking freely to the fresh compost, and, one or other of the borders only having been disturbed, the ventilators may be thrown open in order to assist in hardening or ripening the wood. Where the Vines have been wholly lifted it may be necessary to keep them rather close some time longer. It is well to encourage lateral growth, consequently root-action, by an occasional syringing on fine evenings, allowing the laterals to spread until the middle of September, when growth should be checked by shortening back preparatory to the autumn pruning.

*Houses Cleared of Fruit.*—Shorten back all semi-extension and lateral growths from Vines devoid of fruit, carefully preserving the old leaves as the work is carried on, and water thoroughly on fine evenings with water from the garden engine to cleanse the foliage from dust and insects. Let inside borders have sufficient water to keep the soil moist in every part quite down to the drainage, and protect the outside border surface roots with a top-dressing of fresh loam and crushed bones.

*Young Vines for Forcing.*—Young Vines that were started early may soon be divested of all laterals to induce rest. Syringe occasionally to keep the old foliage healthy and clean, closing with a dry sun heat every afternoon, and throw the ventilators open through the night.

*Muscats and Late Grapes.*—Those now ripening will require more light and air, but if red spider has injured any of the first leaves a covering of laterals should be retained for protecting the bunches from the direct rays of the sun. Black Grapes as a rule colour best with a fair spread of foliage above them, but white Grapes, and especially Muscats, will gain more colour and higher flavour when having as much sun as they will bear without scorching.

*Late Hamburgs.*—These will soon be colouring, and if there be any necessity for water it should be given thoroughly—a good soaking in the early part of the day, and where the Vines are carrying a heavy crop some tepid liquid will help them. Only check lateral growth to prevent overcrowding and too dense shade, and admit air freely on fine days.

*Houses of Ripe Hamburgs.*—Where it is necessary to keep ripe Hamburgs for any length of time they will require shading during the day with all the air that can be given, and atmospheric moisture obtained by damping the floors in the morning in hot dry weather in order to keep the foliage in good condition.

#### PLANT HOUSES.

*Roses.*—Hybrid Perpetuals that were forced into bloom early in the season and have been standing or plunged outside should now be repotted. It is a great mistake to leave them in the same pots year after year, or growing amongst the same soil, and rely upon feeding, for the purpose of supporting or sustaining the plants in health and vigour. This operation should be done at once, and not deferred until late in the season, when the plants afterwards have not time to become thoroughly established before the winter. If they are repotted now large quantities of roots will be made in the new soil; in fact large numbers of roots will have reached the sides of the pots before winter, and the plants be in a suitable condition for starting freely and early into growth when required to do so. The plants should be turned out of their pots and the old exhausted soil worked carefully from amongst the roots, destroying as few fibres as possible, until the ball is reduced to half its original size. The plants should be again potted in the same, larger, or a smaller pot, according to the health and strength of the plants. When potting, the soil must be in a proper state for moisture, neither wet nor dry, and must be worked amongst the roots, not merely crammed into the pots, as too often is the case. The pots should be liberally drained, as Roses require abundant supplies of water during active growth. Roses do not require large pots, and no greater evil exists than that of placing large quantities of soil about the roots of these plants that will not be occupied during the season. Pots of moderate size only should be used, and the soil pressed into them as firmly as possible, so as to induce the formation of fibry roots and sturdy growth. Roses in pots seldom do well when potted lightly, for they are always either saturated with water or they are dry, two conditions that should never exist, for they cause spring mildew and other diseases. Use a compost of rich fibry loam, a seventh of decayed manure, and a little sand if the loam is of a heavy nature, and a 6-inch potful of bonemeal and the same quantity of soot to each barrowful of soil. After the plants are potted they should, if possible, be plunged outside in coal ashes or any similar material, entirely covering the pots an inch or two



deep to prevent watering and evaporation. The plants should be syringed three or four times daily at first, and the surface of the plunging material kept moist. Seldom under this treatment do the plants require any water, unless a long spell of dry weather follows. The plants must be examined occasionally in order to ascertain that they are not likely to suffer. The longer plants can be kept without water after potting the better, and by plunging the pots a uniform condition of moisture is maintained at the root, and those who have not practised this system will be surprised at the number and quantity of roots formed in a short time.

*Tea Roses*.—Plants that flowered last winter and early spring and then rested for a time in a cool house and were afterwards brought into flower again under cool conditions, continuing up to the present time, have been stood outside. They should be potted the same as the Hybrid Perpetuals, and treated exactly the same afterwards. Early the following month they may be partially pruned back, and the quantity of active roots made will induce them to break freely into growth. These, if housed at the approach of frost, or as soon as the nights turn cold, will maintain a supply of bloom if kept in a night temperature of 50° to 55° until the end of the year. Plants that have been standing outside for two months will, if liberally syringed, burst into growth and produce, as well as the young plants propagated for the purpose as advised, and now growing under glass in 6 and 7-inch pots, a good supply of blooms during the autumn when they are scarce outside. All blooms should be removed as they appear from plants intended for autumn, winter, and spring flowering.

*Amaryllises*.—Plants that flowered early will have made a good leaf-growth, in fact completed it for the season; and if shaded in any way while making their growth it must be discontinued, and the plants grown in the full blaze of the sun. The secret of growing these beautiful bulbous plants is to develop a sturdy leaf-growth, and then thoroughly mature and ripen their bulbs. The successful cultivation of these plants is yet imperfectly understood, the foliage being drawn up weakly in heat and shaded from the sun. A little shade during the early stages of growth is beneficial, but as soon as this is completed they must have abundance of light and air to mature and solidify the bulbs. These plants must not be rested prematurely by drying them. This is a great mistake, for they should never suffer by an insufficient supply of water, and they should be liberally fed until they naturally show signs of resting, when water may be gradually withheld until none is really needed.

*Hydrangeas*.—To have plants for decoration in 5 and 6-inch pots not more than 1 foot high with a large truss of bloom on the top, cuttings must be selected at once from plants established outside in a sunny open position. Those tops only should be selected for the purpose that have set their flower buds, taking them off as near the top as possible, where the wood is soft, as they do not strike root freely when the wood is firm. These should be inserted singly in 3-inch pots in sandy soil, and rooted without pushing them into growth. This can be done by placing them in handlights and keeping them close in a cool house, or better still by plunging the pots in slight bottom heat, while the tops are kept cool and shaded from the sun. As soon as they are rooted they must be removed at once to cool quarters, gradually hardened, and finally placed outside until the approach of frost, when they should have the protection of a frame, frost being excluded. Do not allow these young plants to suffer at the root by the want of water. They can be forced into bloom in batches, and as soon as growth commences they can be transferred into the pots named above.

## THE BEE-KEEPER.

### SEASONABLE NOTES ON BEES.

THE second spell of almost tropical heat and fine brilliant weather will in a few favoured localities commence a second honey harvest. This will only be the case in Heather districts. In all other parts the true honey harvest ended with the month of July. From what we gather from various parts of the kingdom the past month and its predecessor were such as bee-keepers will ever remember as a glorious time for bees and their owners. Where there are no purple stretches of flowering Heather the bees will now quiet down into their winter quarters, eking out a living from the few flowering plants that may yet bloom from now until October. They are very merry among the Beans, and are always to be seen on the flowers of Sweet Marjoram and Garden Thyme, which are still in bloom. Bee-keepers should by all means be prepared to feed bees should a season of rain and wind set in, and we still hold it to be most important to see that all stocks are gently fed to promote or rather to continue autumn breeding. We would feed gently well into September, so that the last batches of brood are hatched out before October begins. We are writing of what we do, and would advise others to do in England, more especially in the southern and midland districts. The same systems which prevail and are found to be successful here may not be applicable to a more northern clime.

Bees begin their labours later and cease them earlier in the year by a month or more under the influence of a Scotch climate than they naturally do in our more sunny south. Therefore, when bee-keepers see teachings in this Journal which apparently are at variance with others, they must take it into account that they are written by men living hundreds of miles apart, and they must use their own knowledge of the requirements of their own particular locality before they proceed to follow any hard-and-fast rule.

South of London we rarely have any wintry weather before December, and with hardly an exception we have found during the last ten years that bees may with safety, and much to their benefit, be stimulated until early in September. We have had some of the best stocks we possessed made up of driven condemned bees at Michaelmas and fed late into November; but this was a matter of necessity, not of choice. Speaking of condemned bees leads us to advise all bee-keepers to obtain as many as they possibly can. We always find owners of skeps very ready to accept a shilling for each lot of bees, we driving them and delivering the hive and comb safely to the housewife.

At the risk of being said to be constantly strumming on one string, we will tell how we proceed to drive bees from condemned skeps. We like to choose a calm fine day, and to do the work early in the afternoon. We take as many empty skeps as there are hives to be driven, and one more, if the owner has not a spare skep. A few puffs of smoke and a sharp tapping all over the hive to be operated on is our first announcement to the astonished bees. We then prepare our quarters under the shade of a tree or in a shed, by placing a zinc pail on a table or any elevated spot. It is rather back-breaking work to stoop while driving, perhaps, half a dozen stocks, so we always extemporise a table. An empty skep is put at hand and the smoker replenished. We always take with us also a bottle of syrup, and it is often very useful, especially when little honey has lately been collected and uncertain weather prevails. It is very easy to drive bees, in fact to do anything with bees without a veil, but we always wear one when we can. A sting in the eye is no joke, and it is ridiculous to try to teach cottagers that one does not get stung. Perhaps we may drive a dozen times and not get a sting, and then the time comes when from some unforeseen cause one has half a dozen pointed objections. So wear a veil. As to the hands, well, that does not matter; bees hate gloves, and so do we when manipulating them.

In far less time than it has taken us to write all this our first lot would have been driven. We should have fetched the stock, bottom upwards, to the table and stood it in the pail. If the bees are in a hurry and try to "boil over," a puff of smoke sends them back. A double skewer is fitted to the empty and full skeps, so as to form a hinge, and two other skewers prop up the empty hive at a convenient angle to see what is going on within. A little tapping with the open hands has soon set the bees on the march. We cause the earthquake to proceed according as the bees run, driving them from the various parts of the lower hive by the changes in the position of our hands. When we lifted the full hive from the floorboard we well sprinkled the bees and combs with the syrup, and they soon had all gorged and were ready to beat a retreat. If a few bees still cling to the combs after the bulk is up we leave them, throw a sack over the driven hive, and having placed the bees on their old stand and knocked out those which had been examining our spare skep, which we forgot to say we placed where the stock was lifted from, we allow them settle down and proceed with the next hive. When all are driven we lift off the sacks, shake the bees off in front of the hives, and get out with a goose quill any few bees which may remain still. We then leave all quiet until dusk, when wraps, in the shape of canvas of an old tablecloth, are taken. Each cluster is gently lifted on to its sheet, tied up, and taken bottom upwards to our own garden.

All bee-keepers who intend utilising driven bees should now put aside for them as many drawn-out combs as can be spared from their stocks. When contracting the hives there will be many to spare this year, some well stocked with honey. Two swarms of driven bees joined will make a good stock. If it can be known which of these have young queens, it is well to capture the old one, destroy her, and allow the young queen to head the colony. We never have the slightest difficulty in joining driven bees, nor in stocking bar-frame hives with them. The frames with comb in them if possible, and if not with full sheets of foundation, should be arranged in the hive. The quilt should be evenly adjusted and then folded back again, exposing, say, three frames. These should also be separated to farther than their proper distance, and the dummy also drawn well back. The hive is placed in its position with the entrance slides fully open. We then take the two swarms, stand them on each side of a zinc



pail. We have the old queen caged and hanging in the top of the skep containing her swarm. The pail is well sprinkled with syrup scented with a few drops of essence of peppermint. Then with a quick sharp shake (more of a let-go and a catch) we deposit one lot of bees in the pail and the next moment toss in the others. We take up the pail, shake, and pour the bees all together into the back of the hive, drawing the quilt over. In ten minutes the quilt may be lifted gently at the back and shaken, when bees adhering to it will be cast between the frames; the frames can then be drawn close or nearly close together, and the dummy moved up. If many bees are against the dummy next morning will be as well to adjust it, when all the bees will be clustering in the frames and comb-building. The old queen is taken from the cage and killed. If new stocks are not required the driven bees can be joined to other hives by first well sprinkling the occupiers with scented syrup and giving them a few puffs of smoke, and then casting the driven bees similarly scented on the top of or behind the panes.—P. H. P.

## BEES.

### CURE FOR STINGS.

MANY people are of the opinion that after they have been stung repeatedly they become inoculated and do not suffer thereby, the virus ceasing to take effect on the system. As that is not the case with everyone that has come within my experience I cannot endorse it, neither can reliance be placed on the efficacy of many of the so-called remedies. With most people, beyond the inconvenience of a swollen face and the slight irritation at the first, stings do not otherwise trouble them; but to some people stings cause much suffering, and are really dangerous from the effect the poison has upon the blood and nervous system. I am acquainted with many such, and who, though stung often, have never become inoculated. With all such persons none of the nostrums so often recommended alleviates the distress of the patient. It is to such serious cases that the medical faculty should turn their attention, and if possible find a cure to be made public. I have already stated the benefits to be derived from perspiration and sal volatile; since I wrote that I have had to deal with several serious cases, in which the patients swelled up in but a few seconds after the sting, breathing with great difficulty, and were otherwise seriously ill. In both cases while inducing the patient to perspire, camphorated oil was applied with friction to the chest and throat, which gave immediate relief. If such a thing as a cure could be discovered it would prevent hysteria in some, and encourage many to keep bees who do not by labouring under the terror that a sting might cause death.

### TAKING BEES TO THE MOORS.

I have just returned after a successful fifty-miles journey with my bees to the moors, and am able to report on the prospects. Not only do the grouse look strong, plentiful, and healthy, but the Heather is both earlier than usual and is very promising, so that there is game for the sportsman and honey for the bee keeper if but two weeks of fine weather occur during this month. All our hives being full in the body, supers will be taken at once. As matters stand we anticipate a large harvest. For nearly a week before leaving the weather was delightful, honey was carried in in abundance, which with so much newly gathered honey made it very risky to move bees, but by depriving them of all filled and partly filled supers and giving ample ventilation both above and below, I had not a single mishap. Should the weather keep fine for one week I shall require to visit them with a supply of empty supers, as the single cover with such strong hives will be full. Owing to the early deposition of nearly all our old queens I was not put to the trouble of joining young ones at this season; but as I have some young ones in nuclei in reserve will depose the queens that have bred most during the summer, and join these young ones after they are brought home.

As I have most faith in those hives on the Stewarton principle giving most supers, I shall add a second or third super on the top of all whenever the under supers are well begun, and if I had had body boxes filled with comb I would have given a fourth one underneath. This would give the bees ample store room for as much honey as would fill a super after honey-gathering ceased, which is only successfully done with hives on the Stewarton system, and is one of the ways to utilise combs and bees at the proper season with the greatest advantage to the bee-keeper.

I am pleased to see and hear of so many bee-keepers exercising their own judgment in apiculture, putting to test the different hives and systems, and I hope bees as well. This carried out in

a spirited manner will benefit both themselves and others more than volumes of desultory discussion. As the honey season will soon be over, bee-keepers who have been troubled with brood in the supers should take the first advantage to have their hives made larger in the breeding compartment for another year, as small hives cause brood in supers, and are never remunerative. The bee-keeper should initiate himself to the requirements of the bee more than making a change from one kind of hive to another, which is not always profitable.—A LANARKSHIRE BEE-KEEPER.

### DRIVEN BEES.

I HAVE always been fortunate enough to secure a good supply of driven bees for the trouble of driving them for the cottagers in my neighbourhood, and I thought perhaps the plan I adopt in uniting them might be of service to your querist Mr. John Bulbeck on page 107. Having ascertained how many stocks I have to drive, I open one or more of my bar-frame hives and shake off all the bees from three of the frames from each stock. These I place into a hive—frequently a makeshift or swarm box—and put my driven bees on to these three frames, and stand them as close as possible to the stock in bar-frame hive to which I wish to unite them. I then feed both the stock in the bar-frame hive and the driven bees on the three frames with scented syrup for a couple of days. I then smoke both lots, and having removed the queen that I consider the least value I lift the three frames with the driven bees adhering back into their original position, and having shaken the few bees out of the swarm box or makeshift hive, remove it, and, unless the stock is short of food, discontinue feeding. I may add I have proved this for four seasons without a single failure, which I cannot say of any other plan that I have tried, and hope it may be of service to many of your readers.—J. P. S.

### LIGURIANISING.

THE following extracts, taken from a letter which I have just received from a correspondent whom I have known as one of the most successful apiarians of the day, may not be without value to the apiarian readers of this Journal who intend ligurianising their apiaries. The facts speak for themselves, comment is superfluous.—AUTHOR OF "BEE-KEEPING, PLAIN AND PRACTICAL."

"I have had a very poor summer indeed. I was foolish enough last autumn to be persuaded to italianise, which I am sorry to say was done. I have thirty-six stocks and swarms of Italians, and I don't think I shall get as many pounds of section honey from all of them, and such a summer too. I have some blacks, and the contrast in super honey is amazing. . . . I intend to make blacks my bee for the future. . . . I have often thought what a pity it is that some of our authorities puff the Italian bee so much. I have proved that they are not to be compared to the English bee, and you can manipulate the English so much better. . . . Some Italian bees I have are the fiercest I ever had to deal with; they can be smoked as much as you like, but they will sting."

### EXTRACTING HONEY AND MAKING WAX.

WILL you kindly tell me how to separate the honey from the comb, and how to make the comb into wax; indeed, how to manage the whole thing, and greatly oblige? I am quite a stranger to bees.—ANNE.

["Anne" wishes to know how to separate honey from the combs and how to make the combs into wax. With fine samples of comb from the body of hive and supers, rejecting all pieces containing pollen or brood, take a knife dipped in warm water and uncap every cell, first the one side then the other. If the honey is very thick, as is the case this year, to insure the entire dripping the combs may require shaving down to the midrib. Combs and honey are allowed to drop into a basket suspended between two chairs, or from the ceiling, having a muslin bag carried round the basket so as to catch all the drip, terminating in a point from which the honey drops into a vessel beneath. Avoid much handling or squeezing the combs with the hands. In oldish combs where the honey is thicker the honey does not so readily part from the combs as in the more delicate ones from supers; with such a screw press with very narrow perforated cylinders is good, in which the combs are first pressed with a rammer, then when full placed under the screw almost every drop of honey is pressed out in all its purity. A capital drainer for honey as well as for other things required for domestic use, and what I use, is a wooden case containing cylindrical brass wire sieves of different mesh, through which the honey, after it has been poured into the uppermost one, passes from the one to the other until it drops into a muslin or peaked net bag, then from it into a jar. These sieves do not clog up, neither do they overflow, are cleanly, and obviate the soiling of many dishes.

When the honey is all extracted the combs may be steeped in clean water, then washed to separate the remaining honey, which may be either made into mead or beer. The combs are now ready to be "made into wax," or, rather, the combs are in a state for separating the wax from the other dross. This is done by heat, which, I may add, destroys some of the properties of wax, rendering it brittle. When there are very little combs, not more than that from two or three hives, and a fine sample wanted, I put these into a tin inside another, both having a sufficient quantity of water placed upon the fire until all the combs are softened and ready to melt. I then place a perforated piston or dish on the top



and press down a little, when the wax rises to the top in a pure state; this gathered and again melted in a double vessel may be poured into any mould after the latter has been steeped in water. Where large quantities of combs require melting the Swiss wax-extractors sold by Messrs. Neighbour & Sons are the best extractors I have used. A very simple plan is to tie all the combs into a bag with a weight, then put into the boiler; the wax oozes out and rises to top of water in a cake when cool, which may be remelted. This process, however, though recommended by many, deteriorates the quality of the wax. Heat has the same effect upon honey. So when the quality of either is to be retained never subject them to heat more than is necessary.—A LANARK-SHIRE BEE-KEEPER.]

#### TRADE CATALOGUES RECEIVED.

W. Cuthush & Son, Highgate and Barnet.—*Catalogue of Bulbs.*  
B. S. Williams, Upper Holloway, London.—*General Bulb Catalogue.*



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Onion Unsatisfactory (G. S.).**—Owing to the very hot weather the tops were quite dried, but they appear to have been attacked with the fungus *Peronospora Schleideniana*, which is very destructive in some seasons and districts. As your Onions are ripe, at least those before us are, we should dry them at once, and remove and burn the tops. The bulbs, though small, will probably keep well. We can only advise you to sow next year in a plot as far distant as possible from the site on which the crop has been grown this year.

**Carrots and Wireworm (Idem).**—Gas lime spread between the rows of Carrots now will be of no benefit. It is useful against wireworm when dug into the ground in the autumn. We know a large garden from which the pest has been banished by the judicious use of gas lime at the period indicated. In sowing Carrots next year we should make deep and wide drills and fill them with wood ashes, and in this material sow the seeds. The greater the bulk of ashes the less in all probability will be the Carrots infested. If the ground be saturated now, and Early Nantes Horn Carrot seed sown, small clean useful roots will possibly be produced in late autumn.

**Keeping Hot-water Pipes Clean (F. J.).**—Scrub the pipes well with hot soapsuds and soda, then when dry dress them with a mixture of lamp black and linseed oil, repeating the application as often as may be desirable to have them "always clean and neat." Clean pipes add much to the good appearance of the house in which they may be prominent.

**Old Primulas (Idem).**—We have had excellent two-year-old plants, but they seldom grow and flower well for three seasons. Trim off all the flower spikes and dead and dying leaves, then turn the plants out of their pots removing all the loose soil that comes away freely without seriously injuring the roots. This will be mostly in the upper surface of the ball; then rectify the drainage if needed, and add fresh soil. If the roots are not very numerous and half the soil is removed the plants can be replaced in the same pots; but if there is a dense mass of roots and but little soil can be removed they may be placed in larger pots. A compost of loam, leaf soil, and wood ashes will suit them well, and the pots may be stood on ashes in a shaded position in the open air, or in a cold frame with the lights removed on fine nights for affording the plants the benefit of night dews.

**Hedychium Gardnerianum (J. M.).**—This plant is of easy culture. It may either be potted in turfy loam with a little charred refuse to keep it porous and grown in a light greenhouse, or may be planted out in the bed of a conservatory. It requires very copious supplies of water during the season of growth, a lesser quantity after flowering, yet sufficient to keep the foliage fresh till October, and may then be kept drier still, but not dry throughout the winter. It is a strong-growing plant, and to see it to advantage must have plenty of room for its free development.

**Parsley-leaved Bramble (Cambridge).**—Any time from the end of October onwards to March is suitable for planting, provided the weather be suitable for the operation. Perhaps early in November is as good a time as any. Planting is done the same as planting Raspberries. Fertile yet rather porous soil is the best, as the plants do not become established quickly in cold heavy land. This Bramble is good for covering walls or fences, or it may be trained in the form of arches over walks, or in any more convenient manner desired. When it commences bearing all that is necessary is to cut the portions out and retain the best of the young growths, as in growing Raspberries.

**Rust on Vine Leaves (P. S. M.).**—We do not think there is anything seriously the matter with your Vines. The leaf sent has a rusted appearance, but the powdery-looking substance is not a fungus. At some time or other there has been an exudation of moisture from the leaves and some rupturing of the tissues, the result, probably of sudden and extreme evaporation, which is often caused by leaving the lights closed too long in the morning, and then throwing them wide open to reduce the too high temperature of the house. We cannot say the leaf is so healthy as it ought to be, but it is not attacked by any fungus. The white-flowered plant is *Verbascum Chaixii*, the other *Euphorbia Lathyris*.

**Something Wanted (W. H.).**—We often think if correspondents were as careful in stating their wants as we are in endeavouring to supply them that the information given would be more serviceable. We have to guess at much from time to time, but we scarcely dare venture to guess in this case. Your request we print exactly as we received it, and if you think there is anything omitted, and will supply what we regard as the "missing link," your letter shall have our ready attention. We must confess our inability to answer satisfactorily the following:—"What would be the for winter and spring use, and what time to sow the seed for the plants to be bearing about the end of February?"

**Troveren Frontignan Grape (A. J. B.).**—We received the Grapes, but after your letter on page 114 was prepared for press, and as you did not ask our opinion, but appealed specially to Mr. Iggulden and other correspondents for information, we did not think it necessary to stop the press to append a note, but published the letter for the opinions of others as requested. You will find Mr. Iggulden's reply in another column. We are quite willing to express an opinion of this Grape, and to say that the correct name of the Muscat Troveren Grape is that above given. This we have stated before, if not to yourself, to a correspondent writing from the same district. It is not a Muscat Grape, but appears to be an exaggerated form of the White Frontignan, the fruit being amber colour, occasionally covered with russety specks. It is crackling, juicy, and of excellent flavour; but for general usefulness bears no comparison with Muscat of Alexandria. Mr. Barron, in his "Vines and Vine Culture," describes Troveren Frontignan as "first-class in quality, but scarcely worthy of cultivation," and the "more heat it receives the higher the flavour and more unsightly the colour." Venn's Muscat does not always set well. There is no difference between this and the Black Muscat as grown at Chiswick, but if you find the former superior why not take up two rods if you wish to have two of the latter, or inarch one on "Venn's?" The quality of the fruit is first-class, but the Vine is somewhat delicate, and the crops occasionally disappointing.

**Shading (A Learner).**—You will by attentive observation learn as you get older when to shade plants beneficially. It is not easy to give precise instructions on the subject in the form of a reply. We seldom shade healthy, established, hardy plants out of doors; but it is sometimes necessary to shade plants under glass. It is most needed in sudden changes from cloud to sunshine, and when anything has been done to the plants, such as potting, that has disturbed the reciprocal action between roots and foliage. It is also resorted to when we wish to preserve the bloom of a plant longer than we otherwise could hope to keep it, though we may thus somewhat injure the constitution of the plant. It will before long be seen that it is also needed in all delicate cases of propagation by cuttings. Its total neglect is often very prejudicial to plants. Here, for instance, is a plant fresh potted or partially disrooted a week ago; the weather has been dull every day since, but to-day the sun shines brightly, and, water as you will, every leaf flags. A little shading would have prevented all this mischief. But another mischief is sometimes produced by overshadowing, or continuing the shade longer than is necessary, and that is even the case when the plant could do without it. A vast number of people when they shade a plant never think of removing it until hours after the cause of shading is gone, and thus the shading enervates the whole system of the plant. All shading has the tendency to elongate or spindle out what previously existed. Use it therefore, but do not abuse it.

**Beurre d'Amanlis Pear (Yorkshire Vicar).**—You have certainly the best of reasons to think highly of this Pear, since you say it is the "only one that is bearing a full crop of fine fruit." It is a hardy and useful Pear, but not in all soils of the first quality. It is not by any means so new as you appear to suppose. The origin of this Pear has been attributed by some to Van Mons, but we are informed by M. Prévost that it was introduced from Brittany to Normandy so early as 1805, by MM. Tiessé and Hubard, and that in M. Prévost's opinion it is a native of the former country. Notwithstanding this statement, Bivort maintains that it was a seedling of Van Mons, because a variety bearing the name of one of Van Mons' seedlings, called Wilhelmine, was proved to be synonymous with Beurre d'Amanlis. Now, there is no doubt at all that Van Mons raised a variety which he called Wilhelmine, because it appears in his catalogue thus—"1030, Wilhelmine; par nous;" but that this is a totally different Pear from Beurre d'Amanlis we are perfectly convinced from Diel's description of it; and he received the sort direct from Van Mons himself. Diel describes it as a small fruit, roundish, 2 inches broad, and 2½ high, and ripening in November and December! It is quite evident, therefore, that the Wilhelmine of Van Mons is not synonymous with Beurre d'Amanlis; but it is equally certain that all the varieties we know of in Belgian collections bearing that name have always proved to be the same as the subject now under notice. There is a variety of this with variegated leaves and fruit, and known on the continent as Beurre d'Amanlis Panachée. The leaves are striped with yellow, as is also the fruit, the latter being marked with broad longitudinal bands of green and yellow alternately. In every other respect the tree and its fruits are identical with its type.

**The Danger of Sulphur in Vineries (S. F. H.).**—We print your letter as a warning to others:—"I have a house of Black Hamburgh, just colouring, badly infested with red spider. I fumigated the house with lime and sulphur; the lime was slaked in a pail, and the sulphur sprinkled upon the lime as it slaked; when the lime was cooling down a good sprinkling of sulphur was put upon it, and the pail and its contents left in the house until morning. Results—every leaf upon the Vine burnt up, and every plant in the house destroyed. I have treated Vines as above for the red spider for over twenty years, but never with the same result. The sulphur had been stored in a room with sulphuric acid and carbolic acid for a long time. Will



the Vines be any good for another season? Should I cut the fruit or let it hang until wanted? I have shaded the house lightly." Our reply to this calamitous note is this:—If "every leaf" on the Vines is "burnt up" the fruit will be of no value, and considering the well-being of the Vines the crop would be better removed. But perhaps the case is not quite so bad as represented, and a few leaves may be left here and there, and a few bunches ripen. The object to aim at is by syringing and maintaining a spring-like atmosphere to induce fresh growth from the extremities of the fruit-bearing laterals. We once saw a similar case where this was done, while at the same time the basal buds remained dormant, and the Vines produced an excellent crop the following year. The reason the sulphur was so destructive was that too much was used. We have never been able to understand how anyone should permit red spider to increase for the purpose of being killed, when by timely and simple measures it may be prevented from doing any serious injury.

**Exhibiting Potatoes (J. D.).**—There are so many varieties of Potatoes so closely resembling each other, and, moreover, some of these produce both kidney and nearly round tubers, that it is impossible to give the name of a variety from two selected examples. We can only say the specimens before us resemble Beauty of Hebron, and the class for a dish of similar Potatoes is undoubtedly that numbered 34 in the schedule. They are good without being first-rate, and we have often seen prizes awarded to worse examples.

**Names of Plants (G. L.).**—*Veratrum nigrum*. (R. B. T.).—1 and 2, *Scabiosa atropurpurea*; 3, *Helenium pumilum*; 4, *Veronica longifolia alba*; 5, *Epilobium angustifolium*; 6, *Mentha arvensis*; 7, *Veronica spicata*; 8, *Campanula rotundifolia*; 9, *Agathaea cœlestis*; 10, *Lysimachia vulgaris*; 11, *Sedum rupestre*. (G. O.).—We have repeatedly stated that we do not undertake to name florists' flowers. The varieties are so numerous that it is impossible to name them without comparison with large collections, and even then the difficulty is very great. (B. J.).—*Oncidium sphacelatum*. (Reader).—The red flower is *Phygelius capensis*, the other is *Spiræa ariæfolia*.

#### COVENT GARDEN MARKET.—AUGUST 13TH.

SUPPLY of soft fruit heavy during the past week, with prices higher all round. Indoor fruit dull, prices lower.

FRUIT.							
	s. d.	s. d.		s. d.	s. d.		s. d.
Apples .. ..	½ sieve	2 6 to 4 6	Oranges .. ..	100	6 0 to 10 0		
Cherries .. ..	½ sieve	0 0 0 0	Peaches .. ..	per doz.	2 0 10 0		
Chestnuts .. ..	bushel	0 0 0 0	Pears, kitchen ..	dozen	0 0 0 0		
Currants, Red ..	½ sieve	3 6 4 0	„ dessert .. ..	dozen	1 0 3 0		
„ Black .. ..	½ sieve	4 0 4 3	Pine Apples English ..	lb.	2 0 3 6		
Figs .. ..	dozen	2 0 0 0	Raspberries .. ..	per lb.	0 3 0 4		
Grapes .. ..	lb.	2 0 5 0	Strawberries .. ..	lb.	0 0 0 0		
Lemons .. ..	case	15 0 21 0	St. Michael Pines ..	each	2 0 6 0		

#### VEGETABLES

		s. d.	s. d.			s. d.	s. d.
Artichokes	.. .. dozen	2 0	to 4 0	Mushrooms	.. .. punnet	0 0	to 1 6
Beans, Kidney	.. .. lb.	0 6	0 0	Mustard and Cress	.. .. punnet	0 2	0 0
Beet, Red	.. .. dozen	1 0	2 0	Onions	.. .. bushel	2 6	3 0
Broccoli	.. .. bundle	0 9	1 0	Parsley	.. .. dozen bunches	2 0	3 0
Brussels Sprouts	.. ½ sieve	0 0	0 0	Parsnips	.. .. dozen	1 0	2 0
Cabbage	.. .. dozen	0 6	1 0	Potatoes	.. .. cwt.	4 0	5 0
Capsicums	.. .. 100	1 6	2 0	„ Kidney	.. .. cwt.	4 0	5 0
Carrots	.. .. bunch	0 3	0 4	„ New	.. .. cwt.	5 0	9 0
Cauliflowers	.. .. dozen	2 0	3 0	Rhubarb	.. .. bundle	0 4	0 0
Celery	.. .. bundle	1 6	2 0	Salsafy	.. .. bundle	1 0	0 6
Coleworts	doz. bunches	2 0	4 0	Scorzonera	.. .. bundle	1 6	0 6
Cucumbers	.. .. each	0 3	0 6	Shallots	.. .. lb.	0 3	0 0
Endive	.. .. dozen	1 0	2 0	Spinach	.. .. bushel	1 0	2 0
Herbs	.. .. bunch	0 2	0 0	Tomatoes	.. .. lb.	0 4	0 0
Leeks	.. .. bunch	0 3	0 4	Turnips	.. .. bunch	0 4	0 0
Lettuce	.. .. dozen	1 0	1 6				

highest price in the market. Last year we got 1s. 2d. for Down wool, and only 9d. for the cross-bred wool.

After the Exmoor lambs had recovered from the effects of the journey, close examination showed the existence of much malformation of the feet among them. This was probably a result of cross-breeding, and which, despite much care in hoof-paring, eventually led to a severe attack of foot-rot. With care and constant attention every remedy tried effected a cure sooner or later, but for a sure and speedy cure there is nothing equal to Gell's foot-rot ointment. The disease is unquestionably infectious, so that we found that no sooner had we cured one batch than others would be attacked; but before this was clearly understood it had spread among a flock of South Downs to the serious injury of several weakly sheep, for a severe attack of foot-rot tells sorely upon the strength of an animal. Our efforts to effect a complete cure at length settled into a systematic weekly examination; every particle of broken or overgrown hoof was removed with a sharp knife, the sore feet being thoroughly dressed with Gell's ointment, all animals so dressed being turned into a pen, and the remainder were made to pass through a narrow passage leading out of the fold made with hurdles just wide enough for one sheep. As the sheep enters the passage it steps into a trough of water 6 inches deep, a man on each side of the passage laying hold of the sheep and carefully washing its feet. It then passes on to a platform leading to another trough containing 1 lb. of blue vitriol dissolved in 2 gallons of water, in which it is made to stand thirty seconds, and care is taken not to have the vitriol water deeper than will just cover the hoof. By doing this regularly every week and letting the sheep into a fresh piece of pasture or folding ground afterwards we at length were enabled to effect a cure in the whole of the affected sheep. In a few very bad cases, where the foot was much swollen and the hoof broken, a poultice of linseed meal was used, a fresh one daily, eventually curing the worst cases. For anyone to say that a flock can be cured of this troublesome pest in a week or two as is sometimes asserted is simple nonsense. Where malformation of the hoof exists there is always some risk of a fresh outbreak, and we were careful to get rid of sheep so affected as soon as they were forward enough for killing. The gentleman from whom we had the cross-bred lambs has his flock of 10,000 sheep frequently passed through troughs of blue vitriol water as a preventive in a very considerable degree of foot-rot.

(To be continued.)

#### WORK ON THE HOME FARM.

**Horse and Hand Labour.**—Peas are cut, harvested, and stacked; Wheat-cutting is finished, and the reaper is hard at work upon the spring Oats. So much of the Wheat was lodged—some large breadths lying so close to the ground that manual labour had to be used to cut it, and the men required a watchful eye upon them to see that the straw was not spoiled by careless cutting, it being by no means an easy matter to get a short stubble where the growth was much beaten down. The direct action of the sun's rays upon the lodged Wheat brought it to early maturity. Fortunately the weather has been most favourable, and it was cut and set up in excellent condition without any sprouting, although many of the Wheat ears touched the ground. Again would we remind home farmers of the importance of cutting Wheat immediately after the grain has passed the "milky" stage. To suffer Wheat to remain uncut till it is goose-necked or dead ripe is a thing of the past—an error in practice, causing an increase of the outer coating or bran at the expense of the flour—a gain in bulk, a loss in weight—quantity at the expense of quality. Heavy showers followed by hot dry weather has given us an excellent second growth of "seeds," which a prompt use of the mowing machine and horse rake enabled us to save in good condition in the middle of corn harvest, and is mentioned as one more illustration of the value of machinery. Stubble Turnips will be sown now as soon as possible for early spring folding, but part of the Pea stubble required for Hops has been ploughed and sown with White Mustard, which will be ploughed-in, and the land subsequently prepared for planting the Hops early in November. A bed of Drumhead Cabbage must now be sown for early planting next spring, and some Thousand-headed Cabbage drilled for a late spring supply.

**Poultry for the Home Farm.**—The difficulty of obtaining enough eggs for the household in winter induced us to give particular attention to the matter, and we now have plenty of early chickens saved annually, taking care to select healthy birds, which are fed three or four times daily during summer with maize and oatmeal, the first food being given them soon after 5 A.M. By autumn when they begin laying they are fine strong birds, admirably adapted for affording an abundant supply of winter eggs, which they do. Last winter we had plenty of eggs from both White and Coloured Dorkings, the balance in size and number being slightly in favour of the White Dorking. We have frequently been told that Hamburgs will lay the greatest number of eggs in a year of any breed. After a fair trial of both Gold and Silver Hamburgs we find them decidedly inferior to the Dorkings in size and number of eggs; they do not begin laying till late in spring, and cease laying early in autumn. On the whole Coloured Dorkings prove the most useful, being



#### THE MANAGEMENT OF SHEEP IN SUMMER.

In the month of August, 1882, we had fifty lambs from Exmoor Forest by way of trial, and in compliance with the wishes of a gentleman whose home farm is under our supervision. They were fine animals, apparently healthy—not pure Exmoors, but the result of a cross between Exmoors and Cheviots. Good mutton, heavy carcasses, and heavy fleeces was the object of the cross-breeding in this particular instance, and our intention was to see if a better animal could be had for home consumption than the South Downs which we had so long used to the exclusion of all other breeds. We may as well say at once that the mutton of the cross-bred sheep proved excellent even in a severe comparison with South Down. The carcasses at two years old are an average weight of 14 lbs. in excess of South Downs, but a comparison of fleeces is not in their favour. The fleeces of this season's clip of the cross-bred sheep are of an average weight of 6½ lbs., which realised 9d. per lb., or 4s. 8½d. per fleece. The fleeces of some South Down tegs of our own breeding gave an average of 4½ lbs. at 1s. 1d., per lb., or 4s. 10½d. per fleece, which certainly shows a balance in favour of South Down fleeces which if light in weight are so superior in quality as to command the



much liked for table, the large plump breasts and small legs forming a striking contrast to the big legs and small breasts of the Brahmas, which we have discarded. Enough Geese for Michaelmas have been selected from the flock, and are being fattened. Turkey poults and Guinea Fowls are forward, and we shall begin using them by the end of the month.

### ENSILAGE.

At the present time, when so much attention is being paid to ensilage and preparations are being made for forming silos, the following remarks by Mr. Edward Luckhurst will doubtless be of interest:—

On the 29th of last November, between four and five hundred Devonshire farmers met together at Hallwill Manor, near Holsworthy, by invitation of Mr. J. W. Harris, to see a silo opened and judge for themselves as to the value of its contents of ninety tons of ensilage. They were told that it consisted of Rye Grass, Clover, and Meadow Grass, cut and carted at once to the silo—part of it while it was raining. As it was put in it was well trodden down, and 6 to 7 lbs. of salt scattered amongst each waggonload. Subsequently, when the silo was quite full, a pressure of 130 lbs. to the square foot was put upon the ensilage, and it was carefully explained that exclusion of air from it by pressure prevents combustion, fermentation, and putrefaction. When cut into the ensilage was described as “of a dark brown colour, moist even to wetness, possessing a strong, penetrating, vinous smell, and a sweetish and not unpleasant taste. There was no liquid at the bottom of the silo, and the top portions were as wet as those at the bottom, showing that the moisture was evenly distributed by the pressure throughout the bulk.” Calves, horses, and bullocks were seen eating it greedily, and showing a decided preference for it, touching neither corn nor hay while they could get it.

This instructive sight, doubtless, brought pleasant visions of prospective profit to the mind of many an anxious Western farmer, heavily handicapped by home difficulties and foreign competition. It was, however, only one of several similar meetings held throughout the land, for many other gentlemen have gone to considerable expense in giving ensilage a fair trial, and they, too, have invited the attention of practical agriculturists to results so remarkable as to point unmistakably to a new departure in farming that must speedily obtain universal adoption. Ensilage has already passed triumphantly through the primary trial stage; the ease and economy with which it is made and kept, and its high value as food for horses, cattle, and sheep has been so clearly and repeatedly proved to demonstration, that when we are told it is “very wholesome, nutritious food, having all the healthy feeding succulent properties of mid-summer grass, with a pleasant, appetising flavour,” and that “a farmer can, under the new régime, store his crops of grass for winter with very little expense, and in defiance of the weather, and ensilage will eventually enable him to dispense with the cultivation of Turnips.” While making due allowance for any enthusiastic colouring, we are bound to give heed to statements enforced by the logic of facts, and to see if we can turn them to account in our own practice.

Here, briefly, are a few of such facts collected as being worthy of the attention of every farmer. At Standish Hall the total cost of cutting, carting, filling, covering, and pressing 80 tons of grass in two silos was 4s. 9½d. per ton; in another instance the entire process cost 4s. 6d. per ton for 70 tons. The quantity of ensilage per acre is said in one instance to be eight tons, as against 1½ ton of hay; in another, three tons of ensilage to one ton of hay; and another perfectly reliable statement gives 3 tons 1 cwt. per acre of ensilage to 15 cwt. of hay. Probably as yet a little uncertainty exists as to the actual proportion, but that it must be greatly in favour of ensilage is self-evident. Chaffing and salting of ensilage, at first thought so important, are both now being discontinued as unnecessary. Pressure is the chief factor, and if it be so thorough as to exclude air, success is a certainty, no matter how green or wet the grass is when it is put into the silo. 200 lbs. per square foot gave an excellent sample of ensilage of tares and Oats, both at Swansea and Longley Hall, Sheffield. For Lord Tollemache's chaffed fodder, at Peckforton, a pressure of 56 lbs. per square foot proved sufficient, but this difference will be readily understood when it is remembered how easily chaffed fodder yields to pressure. The average weight of a cubic foot of ensilage may be given at 44 lbs.; in colour it is a dark, bright brown; its odour is slightly pungent, and not offensive. It is said to increase the yield of milk in cows from 10 to 15 per cent., and its fattening qualities are highly spoken of. It is certainly beyond dispute that animals have a decided liking for it.

But to all this the question of storage is a *per contra* not easily answered. Much, however, may be done in many instances to avoid a heavy outlay. In a calculation of ways and means for making a small trial silo here, it was found that a corner could be spared for the purpose in a lodge situated in the midst of the grass land, and near the cattle yards. There is a hard road to it, the position is high and dry, and the land falls from it on one side sufficiently to ensure safety from any accumulation of water about the silo. For pressing there is a natural bed of sand close by, and an ample store of old artificial manure bags in hand to put it in. Such facilities are, doubtless, exceptional, and they are only mentioned to show that they lay ready to one's hand, and only required looking for, as is probably the case on many other estates.

### THE HARVEST IN AMERICA.

On this subject, which is of interest to all, the *Daily News* correspondent telegraphed from New York on Monday last:—

The progress of the harvest continues satisfactory. The latest official

reports from the different States indicate that the Wheat crop will exceed 500,000,000 bushels. A statistician of the Produce Exchange, whose estimates in previous years have proved nearly correct, places it above that of two years ago, when it was 504,000,000. This is partly confirmed by the report of the Department of Agriculture on the spring Wheat, which makes the average higher than any for the last seven years. All the reports concur in pronouncing the quality exceptionally fine. Last year's crop was 420,000,000 by measure, but by actual weight only 398,000,000. This year the Wheat everywhere has been gathered, excellent in quality as well as larger in quantity. The winter Wheat is all harvested. It is estimated at from 360,000,000 to 370,000,000. The harvest of the spring Wheat in progress is estimated at from 140,000,000 to 145,000,000. Some damage by storms is reported from California, and excessive rains in Illinois delayed the harvest, but the injury is comparatively slight. The prospects of a large Indian Corn crop are still more promising. The present average reported by the Department of Agriculture has been exceeded only three times during the last ten years. The only danger now is from early frosts. The other small grains are full crops, and considerably above the average. This is well nigh assured. Cotton is the only crop about which there are serious apprehensions. Although the weather lately has been more favourable on the Atlantic seaboard the rains have been excessive, causing a weedy growth, while in Texas the long drought threatens serious disaster. During the last few days seasonable showers in some parts of the State have been reported, but rain is still greatly needed. The present condition of the plant is such as to give good results with favourable weather, or show a heavy depreciation with excessive rains in one section, and continued drought in another.

**HOP REPORTS.**—The warm and brilliant sunshine of the past week has done immense good to the Hop gardens, and the reports to hand are generally favourable. Still the prospect of a good crop has long since vanished, and the only question now is, What, under better conditions, at the latter part of the growing season, can be expected? The best news comes from the Surrey gardens around Farnham. There, it is stated, the sunshine has done wonders. The early sorts are in Hop, and look splendidly, and the later sorts are coming into Hop well. The black bine forms a very inconsiderable portion, and all but the very worst grounds have improved. In the Kent district, around Tunbridge Wells, Speldhurst, and Southborough, an improvement, very slight, has taken place, but the bad effect of the past few weeks will not be obliterated. To the north, at Ightham, the bines still keep a good colour, and the burr is fast developing into Hops. From the central parts of East Kent bordering on Sussex, the reports received are very hopeful, and exhibit none of the despondency manifested on previous occasions. At Staplehurst only a short crop is expected, but at Goudhurst a fair crop is looked forward to if the present weather continues. Matters do not look so well in the gardens to the extreme east of Sussex, and the probable yield will be very scanty. In the north-east of the county, at Ticehurst and Rotherfield, the late rains have done great good, and with the warm nights and sunshiny days we are now having, the ultimate result will exceed the anticipations of a month since. Further south a general improvement is reported, but there is no prospect of anything short of a poor crop. At Dallington some pieces are blighted beyond recovery. Still, in the grounds where attention of the best kind has been paid to the plant the prospect is brighter. Hurstmonceaux, Hallingley, Ashburnham, Ninfield, Wartling, and other places make like reports. At Fletching, Uckfield, Maresfield, and the districts in Central Sussex, the favourable weather has had the best effect, and the plant generally is in a very forward state. The weather of the next few weeks will decide the fate of the Hop crop of 1884.—(*Southern Weekly News*.)

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1884. August.		Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.	On grass.	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday .....	3	30.084	63.9	55.2	N.W.	63.5	72.1	52.1	121.2	49.5	—
Monday .....	4	30.230	65.9	56.9	N.E.	63.2	74.3	49.4	124.8	44.1	—
Tuesday .....	5	30.274	65.1	59.2	E.	63.2	73.2	47.2	107.0	41.6	—
Wednesday .....	6	30.170	67.4	60.5	E.	62.4	78.4	49.7	118.3	42.7	—
Thursday .....	7	30.069	71.2	64.8	N.E.	63.6	86.4	55.3	122.7	49.4	—
Friday .....	8	30.085	75.3	67.1	N.E.	65.1	88.4	60.8	121.3	55.3	—
Saturday .....	9	30.021	74.2	66.9	E.	66.5	85.3	60.1	118.3	54.7	0.043
		30.133	68.9	61.5		63.9	79.7	53.5	119.1	48.2	0.043

### REMARKS.

- 3rd.—Very fine.  
4th.—Very fine and bright.  
5th.—Fine and hot, rather close and oppressive in the afternoon.  
6th.—Fine, bright, and very hot.  
7th.—Very hot and fine.  
8th.—Fine and very hot, the hottest day of the year so far.  
9th.—Fine, but rather cooler and a little hazy, clouded over in afternoon, rain in latter part of evening.

A week of glorious summer weather, getting gradually hotter till Friday, which was the hottest day since July 15th, 1831, when 94.6° was registered. Temperature of the week about 4.5° above the average, and rather more than 2° above that of the preceding week.—G. J. SYMONS.





## COMING EVENTS

21	TH	Reading Show.
22	F	
23	S	
24	SUN	11TH SUNDAY AFTER TRINITY.
25	M	
26	TU	Royal Horticultural Society's Fruit and Floral Committees at 11 A.M.
27	W	[Fruit and Vegetable Show.]

## PENTSTEMONS.

**G**REAT advances have been made in the improvement of these plants during the past few years. The flower spikes of many varieties are nearly 18 inches in length, and the blooms packed closely together, many being 2 inches or more in diameter. There are now numbers of varieties, and the flowers are most varied and beautiful in colour, nearly every shade being represented, so that they can scarcely fail to please the most fastidious. As a decorative plant the Pentstemon possesses many advantages over other plants for the flower garden, herbaceous and shrubby borders. They are as beautiful as they are suitable for any position, because they are in perfection from the middle of June until the autumn frosts stop them, a quality that the majority of plants used for the embellishment of our gardens do not possess. In addition to this their spikes of blooms are invaluable for cutting, their cultivation easy, for they will thrive in almost any soil and position. Pelargoniums that are employed by thousands in flower gardens are comparatively insignificant. When whole beds and borders are filled with Pentstemons, either mixed or in separate colours, it would be difficult to name any plants capable of surpassing them for effectiveness. Many plants grown for the decoration of our gardens during the summer give unspeakable trouble and require much skill to protect them from the cold until the approach of genial weather. But such is not the case with Pentstemons; they are almost hardy, for the old plants will pass safely through all ordinary winters with such little protection as a few ashes, cocoa-nut fibre, or other similar material will afford. But the protection of old plants is unnecessary, for thousands of young stock, which are decidedly the best, can be accommodated in a two or three-light cold frame.

Pentstemons are easily propagated by seeds and cuttings, the former being freely produced; but plants raised from the latter are preferable where neat even arrangements in beds and borders are needed. It is very interesting to raise a few seedlings when the seed has been saved from choice named varieties, and although they may prove rather uneven as regards height, they make a very effective bed or border. It is advisable to grow a few from seed annually, as some very beautiful and distinct varieties may be obtained by this means. The seeds should be sown on the surface of the soil in pans and boxes in heat early in the year, and when the seedlings are large enough prick them off singly into other boxes, and then grow them on quickly until they are large enough for planting out into frames and treating the same as those raised from cuttings. It is necessary to hasten them so as to get them as large as possible before the time for planting outside, for the larger they are when planted out the sooner they commence flowering. From early plants cuttings are generally plentiful towards the close of the present and following month. The sooner they can be obtained the better after this date, so that they will become rooted

and established before winter. Vigorous cuttings from 2 to 3 inches in length should be selected and inserted thickly together in a frame, or where old lights can be placed over them. The bottom of the frame in which they are to be inserted should be firm, and upon this should be placed from 2 to 3 inches depth of old potting soil, and upon the surface a little red or river sand. After insertion a good watering should be given, keeping the frame closed and shaded until they are rooted, when abundance of air may be admitted whenever the weather is favourable. The young plants will require very little water during the winter, free ventilation only being needed. During severe weather the protection afforded by the lights will be ample, for if the soil becomes frozen no injury results; but this we endeavour to avoid by placing an old mat or two on the frame.

Some cultivators place their plants as soon as rooted in 3 or 4-inch pots, but experience has proved that this is really unnecessary and only a waste of labour. When in small pots the plants are very liable before they are planted out in spring to become dry at the roots or to suffer from insufficient root room. When grown in pots they cause double the labour in watering that is required for the system we shall recommend.

In early spring, about the month of February, as soon as the young plants show signs of growth, the points of the shoots are pinched out, which will induce the plants to branch and to push shoots from the base. About a fortnight afterwards, or as soon as they commence to break, the plants are lifted and transplanted into frames temporarily prepared for them. The base is made firm, and then soil to the depth of 4 or 5 inches is placed in. Any ordinary garden soil will do provided a liberal quantity (about one-third) of old Mushroom bed refuse or half-decayed leaves is mixed with it. These plants are gross feeders, and grow quickly and luxuriantly in rich soil. They root freely in leaf soil, and lift well when a good quantity is used in the soil for them. The plants are placed about 4 inches apart, watered if the soil is dry; if not, they are lightly syringed daily and shaded when the sun is bright until they commence rooting and grow. Abundance of air is afterwards given them, and when the plants are growing freely and strongly the lights are taken off, and the frames removed by the time they are needed for the protection of other bedding plants. If the weather proves very stormy or severe after the frames have been removed, the plants may be protected for a week or two longer with mats.

Pentstemons are hardier than many people suppose, and if grown on the principles detailed they will bear a low temperature without any apparent injury. This year our plants were placed in their flowering quarters the first week in May, and this in a locality where cold winds and late spring frosts are too frequent. We had 8° of frost after the plants were placed out, and they did not show any sign of injury. To grow these plants well and luxuriantly they require planting in deep liberally manured soil. They lift much better than the majority of plants, and if dry weather follows the operations of lifting and planting one good watering is generally sufficient to start them growing freely. It is surprising how well these plants bear drought, and do not even show the least signs of suffering, when Phloxes and many other hardy plants are flagging from insufficient moisture. This season we have been testing their powers of endurance in this respect by planting them in a particularly dry position at the foot of a wall where the majority of plants fail, but they are flourishing amazingly. So well and safely can they be transplanted that if left until they commence flowering they may be transplanted without injury even during very dry weather. Good plants need not be placed nearer than 15 inches apart, for if planted the first week in May they will have nearly covered the ground and commenced flowering a month afterwards, if the weather is in any way favourable. In order to keep beds and borders gay the old spikes should



be removed as they cease flowering, for they seed so freely that unless removed the plants are exhausted.

The following selection is not a large one, but has been made from a number of varieties, and includes some of the newest, most distinct, and finest forms in cultivation. Mrs. Heywood must be placed at the head of our selection, and is worthy of special note for its dwarf branching habit and free-flowering qualities. This is perhaps the finest variety that has yet been raised, for it does not exceed 14 inches in height and flowers to within a few inches of the ground. Its dense spikes of bloom are not bent down by wind or rain, its habit being so sturdy that it carries the whole of its spikes perfectly erect. The colour, which is white tinged with scarlet, is very pleasing and striking. It was raised and sent out by Mr. John Downie, Edinburgh, as well as the whole of the varieties comprised in this selection. Sir William Forbes has a grand spike of bright scarlet flowers with a white throat slightly veined. Andrew Sinclair, shaded rosy scarlet, with heavily blotched throat; a lovely variety and perhaps the finest of its colour yet raised. William Kilgour produces very massive spikes with flowers of a large size, being in colour bright in rose with a pure white throat. Osgood M'Kenzie is rosy red in colour with a magnificent throat, which is most beautifully pencilled. Mrs. Patterson is a very fine rosy red variety with a crimson and white throat. Mrs. A. Smith is grand in every respect, being deep rose in colour with a white throat. Dr. Tuke is one of the earliest to flower, and is very showy with its bright red flowers, white throat veined with crimson. To these may be added Acros, which is totally distinct from any named, being of a pinkish colour with a beautiful pencilled throat, but is not so free-flowering as those named above; it makes perhaps the finest and most compact spike of all. J. T. Downie is a very showy variety, and quite distinct, of the darkest crimson with a lovely white throat—in fact none in colour is more conspicuous, but its habit is rather weak, the plant being scarcely able to support its large spikes of bloom. It is nevertheless worthy of a place in any garden, for it flowers most freely.—WM. BARDNEY.

#### NOTIONS—WRITING FOR THE PRESS.

HAVING been reading, and observing, and cogitating of late, I have a few notions that I pen and submit to the Editor for what they are worth. If he thinks they are of any use practically or suggestively he will perhaps print them; if not, he has at hand that great convenience for crude ideas, wasted efforts, and spoiled material—the waste-paper basket.

I wonder how many acres of manuscript have found their way into that receptacle, and for what reason they were thus disposed of. I have a notion that the powers that be that cater for the public and supply what is interesting or useful do not wantonly reject anything that can be readily made acceptable. I once had a different notion, but it has vanished. Seized with an ambition to join in the work of public teaching, I years ago ventured to send my first letter for publication, and waited with fear and trembling the result. It was not very flattering, for not half of what I had prepared so carefully ever saw the light; and, curiously enough, everything that I regarded as of a commonplace character was honoured, while the portions on which I prided myself as something superior were suppressed. On and on I went writing in the same grandiloquent style, using as many scientific words and long phrases as I could string together; but it was of no use. What I had intended to cover a page or two was condensed into a column, until my patience was exhausted, and I had the temerity to write and ask the reason why my articles were so severely pruned.

The reply was to the following effect, and was not to be forgotten:—"We are glad to receive what you may send because we always get something out of it; but if you will persist in employing long sentences where short ones will do, if you will hunt outlandish words from the dictionary—in a word, if you *will* soar into the clouds instead of remaining on the earth, where a gardener ought to be, you leave us no alternative but to "prune," and you will always find an Editor can cut out faster than you can put in, although he would very much rather you would not give him that trouble. Be plain and natural in expression; use simple language; when you wish to say a thing say it clearly, so that your meaning cannot possibly be misunderstood; and, having said it, do not proceed to say it over again in another form, or to explain it in a multitude of words, which

neither emphasise nor elucidate, but invariably dilute and confuse. Attend to these injunctions, take as much pride in writing neatly and correctly as you would in making a wedding bouquet; in short, whatever you do, endeavour to do it in the best manner possible, and sooner or later you will be in every respect a better man, and will wonder that you asked why your articles were spoiled by the individuals who could not possibly have any other object than to improve them."

That advice, as I have said, was not to be forgotten, and, as it proved useful to me in an occasional letter to the press, and more so in correspondence on various business matters with persons of somewhat high social position, so also it may possibly prove of service to others who are seeking to make themselves as competent with the pen as they are in the various practical matters pertaining to their duties as gardeners. I have a notion that many persons are longing to be able to write freely, agreeably, and correctly, yet fail because they are not content to adhere to the simplicities of their mother tongue.

This facility of clear and accurate expression cannot be learned so well by any other means as by writing to the press and observing the manner in which the communications, be they long or be they short, are dealt with by the Editors. They will find many an involved sentence suppressed, many a florid unmeaning expression sobered, many a long word supplanted by a short one; and, undoubtedly, the simpler the language the more forcible, the more elegant, and the more beautiful. A person who prides himself on his diction, and who considers that by ringing the changes on a few scientific terms and sonorous sentences he displays his accomplishments, is often long in learning the lesson now sought to be inculcated, and loth to admit the truth of the principle that simple language is the best index of the cultured mind. Yet in time he sees the truth of what is really a truism, and then wonders at his previous notions, smiles at his earlier efforts, and would be glad to forget if he could many an indiscreet, because pompous, letter he has written in the sanguine days of youth.

Another matter of more importance than many young persons imagine is to cultivate the habit of thinking out a subject systematically—that is to say, of concentrating the mind on the different phases of whatever may be under mental review, mastering each in turn and in a natural order of sequence. By practice and perseverance this habit may be acquired, and a most valuable acquisition it is, as it enables the possessor to express himself with the greatest ease and in a manner that cannot fail to be appreciated by his hearers or readers.

A person who has a clear idea of a subject on which he essays to write commences at the beginning firmly and clearly, follows the argument or phases step by step in natural progression until the various points are brought under review, then when he reaches the end he knows it, and without more ado concludes as firmly, crisply, and clearly as he began. An article thus written is always readable, and that is something, even a great deal. Attention is arrested at the beginning, the subject is made clearer in each successive sentence, the ideas of the author are comprehended, and the whole matter understood, while the firmness or finish leaves an impression that is never produced by any other means; but, and here is the obverse, a writer who has not trained himself to think consecutively first of all errs by his tedious hesitancy in approaching his subject. His long circumlocutory introduction betrays his weakness. He gropes and gropes, and at last strikes his object, but only to rebound, for the next moment he is in the middle, then at the end, and anon at the beginning again; but at last he gets afloat and sails. He glides along freely enough for a time, but now and again is thrown violently out of his course, recovers and reaches the goal; but, and here is a great failing, does not appear to know it, and so goes on wandering to the vanishing point. What is there left for the mind to dwell on in such a case? Simply nothing. The tapering tail-making propensities of some writers and preachers is nothing short of pitiable. Avoid these dribblings. The true orator makes no such mistakes. He does not lead his hearers to the bursting point of enthusiasm, and then gently soothes them down until they are nearly asleep, with scarcely power to say, "good night." He is far too wise for that. He leads his hearers on, and just when the wish is greatest to hear more he throws off some telling sentence and retires. Is not this quite true?

And now to another notion in connection with this subject, which is of interest to many, and that is the consciousness of the existence of a desire on the part of readers to become writers, but whose diffidence restrains them. That desire is laudable. Than the wish to aid in anything that is worthy, the longing to be useful, the yearning to impart knowledge, nothing can be more commendable. It is within the knowledge of most persons whose correspondence is not inconsiderable, that there is no lack of men of ability and men of literary accomplishments if they did but know it; but these individuals cannot summon courage to join the great army of public teachers who



n their endeavours to benefit others benefit themselves. The innate modesty of such men impels them to remain in obscurity. It is a pity. Many a valuable hint, many a suggestive thought, many a good notion, many a telling example of success are lost to the world because of a natural hesitancy in recording them. They may be familiar to a limited few, and talked about in a limited district; they may even be registered in some book and put in a drawer as if they were of any use there. That is the end of much that is good in itself, and might be of value to numbers, but is lost to all.

Now a last notion on this subject. As in my experience—and it is spread over a wide field of journals and periodicals—Editors are the most relentless of mortals, treating alike the communications of peers, parsons, and peasants; so also are they the most considerate, especially in protecting the young and inexperienced. No young man need fear that anyone will be permitted to ridicule his early attempt in literary work. An older one who is obviously able to take care of himself may perhaps be freely criticised, and few such men object to this, but young writers are secure from any such thing. Then an editor is a safe confidant. Unless he has been wilfully and purposely deceived it is as useless expecting “Grapes from thorns” as to hope to extract from him anything of a private nature committed to his keeping. Temptings and threatenings are alike vain, and he goes on unmoved in his simple course of duty. If these notions, or any of them, should be in any way useful or encouraging to any old or young readers of a journal in which so much that is good appears, an evening hour penning them will not have been spent in vain by—AN OLD SCRIBE.

### STRAWBERRIES FOR FORCING.

It is time Strawberries were well established in their large pots if they are wanted for early forcing, but if the fruit is not required before the middle of April there is still time. What are termed 32's or 6-inch pots are the best for the purpose. If the runners have been previously prepared by layering into small pots so much the better; if not, they may be obtained at a small cost from anyone in the trade, or, failing that, the best young plants may be lifted from the beds, and with careful attention to shading and watering they will give a good crop, but anyone who has not been accustomed to such work before would be liable to fail.

The pots require a layer of broken potsherds or cinders at the bottom for drainage, the latter being preferable; over this place a handful of soot, which will keep worms from entering and souring the soil, then some fibry turf which has had most of the soil knocked out should be added if procurable, some moss or half-decayed leaves. This will keep the soil from washing among the corks or cinders and stopping the drainage. Strawberries require abundance of water and liquid manure when fruiting, hence one of the main points in their culture is to insure perfect drainage.

The best soil is a moderately adhesive turfy loam which has been cut and stacked long enough to kill the grass; if not considered rich enough, well-decomposed manure may be added—well-decayed cow or sheep manure being the best. This must be well disintegrated by rubbing it through a sieve, in order to insure it being thoroughly mixed with the soil; but as a rule I prefer feeding the plants with liquid manure in the fruiting season to mixing manure with the soil. If for any reason no soil has been cut and stacked previously, fresh cut turf may be used, and, failing this, ordinary garden soil will do if some half-decomposed manure from a dung-heap is partially dried, chopped small, and well incorporated with it.

When potting, turn the plants out of the small pots, being careful at the same time not to disturb the roots unnecessarily, and ram the soil well around them in the 6-inch pots. If these can afterwards be set behind a north wall for about a week they will not feel the check so much. They may then be placed on a bed of coal ashes in an open space at a fair distance apart, so that they have plenty of room to grow without touching each other. The only attention they will require now is to keep them clear of all weeds—watering and syringing when necessary—also picking off all runners as soon as they appear. There they may remain until the time for placing them in their winter quarters. This will depend on the season, but will generally be about the second week in October; however, if the weather still continues moderately dry and mild they may remain until a change appears imminent.

There are various ways of storing them for the winter. If only a small quantity is grown the best way is to plunge them to the rim of the pot in coal ashes in a cold pit or frame, the lights to remain off if the weather is fine and the temperature above 32°. Care must be taken, if the weather is mild and dry, that they do not become dry at the roots. If treated in this

way they will be ready to remove to the forcing house when required.

If a large quantity is forced they are sometimes plunged to the rim in coal ashes, on a firm piece of ground in the open, merely protecting them from very severe frosts with a little bracken or litter placed over the crowns, and I have seen some very fine fruits from plants so treated, but would never recommend it unless circumstances rendered it compulsory. A better way, though not so good as the first-mentioned plan, is to build them up in stacks in a sheltered position by laying a row on their sides close together, then lay a row parallel to this, so that the bottoms of the pots of the two rows are facing each other and 2 feet clear distance between them; turn the ends in the same way till they meet, and you have the bottom layer of the stack complete. Fill in between them with coal ashes, working them well between the pots and making the centre firm; then place another layer on top of these in the same manner, but a little within the outer line of the preceding one, and keep the upper edge of each layer slightly inclined inwards, so that the face of the stack has a slope to it on each side, which will keep it firm. Five or six of these rows on the top of each other with ashes between should form a blunt ridge, with about 3 inches between the bottoms of the top layer. Finish this off to a point with more ashes made firm with a spade, and the stack is complete. The only attention they will require until all danger of severe frost is past is to throw a little bracken or litter over them.

One word of caution. Be sure all plants are well watered if at all dry before stacking them in this manner; they will then be quite safe until about the beginning of March, if not wanted inside before then.—W. H. DIVERS, *Ketton Hall*.

### SHRUB-GROUPING.

“It is a paradise of Rhododendrons and Azaleas,” said a lady to me of a garden which I made some thirteen or fourteen years ago; and certainly the remark, though perhaps a trifle high-flown, was not inappropriate, surrounded as we were at that moment in the month of June of the present year with masses of Rhododendrons and Azaleas in full bloom. But even if a garden were so beautiful in early summer as to justify such an expression, it would indeed be unsatisfactory if it contained no objects of beauty for other seasons of the year. All too frequently do we hear the inquiry, What have we that is really bright and ornamental in the shrubbery when the spring flowers are gone? At the present moment the Mountain Ash supplies an answer that is quite irresistible, for never have I seen its bright scarlet berries in richer profusion or brighter colour than now. The long flexible branches are so heavily laden as to bend down gracefully, the lower being clusters almost touching the ground, with others above them in irregular tiers mingling lightly with the handsome pinnate foliage, carrying the eye upwards often full 20 feet. Like the Holly it is indigenous to the soil here, and when the garden was made hundreds of it were destroyed, only the best or most promising specimens being retained to form part of various groups and belts of trees and shrubs. Out in the woods there are whole groves of it springing out of a dense undergrowth of Ferns—a carpet of cool green, in striking contrast to the scarlet berries overhead. Add to this a waterfall, a stream of water winding among the Ferns, with a background of grand old Beeches between whose branches are glimpses of purple Heather, and we have a picture of wild woodland beauty over which I would fain linger but that my readers may ask, “What has all this to do with shrub-grouping?”

My description of the great beauty of the Mountain Ash now is given to show how suitable it is for planting in the shrubbery. It is only by close observation when each tree or shrub is at its best that we are able to decide which to select and how to arrange them when the planting season comes round again. The study of a skilful arrangement of shrubs in beds or borders shows us that not only is there a connection and unity of expression in the whole scene, but that there are many groups possessing special attractions and features which change with the seasons, so as always to have some object of beauty or interest throughout the year, while each shrub is more effective either from force of contrast or harmonious association. Before turning to the study of groups already in existence let us select materials for an ideal group, and see how well we can make provision for each season of the year.

Spring brings to us an embarrassing number of floral gems, and the work of selection is by no means easy. Hundreds of choice Rhododendrons crowd upon our notice, from the early-flowering varieties of *Nobleanum* to such late sorts as *John Waterer*. Then come *Azaleas*, *Kalmias*, *Andromedas*, *Pernettyas*, *Gaul-*



therias, and hardy Heaths, Pæonias, Ribes, Weigelas, the early Spiræas, Prunus, Daphne, Kerria, Lilac, Guelder Rose, Laburnum, and Syringa—all familiar enough to the veteran practitioner, but often a puzzle to beginners from the wealth of materials from which selections have to be made.

*Summer.*—Some of the late-flowering Rhododendrons link together spring and summer, but they soon fade and pass away, leaving our clumps comparatively dull, yet not without special attractions, among which Spiræas figure conspicuously. Spiræa ariæfolia certainly becomes more beautiful every year. I first saw it just passing out of bloom in Mr. Carne's garden, on the north coast of Cornwall, eight years ago, and some of the plants of it which I planted in the year 1878 are now full 10 feet high, and when laden with yellowish white plumes of flowers, as they are in July and part of August, there is no more conspicuous or lovely object in the garden. Rhus Cotinus comes into bloom at the same time, and is equally striking and attractive when seen in the full glory of its cloud of purple inflorescence. It is then so beautiful that we wonder it is not more often met with; this may in some degree be owing to the fact that it will not flourish in a poor soil, but so fine a shrub is certainly worthy of a special station. What summer-flowering shrub is worthy to complete the trio? I will select the Japanese Rose (*Rosa rugosa*), and will ask any reader of the Journal having a collection of shrubs to tell us if they think I could do better. For its dark green foliage alone this shrub is highly valuable for ornamental uses. It forms a large dense bush, and has bold clusters of its fragrant flowers upon the spring growth, followed by a midsummer growth that is equally floriferous. The flowers should not be cut, for they are followed by large berries of a rosy scarlet hue, and as autumn comes on the foliage changes to a bright yellow. Spiræa Douglasii is so gay in July and August with its abundant large clusters of deep pink flowers, that it deserves special mention. It grows quickly into large bushes, and seeds so freely that seedlings spring up by thousands near every plant. It is very accommodating, growing away and flowering as freely out in the woods as it does in the shrubbery, in which respect it differs from many other shrubs which I have turned out in the woods to rough it, and most of them have failed, notably several hundreds of white Broom, all of which grew and flowered freely for a few years and then died. I mention this because it is not always understood how the roots of trees established for several generations in a wood permeate every inch of soil, so that without fair space and much care exotics have very little chance of existence, to say nothing of thriving. I have tried this matter out, and am convinced that half-measures in a wood are just so much time and money wasted. Last winter I had a bank of some two acres gently sloping from a drive downwards to a piece of water, cleared of all the underwood root and branch, the timber has also been thinned, and I look forward to next planting season for some interesting work in the planting of shrub groups on this bank.

This digression will be pardoned when it is remembered that it has a useful bearing upon a branch of the work of shrub-planting, and serves to render clear one of the many vexed questions which crop up in laying out a garden. I know full well from dear-bought experience that I am doing good service to my brother gardeners when a matter of this sort is explained, for however carefully the end of building and planting has been considered, there will often be difficulties rendering an additional outlay imperative however vexatious it may be. — EDWARD LUCKHURST.

(To be continued.)

### ORCHID NOTES.

*ONCIDIUM ORNITHORHYNCHUM.*—This small-flowered insignificant variety will scarcely be welcomed by those who delight only in the most brilliant-flowered varieties. It is, however, not to be despised when well grown and flowered. A plant with from six to twelve spikes of its small fragrant flowers is very effective. The flowers are very useful for cutting, and the plant should be grown in all gardens where fragrant flowers are in constant demand. It is a very accommodating Orchid, and can be most successfully grown either in the stove or in an intermediate temperature. We prefer to grow it in the former and rest it in the latter, although it will do well in a lower temperature where the convenience of a stove does not exist. It can be grown in either baskets, pots, or pans, the two latter being preferable, as it does not appear inclined to throw its roots freely into the atmosphere. When the plants are in small pots and crammed with roots they will certainly extend over the edge and attach themselves to the side of the pots or pans in which they are grown. By a judicious system of potting the roots can

be kept in the pot and the plant in health. Whether pots or pans are employed they should be three parts filled with drainage, for liberal supplies of water are needed during the growing season. While at rest in a lower temperature no more water is needed than will keep the pseudo-bulbs plump. It is important that the growths are well ripened, for upon this the flowering depends. During the growing season this plant enjoys plenty of light and a free circulation of air to ensure sturdy foliage. In a confined atmosphere the foliage soon becomes weakly. A mixture of peat fibre and moss in nearly equal proportions, allowing the former to predominate, is the most suitable.

*SACCOLABIUM BLUMEI MAJUS.*—What a grand Orchid this is either for a pot or a basket! A few plants in the latter suspended from the roof of a plant stove are charming at this season of the year. Many people are deterred from the cultivation of these plants because they have no special Orchid house, but Saccolabiums thrive luxuriantly in the temperature of an ordinary plant stove. They grow well in baskets, which are more suitable for the plants than pots, although they can be grown successfully in the latter. They soon throw out their roots with profusion into the atmosphere of the house. It is not difficult to find plants that are grown in baskets with not a single root in the material in the baskets intended for them, so well do they love to have their roots outside, and even when in this condition they remain in the most perfect health. Saccolabiums are ornamental suspended from the roof even when they are not in flower, but when their beautiful long arching spikes of small flowers closely packed together are produced they are charming, and surpassed in beauty by no Orchid. When once placed in baskets this Saccolabium does not give much trouble afterwards. The baskets should be filled level with crocks and lumps of charcoal, and then liberally surfaced with living sphagnum moss, which should be induced to grow freely during the summer months. The moss must be renewed annually just as the plants are starting into growth, and when removed from the surface all the small decayed particles that may have become deposited amongst the charcoal and crocks should be washed out by pouring tepid water into the baskets. Although the roots like to be outside the basket, decomposed material should not be allowed about the plant. These plants require good supplies of water during the growing season; in fact should never suffer from an insufficient supply, for they have no thick fleshy pseudo-bulbs in which to store food the same as *Oncidiums*, *Dendrobiums*, and others. These plants will rest sufficiently in the stove if the night temperature ranges from 60° to 65° according to external conditions.

Thrips and scale are the worst insect enemies this plant has to contend with. The latter can be removed by sponging, and the former by fumi ating and sponging with tobacco water. This must be well worked into the axils of the leaves by means of a small brush. Tobacco powder is invaluable for this purpose, and will quickly eradicate thrips from any plant upon which it has become established.—L. B.

### EAST LOTHIAN STOCKS.

"A THINKER" is surprised to learn that East Lothian Stocks can be had in perfection in six months after sowing in the same year, and wishes to have some particulars as to treatment. Mr. George has favoured me with the following reply:—"My treatment has been so simple that there is hardly anything to communicate. The seeds were sown on the 5th of February in pans, and placed in an early Peach house. When the seedlings were large enough they were potted into 60-sized pots, and kept close in a cold frame for a few days till they had taken to the soil; they were then given plenty of cold air day and night, and were planted out in well-manured and deeply dug ground on the 13th of May. They are now (August 9th) very fine, but, like everything else, would be better for a good shower." Perhaps I may have a little over-stated the case when I said that these would be in "perfection" at the end of July. I saw them on the 19th July, and they were then beginning to bloom freely, but I have no doubt they will be much better on the 19th of the present month, when I hope again to see them. Mr. George has proved that fair results can be attained for late summer and autumn display in four or five months less time than by the ordinary treatment.—R. INGLIS.

### AUTUMN-SOWN ONIONS.

I go all the way with Mr. Muir about the advantages of these bulbs, and inasmuch as they are certainly milder than the spring-sown they have that additional advantage. If I understand Mr. Muir rightly, his plan and mine are different; and as for several years I have exhibited them successfully at our local show, and on the day I write have just taken first for six, the smallest being over 16 inches round, I venture to add a few remarks.



I do not gather that Mr. Muir transplants his. Mine are sown about this time of year in drills, and in the spring are planted out in good rich soil. I give them plenty of room, at least 9 inches every way, and I think they repay even larger space. As they grow fast I have the bulbs earthed up, this is some protection against the maggot. Finely sifted ashes, too, are a help against this pest, possibly not quite so great a safeguard as is supposed. I also fancy that Fir-tree oil over them properly and carefully diluted, for it is difficult to mix with water, is also a great help. If anxious to excel in the exhibition tent a few grains of nitrate of soda in the neighbourhood of each bulb will materially assist the rapid growth, but if there be a manure that requires a light hand and careful application commend me to the nitrate.

But although, as far as my experience goes, this winter-sown Onion is not as liable to the attacks of the maggot as is its spring relative, there is another trouble to which it seems to me far more exposed, and which, when allowed its own way, is very fatal to size and goodness of the crop. This disease is, as appears to me, a sort of fungus or mould that attacks the leaves—the crop will look well to-day, but three or four days hence, here and there in the bed, the dark green foliage, if we can call it by such a name, has on one or other of its leaves a patch of white powdery-looking substance, and the healthy green colour is lost, whilst the part has also a pinched-in appearance. If allowed to advance unchecked it rapidly spreads, and the bulb ceases to grow, and the bulbs do not keep as well. I think I have checked it by the Fir-tree oil in solution, each leaf being wiped with a sponge wet with it. I have also sprayed them with the same, and I think this is useful. I fear in my own garden that the spring-sown Onions, which hitherto have defied the inroads of this disease, are succumbing to its influence and following the bad example set them by their spring-sown cousins. Can any of the many readers of our Journal suggest an easy cure?—Y. B. A. Z.

#### DIDDINGTON.

(Continued from page 121.)

THE kitchen garden is shut off from the pleasure grounds by a high, well-trimmed Yew hedge, and it is divided into several compartments, two being surrounded by rather high walls well furnished with fruit trees in capital health, the remainder of the kitchen garden being the usual slips.

Peaches are carrying full crops of what promises to be fine fruit. Magdala, of which there is a large tree, is much prized there, and there are the usual good old varieties, such as Royal George, Grosse Mignonne, Noblesse, Barrington, &c. The trees are all large and healthy, giving proof if it were needed that Peaches can be profitably grown on open walls in favourable localities.

Apricots on a south wall are carrying good crops, but the best crops are on trees on an east aspect, not having had any protection in spring, which is all the more remarkable, as the weather was trying to the blossoms and embryo fruit last spring. Moorpark is most esteemed, and seems to suffer less from loss of limb or sudden collapse of the branches than is the case in only too many localities.

Plums may be set down as nil, except Rivers' Prolific and Rivers' Early Favourite, of which fine fruits were being gathered at the time of my visit—viz., the close of July, and Belgian Purple. Pears were very scarce, the most prolific this year being Glou Morceau. Bush fruit had been abundant.

The grass structures comprise the usual ones for growing flowers and fruits for home consumption. The first I entered was a Peach house, a lean-to, with a double trellis, a low one in front for dwarf-trained trees and a curved one at the back to accommodate standards, the idea being to utilise the space and bring the bearing part of the trees well up to the glass. The trees have only been planted this season, but have made good progress, and being trees of some years' training have given some fruit this season. As the supply was required to extend over some time the planting had been done accordingly with Hale's Early, Grosse Mignonne, Bellegarde, Waterloo, Barrington, and Princess of Wales.

In the vinery are nine Vines carrying a heavy crop of useful bunches, consisting of Black Hamburgh and Muscat of Alexandria principally, Bowood Muscat as there grown not being distinct from Muscat of Alexandria. The crop, though heavy, had coloured well, and the varieties being confined to those named shows the position these have in general estimation, they being the two most useful and finest Grapes in existence.

Pines are grown in low houses or pits, the principal one being in three compartments, mostly used for fruiting purposes, whilst successions are grown in low pits in front. The structures are exceedingly simple. There is a bed in the fruiting compartments at the front with a narrow path at the back, with a shelf at the back near to the glass, on which are grown various useful plants, and in the late winter and spring is used for ripening forced Strawberries. Mr. Radclyffe for this purpose is highly spoken of, and deservedly, as I find it one of the very best for second-early forcing, its good habit and fine showy fruit swelling off well being much in its favour. The beds or pits in which the Pine plants are fruited have four rows of 4-inch hot-water pipes, the plants being grown in pots and plunged in sawdust; and there are, if I remember rightly, the same number of pipes for top heat. The plants

have the benefit of being near the glass. I am minute in the description of these structures, which are of the simplest and most inexpensive kind possible, and to show that Pine-growing in this country is not nearly so costly nor so difficult as one would have us imagine. Queens are relied upon for the summer supply, supplemented by Smooth-leaved Cayenne; The Queens attain a weight of between 3 and 5 lbs., and the Smooth-leaved Cayenne to over 6 lbs. A few Black Jamaica and Montserrat are cultivated for winter as a change from Smooth-leaved Cayenne. The successional plants are grown without bottom heat, but are plunged in sawdust, and there are two rows of hot-water pipes for top heat.

On a plot of ground in front of the Pine pits, &c., Dahlias are grown—exhibition flowers, which have in former years taken many prizes at many shows, not only local, but at the Crystal Palace and other places where the competition is keen—and this year an easy first were awarded to blooms from this establishment at the recent (August 4th) St. Neots Show, the varieties being John Cocker, Chorister, J. W. Lord, H. Walton, Peacock, Prince of Denmark, Perfection of Primroses, James Vick, Mrs. Gladstone, Rev. Goodday, and Vice-President. So strong are the plants, so clean and healthy in growth, and the opening buds so full of promise, that they cannot but be heard of again to the credit of the grower, who has done something in the raising of new varieties—Mr. Thornhill, for instance, and others.

Returning to the glass structures, we find in the stove many useful plants



Fig. 28.—CARPET BED AND METHOD OF PLANTING.

- |                               |  |
|-------------------------------|--|
| 1, Weeping Cherry.            | 6, Mentha Pulegium gibraltarica.       |
| 2, Coleus multicolor.         | 7, Golden Feather, small plants.       |
| 3, Golden Feather.            | 8, Alternanthera paronychioides.       |
| 4, Alternanthera amena.       | 9, Sedum glaucum.                      |
| 5, Mesembryanthemum cor. var. | 10, Echeveria secunda glauca (raised). |

grown in pots suitable for table and house decoration, which are more in request than specimens, whilst those for affording cut flowers were not neglected. These were Dendrobium chrysanthum, D. nobile, Calanthe vestita lutea, C. Veitchii, Allamanda Hendersoni, Adiantum Williamsi, Ananassa variegata, Dracaena Bausei, Areca crinita, having red stems, dwarf and dense in habit; Dracaena Baptisti, D. regina, D. nigrescens, Asparagus plumosus, Nephrolepis Duffii, Adiantum farleyense, Davallia Mooreana, Anthurium Schertzerianum giganteum, Pandanus Veitchii, Croton Queen Victoria, C. undulatus, C. Weismanni, C. majesticus, C. angustifolius, and Adiantum tinctum, which from its rosy young fronds is very effective. I give the above names for the guidance of those wishing plants adapted for the purpose indicated.

In a span-roofed house Tomatoes in pots are grown, the plants being trained to a trellis near the glass with single stems 18 inches apart, the stems being about 5 feet long, and they carry on an average sixty fruits each, some over 1 lb. weight, and clean smooth examples, gaining first honours at St. Neots Show, are the rule. This is a fine example of successful Tomato culture. The variety solely grown is Sutton's Conqueror. In the same house are Eucharises, Gloxinias, Impatiens Sultani, Adiantums, and other Ferns.

In the greenhouse were Tydas, Achimenes, Coleus, Begonias, Fuchsias, the lovely blue Plumbago capensis, Statice profusa, Lygodium scandens, and other useful plants, either for decoration or to afford flowers for cutting. Cucumbers and Melons are grown in frames on dung beds enclosed in brick walls, and they are filled with plants in a clean healthy condition, the varieties of Cucumbers relied upon being Telegraph and Telephone. Melons appear to do well, there being some fine fruits of Hero of Lockinge, Bloxholm Park, and Eastnor Castle. In the frame ground are a number of pits, that prove extremely useful for wintering or hardening-off plants required for the extensive



flower garden, which must tax the resources of the gardener to the uttermost.

It only remains to state that the kitchen garden is well cropped with produce of the highest quality for present use, with abundance for successional supply. Onions are good, and Runner Beans, despite the drought, are excellent. Peas have suffered from the prolonged dryness, and may be considered as over. There is no bare ground and no weeds, the whole of the grounds and gardens being in excellent order.

This is no show place, but it is one in which there is good gardening, much praise being due to the gifted gardener, Mr. Petfield, who has presided over work done so thoroughly and well in these gardens for nearly thirty years with the approbation and esteem of the late and present proprietor.—G. ABBEY.

P.S.—I enclose the plan and planting of a carpet bed (fig. 28), which forms part of the flower garden. The whole is very fine, and in spring bedding is even more gloriously gay than now.—G. A.

### LIFTING PEACH TREES.

It is often difficult to obtain a good crop of fruit from Peaches that make extra strong growth, such as young trees or those in the most luxuriant health often produce. It is almost impossible to bring such trees to a standstill, for they persist to the last in bursting their buds and making lateral growths. The crop is most uncertain the following year when growth is continued until the foliage is forced off to induce the trees to rest. Fire heat may be used in assisting to ripen the wood, but in the end no advantage is gained. Even if they are left until the foliage falls and are then severely root-pruned to check over-luxuriance a season is lost, for the buds are sure to fall just at the time they should commence swelling. If the buds remain upon the trees until they develop, the flowers upon examination are found to be imperfect and incapable of proper fertilisation. If the flowers appear to set, seldom indeed do the fruits swell as they should, and they finally fall. These evils are often attributed to dryness at the root and other causes, but it is simply over-luxuriance, and often when the wood seems to be ripe the same results follow. It is impossible even in the best and brightest seasons to ripen the wood of trees that will grow until the days shorten; the nights are cold and the foliage naturally falls.

Such evils can even in strong young luxuriant specimens be remedied to a great extent without losing a season in so doing, and in all probability the crop of fruit can be saved as well. This can only be accomplished by causing a cessation of growth early in the season, say as soon as the fruit has been gathered, or, if there has been no fruit, about the time the crop would have ripened. It takes a long time to bring very strong trees to a complete standstill by drying the borders even if very shallow and limited in size. This may be persisted in to a certain extent, but the foliage is very liable to suffer from attacks of red spider, which in the end will prove as injurious as if the trees were allowed to grow unchecked. The safest and most effectual plan of arresting the growth of trees in the condition described is to lift or root-prune them. Suppose the trees have never been lifted from the time of planting, such trees are in a worse condition to be operated upon than those which have been lifted annually or periodically. The latter may be safely lifted; and if in an early house, and the fruit intended to be ripe towards the end of May or early the following month, they will have been pushed forward to make their growth. These trees may be dug round and root-pruned not later than the middle of June, the second house a month later, and later houses during August. The wood of luxuriant specimens will be green and the foliage fresh during these months, but no harm will result from lifting sufficient to thoroughly check the growth. Trees in luxuriant health that have been annually lifted can be cut back at the roots and further growth prevented without even the foliage flagging. Young trees that have not been lifted since they were planted, say three or four years ago, may flag if the whole of the main shoots are shortened, as they should be, but this will prove no detriment if they are syringed well afterwards and shaded from bright sun for a few days.

It is difficult to lay down rules to what extent the roots should be cut back, but sufficient should be taken off to arrest the growth, and if this can be done without causing flagging so much the better. Those which are subjected to early lifting, if syringed to keep the foliage clean and watered thoroughly at the roots, commence at once to ripen their wood, and their flower buds become plump. Fire heat during the day can then be employed with advantage in assisting the work of maturation. If the work is done as it should be, all who were not eye-witnesses that the trees had been root-pruned would scarcely believe after the space of a week or ten days that they had been subjected to such treatment. Seldom indeed do Peaches lifted early as described fail to keep their buds and carry a crop of fruits.

These early-lifted trees will form an enormous quantity of roots before the foliage falls. If they are not again lifted just as the leaves show signs of falling, they will grow the following season with the same vigour and luxuriance, but they must be root-pruned on a more

extensive scale. The old trench must be dug out and the soil worked from amongst the roots considerably nearer the stem than was necessary the first time. It must be done to such an extent that the cultivator can insure wood of moderate size, which will become firm and well studded with buds before the foliage falls the following season. These trees should then be subjected to a system of annual lifting after the wood is ripe. This not only satisfies the cultivator that the soil is not dry at the roots, but also insures water when applied passing freely into the border. Trees annually lifted between the time the fruit is gathered and the falling of the leaves are capable of carrying very heavy crops of fine fruit, and remain in perfect health for many years. Further, I have never known them cast their buds. I have lifted those under my charge for six years out of seven, and the year they were not lifted they threw off nearly the whole of their flower buds, which I am convinced was due to no other cause than over-luxuriance and no lifting.

The system of annual lifting as I have recommended in these pages has been criticised, as all innovations generally are, but it has been clear that those who differed widely from me never practised the system, or they would have been able to point out as an argument in favour of non-lifting, the disadvantages that are likely to follow from the system recommended. From experience I have found that the system has at least one drawback, and this I intend pointing out for the good of others. The evil to which I refer is the formation of too many feeders—a good fault, some may remark. The trees being lifted so frequently they become accustomed to it, and make so many fibry roots that ordinary working round them, cutting back the roots to where they started from the previous year, is not sufficient to keep the growth checked and the trees within due bounds. By frequently lifting, the mass of soil round large plants becomes so full of feeding roots as to resemble door mats, that it is difficult to work out the soil from amongst them with a fork, and trees in such condition never feel the removal of a quantity of roots, but appear to grow the following season with increased vigour. Some of your readers will scarcely credit that trees with such roots as described, and a spread of branches of from 20 to 30 feet, had 18 inches to 2 feet of roots cut off them during the months of June and July, and never even showed signs of flagging. The trees in our third house have just been done, and the others will be served the same as soon as the fruits are gathered. Many would consider this rather a severe root-pruning, even if the trees had no foliage upon them, but it is not sufficient to check the luxuriance of our trees—it only just brought them to a standstill. These trees will be lifted again as advised above, and more severely dealt with.

Such trees may, I think, safely be termed fair-sized specimens, and it should be understood that the roots which support them do not extend far from the stem. The borders are scarcely 18 inches deep, the stem of the trees about 1 foot from the front walls, and all roots that attempt to go through the arches that have been formed, I dare say when the house was built, are cut off. The roots at the front of the trees are only allowed to extend to the front pipe scarcely 2 feet 6 inches from the stem, and right and left of the stem about the same distance, or 6 inches more. Such facts should, I think, be ample proof to those making borders for Peach and Nectarine trees that large deep borders are only a waste of labour and material.—W. B.

### DRY WEATHER AND WATERING.

It has often been said that a certain amount of discontent is essential to happiness; and grumblers, even those habitually so, often enough live to a good old age, carrying with them the propensity they acquired in their youth; grumbling, therefore, like medicine, may be regarded as very good in its way, and may, doubtless, be quite as necessary. In the various avocations of life there is always something to grumble at if an object is looked for, and too many of us are apt to hunt after one. Gardeners complain in winter of its being too cold; by-and-by we find, perhaps, that the soil does not work well, and we complain then that the winter has not been cold enough; while in summer contrarieties are alike wished for and found fault with. At the present time (August) we think we are suffering extremely from want of water, while in all probability the crop of fruit we may have next year may owe its origin in a great measure to the dryness of the present period. Dry, bright, sunny weather is at most times grateful to vegetation, certainly so to that which is established some depth in the ground; and when we consider that in such is embraced a considerable portion of the vegetable kingdom we must not be too hasty in finding fault. It may be true that an equally good result would have followed if more rain had fallen; nevertheless, our ideas of what constitutes perfection in such matters are yet far from perfect. Let us, therefore, be thankful for the advantages a dry summer brings with it, and try our best to obviate some of the inconveniences arising from it in other ways.

That water forms an important constituent of every vegetable is well known and admitted; and products of rapid growth necessarily require much water, or they fail in arriving at perfection. Most of the products of the kitchen garden contain a large per-centage of water, and to obtain



this, the plant sends its roots out foraging to a more distant locality if its ordinary domain be exhausted; but there is a distance beyond which the plant fails to extend its roots, and a more diminutive growth is the result. It is not, however, below the surface only that the plant seeks for nourishment, the humidity of the atmosphere and the night dews are alike grateful; and when these are less plentiful and there is less moisture in the soil, the less robust class of vegetation unquestionably suffers. Now, how to remedy this state of things has been for years a problem to the gardening world, but to say that it is solved in the present day would be wrong; for although something has been done, and very often indeed overdone (observe, I lay particular stress on this word), the result is not in any case so satisfactory as where Nature does the work in her own way.

At the time at which I write (the middle of August), the appearance of vegetation and that of the atmosphere seem to point to a drier summer than we have had for several years. In many places where water would be an acceptable boon to vegetation it can scarcely be had in sufficient quantity to meet the everyday requirements of domestic use. Water, then, being so scarce, it behoves us to make the most we can of it; and, unfortunately, where it is administered artificially in the way of supplying moisture to the roots of plants, it is often given in too great a quantity at one time or the reverse. It rarely happens that anybody watering a given plot of ground applies anything like the quantity that Nature would supply in the shape of rain; besides which, the advantages which a good watering gives are often lost from the soil being exposed to the sun, when that caking and hardening of the surface takes place which is alike injurious to vegetation and unsightly to the eye. All newly-planted surfaces should be covered, to prevent this caking and to retain the moisture; but it is my intention to advert rather to the quality of the water used than to the treatment of the soil after it has been applied.

Whatever may be the class of plants to which it may be necessary to give water, there cannot be a question that the moisture which Nature supplies in the shape of rain is most beneficial in every respect; passing through the air more or less rapidly, it absorbs certain gases, which are evidently essential to the well-being of the plants on which it falls, and the matters with which it is charged are alike grateful to the foliage of the plant and to its roots. Next to rain is water of a similar kind which has recently fallen and not been polluted by admixture with other substances, which rain water not unusually is when the roof on which it falls or the vessel receiving it presents anything which it can hold in solution. I have known a newly made tank turn water exceedingly hard and render it unfit for domestic use, and, of course, unfit for the requirements of plants also; while sometimes the roofs of certain buildings contain matters equally obnoxious. Mere soot arising from coals is not by any means the worst substance with which it comes in contact, although, except in certain cases, I am not aware of any good it does. Roofs and tanks are not the only causes of contamination in rain water, for sometimes in ponds when formed in clay containing a pernicious substance, this is imparted to the water. Clay is not by any means of so pure and innocuous a nature as is sometimes supposed; neither is sand, for I have seen a kind of coarse gritty substance that had nothing particularly poisonous in its appearance, and yet it would kill deep-rooted weeds when laid on a pavement or other place where they were. Of course, no one would think of using water coming in contact with a substance like this. Certain salts also abound in some soils, which render the water falling on them far from beneficial to vegetation. Therefore, taking all cases into consideration, it is perhaps more seldom than most people are aware that rain water is preserved in store in anything like its natural purity.

Although water from tanks, reservoirs, or ponds is sometimes impure, it is nevertheless most grateful when Nature denies us the refreshing influence of rain. Next to rain water is that from streams and brooks that has been duly exposed to the air, and which does not injure the vegetation among which it passes. River water is often turned to good account in irrigation; and happy are they who, in the dry scorching weather of the present season, have a stream sufficiently elevated above them to insure a supply for more urgent purposes. River water is, however, not always innocuous. Sometimes it is charged to an undue extent with iron, in which case the bed on which it runs is red with rust, and such water can only be safely administered to such plants as delight in a soil in which iron is found in abundance—as to Rhododendrons, for instance; but for domestic uses, I believe such water is by no means improper, and it is, perhaps, more wholesome than that containing chalky matter. It should, however, be more sparingly used amongst plants than water of another kind, if such can be had; although, perhaps, it is as good as the generality of well water, and much less hurtful than some of it is when used direct from its source.

Well water ought to be used very sparingly, and not at all for watering delicate plants, until it has been exposed to the atmosphere for a few days in any open vessel, the more shallow the better. It not infrequently happens, however, as in the present season, that well or spring water is the only kind to be had, and that even that is far from plentiful; hence it becomes necessary to soften it by exposure before using, which, as above stated, is best done in shallow vessels, or, if in deeper and larger, then longer time will be required. In whichever way water is exposed, it is hardly necessary to remark that in periods like the present, with the dry arid atmosphere acting upon it, a considerable loss in quantity will take place; but this cannot be avoided, and as water must be had for the purpose of furnishing newly planted things with moisture to start with, every care should be taken to economise as much as can be what supply there is. A careless labourer, thinking that excess is liberality, will pour more water into the heart of a newly planted Broccoli than would serve a dozen, and repeat the same dose in a day or two, never thinking that the roots of the

plants he is operating on are thus placed in a temperature like that of February, while the top is enduring tropical heat. It would certainly be better where practicable to use warm water. If well water must be used let it be heated to the temperature of the atmosphere, and, after watering a plant with it once, let the latter be surrounded with dead moss, leaf mould, or very short dung for a time to keep in the moisture, which ought not to be allowed to escape.

I may add, in conclusion, that although water is an essential element for vegetation, yet when applied by other than natural means it loses half its value. It is best to imitate Nature, and when it appears that a good watering is required, let it be done when rain is falling, assuming, of course, that the quantity of the latter is not likely to be sufficient. Shading the ground by some artificial means is also beneficial, and at the same time not allowing any crops that are at all likely to withdraw nourishment from the ground to remain on it a day longer than necessary. The same rule holds good with regard to thinning crops; and in fact anything and everything that will tend to retain moisture in the ground and obviate the necessity of watering ought to be taken advantage of, so that the latter need only be resorted to when it can no longer be done without.—J. R.

#### NON-PRUNED APPLE TREES.

FRUIT trees appear to indulge in queer vagaries about Grange-over-Sands. It takes other people three or four years at least to judge of the effect of the non-pruning of Apple trees, but Mr. Waiting can settle the matter in as many months. In spring he told us he proposed leaving his trees unpruned, and July is hardly out before he sends the results. Wonderful! But this is not all. His fruit trees are as sharp as their master. Mark—"The unpruned last summer's shoots commenced to swell at the tip, many showing blossom. Now, of course, they are bearing fine fruits where I have not removed them by pruning." Now everyone who has pruned an Apple tree knows, or ought to know, that the Apple never does bear on the last summer's shoots, except, as Dr. Lindley says, "accidentally." In other words, the shoots which grew in 1883 cannot produce fruit till 1885; but Mr. Waiting says "all" the varieties he names are bearing fine fruits on the last year's shoots! The first year leaf buds only are produced on the young Apple shoot, the second year fruit buds, and the third year fruit. It is true that some Apples which produce long annual growths do not always furnish their whole length, though they will produce sufficient buds, and in orchard trees which have room these bare places are of no consequence; but those who advocate the very least pruning advise such long shoots to be shortened to from a half to one-third of their length. Non-pruners do not advocate letting trees grow wild, which seems to be the idea of some who have half grasped the subject. Waiting to hear an explanation of the unnatural tendencies of Mr. Waiting's Apple trees, I subscribe myself, very properly, I think, in such a case—NON-BELIEVER.

#### THE GREAT WELSH DAFFODIL SIR WATKIN.

SOME discussion having arisen concerning this fine Daffodil, which, it will be remembered, was first shown at Kensington under the name of James Dickson, and certificated by the Floral Committee, Mr. Brockbank has given the following account of its origin in the *Manchester City News*. "It belongs to the *N. incomparabilis* group—another division of the *Narcissi* from that of *Horsefieldii*—having the crown much shorter than the perianth segments. It is, however, a giant, being quite twice the size of any other of the group. In colour it resembles the grandest of the yellow Daffodils, *N. lorifolius* Emperor, and it might easily be mistaken for it at first sight, the chief differences being in its having a shorter tube, and that its chalice is held aloft without drooping. The size of the corolla and the colours of both tube and perianth segments exactly resemble those of *N. Emperor*. It is a singular fact that for sixteen years this grand Daffodil was grown in quiet gardens without any knowledge of its great value and it comes upon us now as a novelty when there are at least 10,000 bulbs available.

"For this Daffodil we are again indebted to a Whitefield man, Mr. William Pickstone, who, I believe, was born at Whitefield, and was for some years a resident there, and he is still chairman of a manufacturing company in the neighbourhood. Some sixteen years ago Mr. Pickstone was engaged in mining operations in Wales, and purchased property in Merionethshire with this object: When he entered upon his property there, this Daffodil was growing in the garden; a chance seedling indeed, for no one knew how it came there or what was its parentage. This is very different from what your correspondent considers the parallel case in *N. Horsefieldii*, which was no chance, but a carefully raised seedling, as we have seen in your columns. Mr. Pickstone saw its merit, and carefully nursed the foundling, and when he shortly afterwards removed to London he took the bulbs with him and grew them in his garden there. Some six years ago he bought an estate at Maesmynan, near Caerwys, in North Wales, and to this place the bulbs were removed. Caerwys is a high-lying valley between Moel Vamma and the sea, and here the Daffodil spread and grew amazingly. The soil was a strong loam and was full of pebbles, and in it the Daffodils appeared to be quite at home. They were to be found in thousands, almost in a wild state, amongst the Rhododendron bushes, and even in the woods. The villagers also got odd bulbs, so that the cottage gardens at Caerwys also contained them. It was the same at the place of their origin, so that in Merionethshire they abounded; and yet neither Mr. Peter Barr, the high priest of Daffodils, nor Mr. Burbidge, the great writer upon them, knew anything about this Daffodil.

"Two years ago a dealer in flowers from Shudehill Market was driving past the Maesmynan gardens when he saw the hosts of Daffodils in bloom. Having an eye to business he sought out the gardener and bought 10s. worth of the blooms, and these shortly appeared in our florists' windows. They proved saleable, and were dealt in during the season. I remember seeing



these flowers in Mrs. Mason's windows, but was told it was a new sort, and the bulbs were not on sale, and so I took no further notice. This year Mr. Pickstone himself came over to sell his blooms, and so many were there that in a single week he delivered over 5000. He next began to talk about selling bulbs, and Mrs. Mason bought a lot for her own purposes, and she sold a good many more. This was before it was seen that any great value was in them. Mr. Pickstone slowly realised the fact that he held a valuable and unique Daffodil, and before he did so Messrs. James Dickson & Sons of Chester had sent blooms up to the Horticultural Society of London, named James Dickson. Mr. Pickstone objected, and the plant was re-named by him Sir Watkin, at my suggestion. Messrs. Dickson afterwards bought the stock, and agreed that the name should be "Sir Watkin," and there the matter now stands.

"There is a great future before this Daffodil, but whether or not it will retain its size, which is its chief merit, remains to be seen. I sometimes fancy that it owes its size to the healthy surroundings of mountain and sea air and kindly soil, and that it will soon relapse under cultivation to the usual size of such Narcissi."

#### TROVEREN FRONTIGNAN GRAPE.

Will you allow me to say that the Grape I was referring to on page 114 was Muscat Hamburg, not Mrs. Pince? I have some good bunches of both. My experience of the Troveren Frontignan does not agree with that of your valuable correspondent "Thinker," for I find it quite as productive as the Muscat of Alexandria, but the berries are not nearly so large. I have cut the smallest bunch of Troveren Frontignan, weighing 1 lb. 5 ozs. I have some that will turn the scale at 3 lbs., and a good crop.

I thank your correspondents for their information, also yourself for your courtesy in replying to my letter.—A. J. B.



A CORRESPONDENT writing from Yorkshire observes:—"With reference to the HEN-AND-CHICKENS MARIGOLD, of which mention has been made the last two weeks in your Journal, it may interest you to know that in our garden one plant in a bed of Marigolds has borne four heads of hen-and-chickens blossom. There are no Hen-and-Chickens Daisies in this garden."

— A HIDDEN LUXURY.—Not very many years since Tomatoes were known as Love Apples, and were regarded as poisonous. Last year the canning establishments of the United States put up 52,322,952 cans of Tomatoes.

— "M. S." writes:—"THE BERMUDA LILY, or EASTER LILY, the charming species, being sent out under the name of L. Harrisii, is certainly the most handsome of the L. longiflorum section, and of which it is supposed to be a variety. For cultivation in the open air this elegant Lily promises well, and from its sturdy habit, strong-textured leaves, and free-flowering habit is undoubtedly one of the greatest acquisitions to gardens of recent years. It grows much taller than the ordinary L. longiflorum, and having larger and longer flowers of an exquisite spotless white. The variety is found growing in the island of Bermuda, where it is said to produce from ten to twenty flowers in each head, and to all appearance this will be no difficult feat under cultivation, as shown by the increased strength of the spikes since last year. We grow it in a peat bed well shaded from the midday and afternoon sun, giving no protection in winter."

— Mr. W. JENKINS, The Gardens, Aldin Grange, Durham, writes "An error occurs in the report of the BISHOP AUCKLAND SHOW in the last issue of the Journal, where it is stated that 'Mr. Westcott was awarded the first prize for six bunches of Grapes, the same exhibitor being first with a Queen Pine, Peaches and Nectarines.' I am not quite sure what prizes were awarded to Mr. Westcott, further than I know he was second with the six bunches of Grapes, but I was awarded the first prize for each of the following:—Collection of fruit, eight dishes, collection of six bunches of Grapes, two bunches Black Hamburg, one Melon, one dish of Peaches, and one dish of Nectarines."

— "A GARDENER" writes:—"The YELLOW GROUND CARNATIONS raised and sent out by Mr. C. Turner of Slough are most useful for gardeners who have a supply of cut flowers to keep up through the month of August. This month is the season for layering to get a good supply for blooming next season. They are best grown in pots, and in an airy light greenhouse."

— A GOOD POTATO.—When cut into the colour should be yellowish white; if it be a deep yellow it will not cook well. There must be a considerable amount of moisture, though not enough to collect in drops and fall off, even with moderate pressure. Rub the pieces together, and if it is good a froth will appear around the edges and also upon the two surfaces after they are separated. This signifies the presence of a proper quantity of starch; the more froth the more starch, and consequently the better the Potato; while the less there is the poorer it will cook. The quantity of the starchy element may also be judged by the more or less ready adherence of the two parts. If the adherence be sufficient for one piece to hold the other up, that fact is evidence of a good article. These are the experiments usually made by experts when buying Potatoes, and are the best tests that can be given short of boiling; but even they are by no means infallible.—(*Irish Farmers' Gazette*.)

— GROWTH OF FUNGUS.—A large fungus described as a Mushroom has grown on the hard floor of a Dublin kitchen; it measures 8 inches in height, fully 20 inches round the brim of the cup, and having a stalk 3 inches in circumference. The proprietor of the house states that last year a growth of nine "Mushrooms" appeared in his kitchen. He cut them down as being a nuisance, but this year sixteen much larger sprang up, of which the one described is the largest.

— "THE ILLUSTRATED DICTIONARY OF GARDENING," 170 Strand. Part 9 of this work contains the articles from Brussels Sprouts to Caleana. It is freely illustrated, and in addition references are given with the description of many plants to figures in other works. The latter is a decided improvement, but in one case it would appear that the work is assuming too much of the character of a catalogue—namely, in the case of the Caladiums an enormous number of varieties are described, the majority of which will probably in a few years be obsolete.

— CUCUMBER ROYAL WINDSOR.—Mr. Lockie of Oakley Court Gardens, Windsor, has long been noted as a grower of fine Cucumbers, and several good varieties he has raised have taken a prominent position in general favour. One of his most recent additions is the Royal Windsor, which is a really handsome variety, and one that could scarcely be surpassed when shown as it was recently at the Maidenhead Show. Long, even, clean and handsome fruits were there staged by Mr. Lockie; and in a class of nine competitors, all of whom had good fruits of such varieties as Carter's Model and Telegraph, he was easily first. Blue Gown, a much older variety raised by Mr. Lockie, is still a favourite with many growers, and we recently saw an excellent crop of this variety in a market-growing establishment where it is prized for its prolificness.

— "TOURIST GUIDE TO THE CONTINENT" (125, Fleet Street).—This useful little work, edited by Mr. Percy Lindley and issued by the Great Eastern Railway Company, is devoted to a review of the chief attractions furnished by tours through Holland, Belgium, Germany, and Switzerland. Historical sketches of the principal towns are given, together with sepia and pen-and-ink drawings of the scenery and most remarkable buildings. As in the other works of similar character by Mr. Lindley, a great amount of valuable information for tourists is contained in the notes on the hotel accommodation and other matters at the various cities.

— "PICTURESQUE WALES" (59, Fleet Street).—A handbook of the scenery accessible from the Cambrian railways, by Godfrey Turner, has been issued officially, and contains a graphic and interesting description of the most picturesque and favourite resorts in the districts traversed by these lines. The book is liberally illustrated with excellent engravings, and several good maps are given, showing the connection with other lines of railway.

— INTERNATIONAL INVENTIONS EXHIBITION FOR 1885.—The prospectus of the above Exhibition, to be held next year, has now been issued, and gives full particulars as to the regulations and classification of the exhibits. There are thirty-four groups, the first of which is devoted to agriculture, horticulture, and arboriculture, to include all kinds of improvements in appliances, machinery, hothouses, heating apparatus, &c. The other groups are provided for almost every imaginable branch of trade in which machinery is employed, one division of three groups being appropriated to music. Her Majesty the Queen is Patron, and the Prince of Wales President. The Executive Council, appointed by the Royal President—having for Chairman Sir Frederick Bramwell, F.R.S., Vice-President of the Institute of Civil Engineers, and for Vice-Chairman the Marquis of Hamilton—is composed of Sir Frederick Abel, C.B., Mr. I. Lowthian Bell, F.R.S., President of the Institution of Mechanical Engineers, Mr. Birkbeck, M.P., (Honorary



Treasurer), Colonel Sir Francis Bolton, Sir Philip Cunliffe-Owen, C.B., C.I.E., Prof. Dewar, F.R.S., Mr. Joseph Dickenson, Sir George Grove, D.C.L., Mr. E. W. Hamilton, Mr. Henry E. Jones, M.Inst.C.E., Mr. W. H. Preece, F.R.S., Sir E. J. Reed, M.P., F.R.S., Prof. Chandler Roberts, F.R.S., Mr. John Robinson, Mr. Warrington W. Smyth, F.R.S., Dr. Stainer, and Mr. R. E. Webster, Q.C., with Mr. Edward Cunliffe-Owen as Secretary. Mr. J. R. Somers Vine will be the City and official agent. The idea upon which the Exhibition is planned is not to bring together a mere collection of models of inventions, but rather to illustrate the progress which has been made in the practical applications of science during the past twenty years. In order to carry out this intention the Council will, as far as possible, confine the exhibits to processes and appliances, products being admitted only where they are themselves novel or where their introduction is required to make the purpose or advantages of that which is new in any process more interesting and intelligible. It is not proposed to allot space for manufactured goods unaccompanied by any illustrations of the process of manufacture. Generally it may be said that, as far as is practicable, inventions will be shown by models, with, in the case of models of entire machines, actual specimens of the portions improved under the exhibitor's patent, and when the invention relates to parts only the whole machine will not be admitted, unless, indeed, the improvement effected cannot be sufficiently shown without the exhibition of the entire apparatus.

— **NEW MELONS.**—"W.X." writes: "It seems strange that gardeners should continue to send so many new Melons to the meetings of the Royal Horticultural Society when so few are now honoured with certificates. There appears to be something approaching to a mania for raising Melons, and some of the raisers seem to think that by giving an elaborate record of the parentage they will secure recognition. I sometimes think that it is almost a waste of time, for there are sufficient really good Melons in cultivation now to satisfy anyone, the chief difficulty being to keep these true. After all, in the matter of flavour very much depends upon culture and proper ripening, and for my own part I think there is none to surpass the old Cashmere when well grown. In any case, those who are anxious to figure as Melon-raisers should exercise some discretion in the exhibition of new varieties, well testing their merits previous to submitting them for honours, and if this were done judges and committees would not be troubled with so many."

— **BUTTONHOLE BOUQUETS.**—A young Scotch gardener desires a few hints for the making-up buttonhole bouquets for competition, and the best flowers to use; he will be obliged to those of our readers who can give him information on the subject.

— **WHAT** a delightful evening plant is the **MARVEL OF PERU** grown as Mr. Major grows it at Croydon. He has huge bushes of it in tubs, in some instances having two or three plants in a tub, so as to have a variety of colour. These bushes produce hundreds of flowers, rich and variable in colour. In the daytime the flowers are closed, and there is little more than a mass of green, but towards evening they expand and fill the air with fragrance, rendering the garden delightful when it can be enjoyed in the cool of the evening. The perfume is more powerful than that of the Night-scented Stock, or *Nicotiana affinis*, both of which are grown for the same purpose. The Marvel of Peru bushes are stood on the terrace and along the sides of the walks, the tubs of the plants, which are very large, being preserved from year to year. Any number of plants can be raised from seeds, and they will render any garden sweet during the evenings of summer and autumn.

— In the same garden brightness is imparted by growing the Red-hot Poker Plant—*TRITOMA UVARIA*—in pots. They are in 10-inch pots, and the "pokers" are among the finest we have seen, the stout stems being 7 or 8 feet high, and the orange-scarlet flower heads nearly a foot long. Arranged with other plants on the terrace they have a telling effect and continue attractive for weeks. Good soil, very copious supplies of water with liquid manure frequently, are requisites to support such fine spikes of dazzling flowers.

— In an article in another column reference is made to the care that has been taken in **PLANTING CONIFERS** at Dropmore and the excellent results of such care. Mr. Major points as an example of the importance of good and deep stations of soil to two examples of *Pinus sylvestris*, both of the same age and planted at the same time some twenty-five years ago, one merely being put in the ordinary gravelly soil without any preparation, the other having several feet in depth of good soil to grow in. The

former is a stunted, almost a miserable example, not 20 feet high; the other is a stately handsome specimen, 50 feet high, with a straight, stout, clean stem, well furnished with healthy branches, and a prominent ornament of the garden.

— **THE Dahlia season** is fast approaching, the plants are growing freely, and nothing but a softer atmosphere and cooler nights are needed to bring out good blooms. We are asked to remind those who are interested in the **GRAND NATIONAL DAHLIA SHOW** to be held at the Crystal Palace on September 5th and 6th, that the entries should be sent in during the ensuing week, along with the amount of the promised subscriptions when not already paid. Further subscriptions, we may add, are much needed, and those who love the Dahlia should remember that it is their privilege to furnish the necessary aid. Both entries and contributions should be sent to the Hon. Secretary and Treasurer, Mr. T. Moore, Botanic Gardens, Chelsea, S.W.

## MAIDENHEAD SHOW.

AUGUST 14TH.

IN many gardens of moderate extent as good examples of cultural skill can be seen as in establishments of much greater pretensions, and it often happens that in the smaller garden there is a much more noticeable uniformity of merit in the several departments than can usually be the case where the gardener's attention is spread over a much more extensive charge. It would seem to be in some respects similar in the case of horticultural shows; for though the leading exhibitions where large prizes are offered generally abound in what is termed "fine produce," yet smaller shows are often quite as satisfactory as regards the cultural skill displayed in the exhibits. One of the best examples of this kind that we have recently seen was at Maidenhead on Thursday last, when the annual Exhibition of that pretty town was held in Kidwells Park. The prizes offered are of moderate amount in all the classes, but the district is a good one, the local growers are proud of their Show, and do their best to render it what it undoubtedly is—a success. Plants, flowers, fruits, and vegetables are all equally and admirably represented, and very rarely do we see an exhibition in which the quality is so uniform. True there were few of the enormous specimen plants to which visitors at the metropolitan shows are accustomed, but the majority of the smaller examples were distinguished by a most satisfactory freshness and high colour in the case of the fine-foliage plants, and abundance of blooms on the flowering plants. Fruit, too, was shown in good condition, except perhaps a few white Grapes; and vegetables were most creditable to the growers who staged them.

Two tents sufficed to contain the exhibits, the larger one being occupied with the plants, flowers, and fruits, and the other with vegetables and cottagers' productions, which showed the prevailing good quality of the amateurs' and gardeners' contributions.

**PLANTS.**—Two of the most interesting of the classes devoted to plants were those for Grapes arranged for effect, and though these were of moderate size some very tasteful arrangements were contributed. The principal was for a group to occupy a space 12 feet by 10 feet, in which there were five most commendable exhibits. Mr. R. H. Taylor, gardener to James Watson, Esq., Langley House, Slough, secured the first position with most graceful group—light yet well filled, and bright without an undue preponderance of colour. The groundwork was formed of small *Adiantums* with *Caladiums*, *Alocasias*, and *Coleuses*, the central plants being some tall *Cordylines* and *Cocos*, around which were freely grouped *Statice*s, *Tuberous Begonias*, *Gymnogrammas*, and *Francoa ramosa*, the last being very liberally employed with excellent effect. The margin consisted of *Adiantums*, *Selaginellas*, *Tradescantias*, and *Panicum*, forming a neat but not formal finish to a most praiseworthy group. The second position was accorded to Mr. A. Aitken, The Gardens, Richings Park, Slough, who also had a very tasteful group of somewhat similar style to the first, the *Cocos* and *Araucarias* constituting the tallest plants in a bed of Ferns, with well-coloured *Crotons*, *Caladium argyrites*, *Kalosanthes*, *Gladiolus*, *Coleuses*, and *Ericas*, margined with *Panicum*, *Tradescantia*, *Lobelias*, and *Selaginellas*. Mr. Elliott, gardener to J. Hibbert, Esq., Braybrook Lodge, followed closely with a very bright and showy group—*Gladiolus*, *Vallotas*, *Fuchsias*, and *Achimenes* being liberally employed. Extra prizes were also awarded to Mr. Lockie, Oakley Court Gardens, Windsor; and Mr. G. Phippen, Reading, both of whom had pleasing groups, the last-named including in his arrangement several fine plants of the beautiful *Lilium speciosum album*, flowering most freely. Another class was provided for a group 6 feet by 5 feet, in which the competition was less keen, though the three groups entered were most creditable. The premier honour was adjudged to Mr. G. Geyve, gardener to Mrs. Langworthy, Geys House, Holyport, for an elegant arrangement, in which *Celosias*, *Gloxinias*, *Dracenas*, *Cockscombs*, *Allamandas*, and *Variegated Grasses* predominated, with a central *Cocos* and a groundwork of Ferns. Mr. Moore, gardener to Mrs. Haig, Bray Court, and Mr. W. Broughton, nurseryman, Maidenhead, were respectively second and third with more formal but pretty groups.

Stove and greenhouse plants were not very largely shown, but some neat and well-grown specimens were included in the collections of four. Mr. Aitken won the chief position with *Croton Johannis*, 5 feet high and beautifully coloured—a really handsome plant; *Lagerstrœmia indica*, 7 feet high, large, tree-like, and abundantly flowered; *Allamanda Schottii*, a globular specimen, bearing numerous large flowers; and *Kentia Fosteriana*, strong and healthy. Mr. Geyve followed, his plants being *Hydrangea*; *Pandanus Veitchii*, large and healthy; *Clerodendron Balfourianum*, and *Latania borbonica*. The best single specimen was a wonderfully fine *Myrtle* (*Myrtus communis*) shown by Mr. Bridgeman, gardener to T. S. Cocks, Esq., Thames Bank, Great Marlow. The plant was about 10 feet high, and as much in diameter, in splendid healthy condition, and flowering most abundantly. Another plant of similar size was also shown from the same garden, forming a handsome pair. Mr. Aitken took the second place with a globular-trained *Clerodendron Balfourianum*, about 4 feet in diameter, and flowering freely.



Mr. Taylor was third with *Erica Austiniana*, of similar dimensions and fairly well flowered.

Foliage plants, including Ferns, were similarly well shown. In the class for twelve variegated plants Mr. Elliott was the only exhibitor, being awarded the first prize for plants of medium size, but in excellent health and very handsome. Particularly notable were *Aralia Veitchii*, *Areca lutescens*, *Dracæna Cooperi*, *Maranta princeps*, *Croton pictus*, *Croton Baron James Rothschild*, and *Dracæna Shepherdii*. With one specimen fine-foliage plant Mr. Aitkin was the premier exhibitor, having a beautiful example of *Croton Queen Victoria*, 4 feet high and as much across, fresh and beautifully coloured. Mr. Elliott was second with *Croton Veitchii*, 6 feet high and very bright in colour; Mr. G. Hopkins, gardener to J. W. Burrows, Esq., The Elms, Cookham, taking the third place with *Latania borbonica*, 5 feet high, well developed, and clothed with fronds to the base. The Ferns deserve much praise, as in healthy vigorous freshness they could scarcely be surpassed, though larger specimens are frequently seen. Mr. R. H. Taylor had the best six handsome examples of *Adiantum farleyense*, 4 feet in diameter; *A. Lathomi*, similar; *A. cardiochæna*, very strong; *Gymnogramma chrysophylla*, healthy and brightly coloured; *Davallia polyantha*, with very vigorous fronds; and *A. cuneatum*, fresh and beautiful. Mr. Aitkin secured the second place, his plants comprising a large *Adiantum cardiochæna*, 6 feet in diameter; *Pteris serrulata cristata*; *Gymnogramma peruviana argyrophylla*, of medium size, but extremely healthy; *Davallia dissecta*, *Pteris scaberula*, and *Microlepia hirta cristata*. Mr. Geyve was third; his best examples were *Adiantum formosum* and *A. cuneatum*.

Seven admirable collections of six table plants were shown, and with scarcely one exception they were all well fitted for the purpose for which they were intended, the only difference being in the neatness of the pots and the surfacing of the soil. Mr. Phippen was adjudged first honours for graceful little plants of *Dracæna gracilis*, a dark narrow-leaved variety, and *Cocos Weddelliana*. These were shown in pairs, which was permitted by the terms of the schedule, though it is rare that this is the case, as six distinct varieties are usually required. They, however, well deserved their position, being neat, fresh, and healthy, without being too large. Mr. Aitkin was second with a more diversified and almost equally elegant collection, comprising *Aralia Veitchii*, *Croton Rodeckianus*, *Cocos Weddelliana*, *Dracæna gracilis*, and *Aralia elegantissima*. Mr. Lockie took the third place with *Dracænas hybrida*, *nigra rubra*, *Guilfoylei*; *Crotons Weismanni*, *interruptus*; and *Pandanus Veitchii*. A collection from Mr. W. Potter, gardener to C. Laxton, Esq., Riverdene, Cookham, of *Dracænas* and *Crotons* was highly commended. Cockscombs were capably shown by Mr. Lockie, who was first in the class for six plants, with dwarf sturdy specimens about 1 foot high, the "comb" being as much in diameter and of rich colour. Mr. Elliott and Mr. Hopkins were second and third. Fuchsias were contributed by Messrs. E. Jones and Hopkins, who were awarded the first and second prizes, the plants in both collections being rather thin, the first much the best flowered, and the second more vigorous and better clothed with foliage. With Tuberous Begonias Mr. Gardner, gardener to C. Hammersly, Esq., Bourne End; and Mr. Geyve were first and second respectively for well-flowered plants.

**CUT FLOWERS.**—The most noteworthy of the classes in this section was that for bridal bouquets, of which several tasteful examples were contributed. Mr. Phippen was deservedly placed first with one of the charming arrangements so frequently seen at the Reading Show. The flowers employed were *Stephanotis*, double white *Primulas*, *Lilium speciosum album*, *Gardenias*, white *Asters*, with Fern fronds and a few leaves of *Caladium argyrites*. Mr. A. Bridgeman, gardener to T. S. Cocks, Esq., Thames Bank, Great Marlow, was second, his bouquet chiefly consisting of *Tuberoses*, *Stephanotis*, and *Francoa ramosa*; Mr. Broughton following with a pleasing arrangement. In the class for three buttonholes Mr. Phippen was again first, the flowers he employed being *Rose buds*, *Bouvardias*, and *Pelargonium echinatum*. Mr. Potter was second, *Bouvardias* and *Orchids* constituting the chief flowers used. Mr. Tranter was third with some pretty *Rose buds*. Special classes were also provided for cut flowers of the following:—Twelve *Zinnias*, Mr. Elliott took the lead with fine flowers, followed by Mr. F. W. Chaundry, Brampton House, Great Marlow. Of *Asters* the principal exhibitors were Messrs. Phippen, Elliott, J. Mason, gardener to C. C. Ellis, Esq., Shottisbrooke; and W. Taft, gardener to H. Norstworthy, Esq., Clarefield House. *Dahlias* were shown in admirable condition, Messrs. Geyve, Elliott, and Dixon being the prizetakers for single blooms, all very bright and attractive. For twelve Show *Dahlias* Mr. Tranter was placed first with beautiful blooms—fresh, clean, and substantial. *Roses* were shown by Mr. J. H. Powell, gardener to Montague Williams, Esq., Farnham Royal, who was first with neat blooms; Mr. J. Wills, Fernhill, Winkfield, and Mr. Tranter securing the other prizes.

**FRUIT.**—Several classes were devoted to fruits, and in most of them the competition was good and the quality of the exhibits satisfactory. For six dishes Mr. Goodman was first with Foster's Seedling and Black Hamburgh Grapes fairly coloured, fine Moorpark Apricots, Dagmar Peaches, eighteen handsome fruits, and about the same number of Dryden Nectarine, and a well-netted Victory of Bristol Melon. Mr. H. Cakebread, gardener to Sir Philip Rose, Raymers, was second with fine Hale's Early Peaches and Black Hamburgh Grapes of good colour. Mr. Aitkin was third, his best dishes being Pine Apple Nectarines, very handsome. With four dishes Mr. Lockie took the lead, showing Buckland Sweetwater Grapes, large in bunch and berry; Hero of Bath Melon, finely netted; Red Magdalene Peaches, large and of rich colour; and a dish of fine Figs. Mr. Bridgeman was second, having excellent examples of Buckland Sweetwater Grapes and Royal George Peaches; and Mr. D. Paxton, gardener to Lady Boston, Taplow, was third with rather green Muscat Grapes, but good Ischia Figs. Mr. Hopkins had the best three bunches of Black Hamburgh Grapes, very fine in berry, and excellently coloured; Messrs. Moore and Cakebread following with smaller and less well-ripened samples. In the Any other black variety class Mr. Goodman gained first honours with Black Alicante, beautifully coloured. Mr. J. Wells, Fernhill, was second with Cooper's Black, fine bunches and berries; and Mr. Blackhall was third with Black Prince, fairly good. With three bunches of Muscats Mr. Geyve secured the first position for medium-size bunches, well coloured. Mr. Cakebread followed with small well-ripened bunches, and Mr. Wright was third with much larger but green samples. In the Any other white variety class Mr. Bridgeman deservedly won the

leading prize with Buckland Sweetwater, large in bunch and berry, and handsomely coloured. Very rarely indeed are such good examples of this variety seen at exhibitions. Mr. Goodman took the second place with large bunches of Foster's Seedling. Equal third prizes were awarded to Mr. Cakebread and Mr. Wells for Trebbiano and Buckland Sweetwater, both good specimens. Peaches and Nectarines were well represented, Mr. Lockie leading in the former class with fine Noblesse Peaches, followed by Mr. Wright, gardener to W. H. Grenfell, Esq., Taplow Court, beautiful fruits of Late Admirable, and Mr. Taylor with Stirling Castle. In the Nectarine class Mr. Goodman was first with Dryden, and Mr. Jones second with Violette Hâtive. Plums, dessert and culinary Apples, Melons, outdoor fruits, Cucumbers, and Tomatoes were all well shown, the prizes being secured by the exhibitors already named.

**VEGETABLES.**—There was an excellent display of Potatoes and Onions in the classes provided by the Society, but the principal vegetable exhibits were those in the special class for nine dishes, for which Messrs. Sutton and Sons, Reading, offered three prizes of £2 2s., £1 1s., and 15s. There were nine exhibitors in this class, and the whole of the collections were remarkably close in merit—even, clean, admirable samples. Mr. T. Lockie won chief honours for a superb collection of well-grown vegetables, comprising fine solid Reading Onions, beautiful fruits of Sutton's Perfection Tomatoes, clean handsome Negro Kidney Beans, handsome even Royal Windsor Cucumbers, Ashleaf Potatoes, Sulham Prize Celery, Snowball Turnips, Improved Champion Carrots, and Vegetable Marrows. Mr. Elliott was an extremely close second, his dishes being fine Hathaway's Excelsior Tomatoes, large and handsome Giant Rocca Onions, Cauliflowers, Sutton's Latest of All Peas, Intermediate Carrots, and Snowball Turnips. Mr. Cakebread was third with Hathaway's Selected Tomatoes, Cream Vegetable Marrow, Tripoli Onions, Veitch's Ashleaf Potatoes, Canadian Wonder Beans, Globe Artichokes, Early Nantes Carrots, and British Queen Peas. A very close and beautiful collection was also shown by Mr. G. Goodman, which included some extremely fine Trophy Tomatoes and Canadian Wonder Beans.

### TASTE IN FLOWER GARDENING.

No time of the year is better than the present for reviewing flower garden arrangements of all kinds. We have the plants themselves before us—impartial exhibitors of their own defects or beauties, and quite as impartial in showing any defects in the judgment of the person responsible for their arrangement, while an opportunity for a revision of past judgments is at the same time freely given. We are now so extremely rich in flowers suitable for decorative effects, that there is ample means for all purposes. As regards ordinary bedding plants, we are almost in a position to defy the weather of ordinary seasons. We can, as it suits the taste, have some "wild gardening," by employing Snapdragons, Marigolds, Marguerites, Pentstemons, early Starworts, Ox-eye Daisies, Japanese Windflowers, Vittadenias, Evening Primroses, Gladioli, &c., and have our gardens rough enough to please the most ardent aesthete. Or from the multitude of carpet-bedding plants we can select a few of the most choice, a few sub-tropical plants, a few from the hardy flower borders, and some of the old bedding plants, which, notwithstanding the hard names showered upon them, do not refuse to lend their aid in making gardens beautiful; and from all these combined, secure fine autumn display. I have always thought it would be a pity to turn out the ordinary bedding plants from our gardens in the same way as the few rubbishy plants were in bygone times turned out of their ill-kept borders; and I am glad to believe that there is no fear of such mishaps occurring. There is plenty of room in all country gardens for growing the few hardy plants really worth growing; plenty of room for Pinks and Carnations, for Daffodils, for Anemones, for Roses, for Phloxes, for lumpy Dahlias, and for tall-growing Hollyhocks without ousting the bedding plants—as they have been rather unhappily termed—from the position they have so long occupied.

Now it is only fitting that we should remember, in connection with these matters, that nothing can be said against bedding plants themselves. A yellow *Calceolaria*, a scarlet *Pelargonium*, and blue *Lobelia* are flowers which no one can be offended with; but if we mass the three flowers, or make lines of them in juxtaposition, then the result is often unsatisfactory. No matter how rules may be laid down as to the treatment of primary, secondary, and tertiary colours, it will only be the few who will be found capable of making satisfying effects out of their material. It would be just as unreasonable to expect a signboard painter to develop the picture of a high-class artist out of his material, as untrained gardeners to make the same effect as those who have trained themselves in their younger days in studying effects of arrangement, capability of flowers, and the peculiarities of colouring.

I am not going to lay down any code of rules for guidance in these matters, for the simple reason that rules are useless. Had we a strictly defined enclosure with the same surroundings in every case to make beautiful with a living picture, it would even then be difficult to lay down any rule; but, when the framing to every such picture varies—nay, to be more correct, when what we have to do is not so much to make a picture ourselves as to add one small feature to a grand ever-changing picture already formed, rules are impossible. In one garden it would not only be admissible but simply the only way to make effect to employ masses of primary colours very largely—blocks of yellow, or of crimson—while in another a very little yellow might be detestable. We may descend to the use of a particular bed, and where one man would make it a bright effective spot with common materials another would make it an eyesore. Nothing is commoner than crimson bedding *Pelargonium*, purple *Viola-Pansies*, and "Golden Feather." Mass the *Pelargonium* as a central block, band that with the *Viola* a widish band, and a very narrow line of the Golden Feather will not be out of place as an edging. There will be nothing vulgar about it, but, on the other hand, a simple and effective bed. Too little purple or too much yellow, however would completely alter appear-



ances. Yellow masses are best relieved with pink, or preferably blue of a lilacy shade. Blue, again, is never so effectively managed as with white or blue of a lighter shade. Blue is always best treated, not by way of contrast, but in harmony with other cool soft shades. A mass of blue, if too cold and depressing, is wonderfully brightened by the addition of a few white-leaved Pelargoniums with scarlet flowers dotted about the hed. As a rule, I think far too little blue is used in gardens. Properly treated, it can be made the base of most restful effect; a very little crimson and less of yellow is only necessary to give the required brightness. White is also a most important feature too often overlooked. In isolated heds almost anything can be planted so long as the honest principles of good taste are not violated; but here, as in other things, careful taste will show itself at once.

Another matter in connection with flower gardening is that of the change of flowers from year to year. Verbenas are hardly ever seen now, Calceolarias are scarce, and many other flowers well worthy attention are never seen in many gardens. Now what seems to me to be the best way of imparting interest to flower gardening is to break away from some of the novelties which have taken the place of these discarded plants and grow these once again. Man likes change—novelty—but he is also much attached to old flowers. Let us try something of this. In most gardens we can manage to keep the stock of plants in abeyance for a season while some old acquaintances have an innings, and most likely will make a good score.

To young men I may be allowed to offer this advice. Study flower gardening in its best aspects as much as you possibly have the means of doing. It requires as much training or more to lay out a garden of flowers with taste and without regularity as it does to manage any other department of garden work. Very much painstaking work is completely marred by a want of knowledge, which it is in the power of most young men to obtain if they study good models when they have opportunity of doing so. It hardly need be said again what has so often been written, that now is the time to arrange for another year's display—now the time to decide on the plants to use and the way to use them. Forethought in all garden matters is necessary, but I do not think it an exaggeration to say that in nothing does forethought prove of so much value as in this matter. We know exactly the kind and number of plants wanted, and under ordinary circumstances can work with precision to gain that point cheaply and without loss.—SYLVANUS.

### A DAY IN THE COUNTRY.

COMMENTING on the appeals for aid that are so frequent at this period of the year for affording "city arabs" a day in the country, a writer in one of the London papers thinks a longer period advisable. "The day," he says, "is rather a dissipated weary day, a bank holiday on a diminutive scale; an affair of crowds, shouting, and eating things of doubtful wholesomeness." Such was not *our* day; there was no crowding, no shouting, and the dinner in a "Royal" establishment was considered a splendid finish to an enjoyable ramble among the historical Burnham Beeches, the magnificent Dropmore Conifers, and the wide-spreading lawns of Cliveden.

At the close of an interesting ceremony at the "Healtheries" a few kindred spirits in solemn conclave assembled were invited by Mr. Harry Turner to leave Babylon just for a day, reach Slough by a certain train, and he would give them a drive in the country. True to time our genial guide, duly equipped, and with an ample commissariat, was at the rendezvous. "Stoke, Farnham Royal to Burnham," was the order, and through smiling cornfields, down shady lanes, past Stoke Poges church, immortalised by Gray in his famous Elegy, we spun, drinking in the sweet fresh air until we reached the halting place and had our first rest under the great gaunt Beeches, which, by the recent act of the Corporation of London, belong to the public "for ever."

Marvellous trees are these, relics of the primæval forest, with hollowed trunks like sentry boxes, and multitudinous branches as the result of pollarding. Tradition says that Cromwell was the lopper; but though he was no sentimentalist, and spared not what he wanted, there is no evidence that he pruned these Beeches. But there is another tradition far older than this, and less worthy of credence—that they were pollarded in the time of Canute eight and a half centuries ago. Whenever, and by whom they trimmed, they are wonderful relics. Many of them mere shells supporting a hundred branches, and in some instances other large trees are growing out of their capacious trunks. Yet these venerable trees are, as a rule, healthy and densely umbrageous, only a few bearing signs of approaching collapse.

Let us for a moment see what others say about the Beech. "There is," says Mr. G. W. Johnson, "no reasonable doubt of its being the Fagus of the Romans. Pliny says that this bore the sweetest of mast, that it was a nut enclosed in a three-angled rind, that hogs delighted in the mast, and that the pork they formed was especially wholesome. The fruit of no other European tree than that of our Beech agrees with those particulars. It has been concluded that the Beech is not a native of England, because Cæsar in his 'Commentaries' states that 'timber of every kind, the same as in Gaul, except the Beech and Fir,' are in Britain. If he had prefixed to that sentence 'I saw,' he would have truly recorded the extent of his knowledge; but he was not justified in writing so comprehensively, inasmuch as that he never penetrated into what are now our midland counties. He never advanced as far as that district which the Romans' successors—the Anglo-Saxons—named Buckingham, which, using Camden's words, 'is given to bring forth Beech trees plentifully, which the English Saxons in elder times called Bucken.' As early

as the times of Edward the Confessor, more than 800 years ago, the woods of Burnham in that county afforded pannage for 600 hogs. Pannage was the old legal term for the right to the food afforded to swine by the mast of the Beech and Oak, and there is little doubt that the still celebrated Burnham Beeches were then in existence. The Beech has a peculiar mode of revivification. Its trunk may be hollow—the wood entirely decayed—but one branch remaining vigorous thrusts down to the earth, along one side within the hollow, a slender stem, which roots and becomes another trunk.

The poet Gray observes that 'There is a character about the Burnham Beeches distinct from all others. They are not lofty, for they appear to have been headed down at some time or other, but they are of enormous size, and the pruning of the heads seems to have thrown a superfluous amount of vigour into the trunks. Nowhere else do the trunks of Beeches, as a rule, hurst into such strange forms, or so wreath their old fantastic roots on high. Every second Beech trunk here is a study for a painter.' They are still all that Gray described nearly a century and a half ago.

Gilpin remarks:—'Its trunks are often highly picturesque. It is studded with hold knobs and projections, and has sometimes a sort of irregular fluting about it, which is very characteristic. Its smoothness also contrasts agreeably with these rougher appendages. No hawk tempts the lover so much to make it the depository of his mistress's name. It conveys a happy emblem—

'—— crescent illæ; crescentis amores.'  
(As they increase; the loves increase.)

Virgil was right in choosing the Beech for its shade. No tree forms so complete a roof. If you wish either for shade or shelter you will find it best

'—— patulæ sub tegmine Fagi.'  
(Under the cover of a spreading Beech)."

The truth of that we experienced during our sultry day in the country.

Then the Beech has its uses; indeed it is one of the most useful of trees. In Switzerland mattresses are stuffed with its leaves. Its nuts yield an oil useful either as olive or lamp oil; and the cake which remains after the expression is a good food for fowls and pigs. The wooden shoes, *sabots*, worn by the French peasants are made of the wood; it is excellent for fuel, and vinegar (pyroligneous acid) is distilled from it. Turners form of it trenchers, bowls, and other utensils. Joiners and cabinet-makers employ it for furniture. If kept constantly under water it is as durable there as the wood of the Elm. The exterior rings of the wood are used for forming hand-hoxes. The millwright uses it for the cogs of wheels, and the wheelwright for spokes. In the coal mines it is used under the name of "Newcastle railing." Like the wood of the Lime it is used for piano sounding-boards. Tool-makers employ it for handles, and cask staves for dry goods are made of it.

So much for the Beech and the remarkable examples at Burnham. We are now off to

### DROPMORE.

There is nothing whatever gardenesque, nothing imposing in the approach to Dropmore. There is a pretty Swiss chalet-like lodge at the entrance to the road—not a trim carriage drive—passes through a wood or wilderness in which Gaultheria Shallon luxuriates in places as an undergrowth, the sprays being laden with herries, which it is said are tempting morsels to pheasants; here and there we see glints of colour in the ripening fruits of the Mountain Ash, but more of these anon. We are nearing the mansion, which seems emhossed in trees, and in a moment are awaiting the presence of the renowned octogenarian gardener, Mr. Philip Frost, who has occupied his present position for upwards of fifty years. Whether the celebrated Conifers or the planter of most of them constitutes the more remarkable features of Dropmore would be a difficult question to determine; but this much is certain, that linking them together, and having regard to their characters and associations, there is nothing equal in its way to the combination on the face of the earth. Here is a man who has struck cuttings of Abies Douglassi, tended and watched them into magnificent trees 80 or 90 feet high; who has raised Araucarias, guided them to maturity, gathered the seed from them and raised young plants; who is the "author," so to speak, of the most magnificent example of this tree in Europe; who carried an inch-high seedling of Pinus insignis from Chiswick nearly half a century ago ensconced between two thumb pots in his waistcoat pocket, as much prized as the present Superintendent of those gardens can prize his watch, and has watched the waistcoat-pocket tree attain a height of apparently 80 feet, with a hand of equal circumference, and a rugged trunk girthing 10 or 12 feet; who has grown Deodar Cedars from the smallest to the largest proportions, or to a height of 70 feet, and has sown the seed that produced the king of the trees at Dropmore, a Douglas Fir that towers above all others to a height of 120 feet. There is no record of any such results as these attained by a man who can still look upon his work.

We are now waiting his approach, nor need we be surprised to see a tottering silvery-haired relic of the past supporting himself on his staff, greeting his friends in faltering tones, and with drooping head listening intently for their reciprocations. This is what might reasonably be expected from a man who has worked so hard and so long, in heat and in cold; but let it be said, with all the emphasis possible, that the reality is as far as possible removed from the fancy picture. Here he comes—a sturdy, strong, thickset specimen, with a firm and springy step, ruddy countenance, clear resonant voice, sharp eye, and quick ear, with not a hair in his head changed from the normal colour of youth. Surely Her Majesty has few such subjects in her realms, and not one of them



has such a gardener. And a fine old English welcome he accorded to his guests—not a mere ceremonial bow and gentle lisping how-do-ye-do; but a hearty rollicking “Glad to see you, my boys! come along. Friend Turner here is no stranger; but Barron, here once more after sixteen years! and Dick, Douglas Dick, come at last? I’ll show him a ‘Douglas’ by-and-by, that I will; and these gents—we shall not be strangers long. One a private detective, did you say? Good, very good; eh, Barron? and the great provider at the Healtheries and the Palace, Mr. Roberts; and the other”—well, no matter, he is not worth naming; but there we all



Fig. 29.—Pollen-bearing cone of *Araucaria*.

were, trooping to the Conifers, the thermometer nearly 90° in the shade, and perhaps 140° in the sun, the guide leading the way so briskly that we were glad when he paused to give the history of some tree, or recount an event of the days of his youth.

And what stories of the past—episodes of sixty or seventy years ago—we listened to, the day of the month and year of each occurrence being ready to hand. This memory for dates is astonishing; of all the surprises at Dropmore it was felt perhaps as the greatest. We pass a long range of porcelain-fronted apiaries, a stretch of old-world glass structures with Vines and climbers half a century old, a row of Peach and Nectarine trees more modern, trained espalier fashion along the front of one of them bearing wonderful fruit; on the terrace huge bushes of the true old Tom Thumb Geranium, all ablaze; beds on gravel and beds on grass in the true bedding style, which it may not be generally known originated here, and that the Duchess of Argyle sent her gardener to see it in 1823; then “Donald Beaton and that party” thought it started at Argyle Lodge, but the author was Lady Grenville. On we go past herbaceous borders and come to the first Conifer, a truly grand Cedar of Lebanon, planted by Lord Grenville in 1794. We leave the lawn and enter the wilderness, coming shortly to a clearing—a lawn and flower garden among the trees, a charming and secluded spot. But the flowers; well, these are not ordinary flowers, or rather not ordinary flowers grown in the ordinary way. This might be called the Fuchsia garden, for nearly every bed contains a Fuchsia tree—a real tree, mind, with thick and gnarled woody trunk and spreading branches, under which we pass and admire the canopy of flowers. “Why, this is the old Riccartoni, Mr. Frost, is it not!” “Yes,” was the response, “it is; I raised it from a cutting fifty years ago, and I have planted it out in spring and taken up in autumn ever since.” And so with several others, one a telling example of *F. corymbiflora*, with spreading branches and pendent coral-like racemes swaying in the breeze. On the shaded side of the lawn in places where the ground is damp the most diminutive of Campanulas nestles in the grass, producing myriads of pretty blue flowers, quite a carpet of them. This is *Campanula hederacea*, which grows about an inch high, and is rarely seen so plentiful and thriving so well.

No time for lingering, however, and along the grassy drives we pass between thickets of Rhododendrons and hardy Azaleas, raised from seed by Mr. Frost before half the readers of these notes were born; planted, and now and for years past ripening and scattering their seeds, while the whole wood is one great nursery seed bed, and plants are springing up in millions. What a picture this wood must be in the spring! but it is a picture now. On every hand are masses of orange and red—dwarf bushes and big trees of the Mountain Ash, the branches bending to the ground with their loads of ripening fruit, imparting a richness—even a brilliancy—to the scene that nothing else could approach at this period of the year. Amongst the sombre Pines this brightness is most effective and indescribable, while it suggests forcibly that the ornamental properties of this tree are not half sufficiently appreciated.

The trees are thinner now, spaces necessarily wider, and the Conifers appearing. The first, like an advanced sentinel to arrest attention, is *Abies grandis*, grand indeed in symmetry and health, but yet young, and not perhaps more than 40 feet high. Then we pause, as all must pause, at the beautiful *A. Albertiana* planted in 1861, and 30 to 40 feet high. Messrs. Veitch in their splendid work on the Coniferae scarcely do justice to this beautiful Fir, which they say is “scarcely distinguishable from the common Hemlock Spruce.” It is strikingly distinct and very superior, and, as they go on fortunately to say, is “one of the most ornamental of coniferous trees.” In a young state the dissimilarity between *A. canadensis* and *A. Albertiana* may perhaps not be great, but when developed the commanding appearance of the latter cannot be overlooked. The Dropmore specimen, and the larger one at Dunevan (Mr. McIntosh’s) are worth going a long distance to see, and especially in the spring, when the golden green of the unfolding leaves is so beautifully conspicuous.

The further we go the finer the specimens are. That huge cone on the left, some 70 or 80 feet high, is *Abies Menziesii*. It was planted in 1841. It is light green in colour, but not dense. Mr. Van Geert of Antwerp, whose opinions on the subject must always carry great weight, once told me he greatly feared that this Fir would not prove equal to anticipations either as an ornamental or a timber tree; and the Dropmore specimens, fine as they are, are in accordance with his estimate. Now we come to the Deodars, which the lightning and wind have treated cruelly, yet they tower aloft to the height of some 70 feet, are perfectly furnished and in superb health. The finest, if I remember rightly (for no records of either heights or dates were taken) is just fifty years old. Splendid indeed is the glaucous form of *Cedrus atlantica*, perhaps 40 feet high, but its health and colour are its principal charm. Now we come to the beautiful Norway Spruce, *Abies excelsa*, which must be about 80 feet high, of faultless form and elegant. If about the same dimensions is *A. nobilis*, a truly noble example, its pronounced bluish tint rendering it additionally attractive. *A. amabilis* is not so large, but is not less imposing by its massive appearance. *Pinus escarena* is of commanding appearance; it is apparently a form of *P. ponderosa*, yet distinct from that species; and *P. monticola*, planted in 1835, is similarly fine, its height being 50 or 60 feet. We must, however, pass many, and possibly many of the best; but the Sugar Pine, *P. Lambertiana*, planted in 1841, 50 feet high, cannot be omitted; nor can the still more striking, distinct, and conspicuous of all, *P. Benthamiana*, planted in 1843 and 60 feet high—remarkable by the great length of its leaves and brush-like growths. *Taxodium sempervirens* is grandly represented, its dark foliage contrasting effectively with the soft delicate green of *T. distichum*. Of *Cryptomeria elegans* there are many noble examples, and exceptionally remarkable is *C. Lobbi*, perhaps the finest example in England, 50 feet high, and figured in the “Manual” above mentioned. Then comes *P. insignis*, previously referred to, rich grass green in colour and singularly beautiful. These, with scores



Fig. 30.—Seed-bearing cone of *Araucaria*.

of others, are in the wilderness, rising above Brackens and Heaths; but there is still the “pinetum” where the specimens are thinly disposed on the smoothest of lawns, and, at least some of them, probably unequalled. Here is not the oldest *Araucaria* in England, for that is at Kew; but perhaps the second oldest, inasmuch as it is one of the plants brought from Chili by the Mr. Archibald Menzies towards the end of the last century, and presented to Sir Joseph Banks, who sent them to Kew; but in some way the specimen under notice found its way to Dropmore. It is only interesting because of its age and as having been the parent of



other trees, as many in the grounds are far finer, apart from the magnificent specimen represented in the engraving (fig. 31), which was prepared from a photograph in 1881 for the "Manual of Coniferae." This noble tree is in the best of health, and, as may be perceived, is almost or quite faultless in form. It was planted by Mr. Frost in 1830, and when measured three years ago the height was 61 feet 6 inches. The circumference round the extremities of the branches as they rest on the ground 100 feet, and the girth of the trunk 3 feet from the ground 7 feet 4 inches. It is a male or pollen-bearing form, and with catkins as represented in

ful indeed it is, especially when its history is remembered. This is the tree resulting from a seed sown by Mr. Frost in 1827, and, as stated, is now about 120 feet high, the bole as straight as a gun rod, and girthing apparently about 12 feet at the base, while the branches sweep the ground over a radius of 30 or 40 feet. In the Conifer Manual Dr. Newberry is quoted from the "Pacific Railway Report" as describing *Abies Douglassi* as "one of the grandest of the group of giants which combine to form the forests of the West, attaining a height of 300 feet;" and the authors of the "Manual" observe that "in Great Britain some of the older



Fig. 31.—GREAT ARAUCARIA AT DROPMORE.

fig. 29; other specimens in the grounds bearing seed-producing catkins quite dissimilar in character, as shown in fig. 30, also prepared for the work above mentioned.

Grand as is the great *Araucaria* at Dropmore, it is not the specimen that Mr. Frost shows the last. This honour is reserved for the gigantic Douglas Fir, the "Douglas," a noble monument of the great collector for the Horticultural Society, David Douglas, who was killed by falling into a cattle pit in the Sandwich Islands in 1834, and after whom one of the present admirers of the tree, the chief clerk to the Society, was named. "There! what do you think of that tree, Mr. Douglas Dick?" "Think, sir! why I never saw anything like it. It is wonderful!" and wonder-

specimens are rapidly growing in dimensions that will, in a short time, surpass every native tree"—a prediction which is in course of verification. The specimen under notice had once a narrow escape from being spoiled. It produced three leaders and perplexed its raiser. "I knew," said Mr. Frost, "if I asked Lady Grenville's permission to remove two of them it would be quickly refused; I knew if they remained they would ruin the tree, and I knew if I cut them out without authority I should get into a 'row.' The case was getting desperate. I cut, and I 'caught it,' but never mind, I saved the tree."

Since Conifers thrive so remarkably at Dropmore, it is natural that a desire should exist to know the character of the soil. It is light, poor,



and not far removed from a gravel bed, but this does not support them. The shingle is excavated, and perhaps fifty loads of "better stuff" has been provided for each tree. The secret of success is an ample food store, careful planting, and good drainage. Each tree is on a mound, so that the water drains from rather than to the stem, and thus reaches the active roots. Then top-dressings are constantly being added of road trimmings, decayed vegetable matter—anything that is good. This at once acts as ballast to the roots, rendering the trees safe against winds, and affords sustenance. For instance, the large "Douglas" has from the time of planting till now had probably 300 loads of soil. Each tree has a station of about 6 feet in depth, and in planting care has been taken that the tap root was not twisted, but placed in its natural perpendicular position, the radial roots being spread out more or less horizontally and nearer the surface. In return for this care in planting there is a rich reward—rapid yet healthy growth, and noble trees.

We pass through the well-stocked kitchen garden and luxuriant crops. It can only be said that the change from a poverty-stricken waste is due to deep trenching, fresh soil, and chalk. The chalk cured the "clubbing;" "but," said our host, "if you want particulars ask Mr. Roger of Battersea Park; he knows all about it."

Then we rested at "The Cottage," and tasted the home-made wine. "Equal to champagne," said the connoisseur, Mr. Roberts. "Only another gardener in England can make wine like this," remarked someone else, "and that man is Robert Fenn." "It is first-rate," said all; and it was. And the silver cup went round, such an one that few gardeners own, holding enough for a dozen men on a tropical day. It was presented to Mr. Frost a few years ago in recognition of his ability as a gardener, and as a token of esteem by his horticultural friends, with a purse of 200 guineas. Enough is said. Having had a "day in the country" to be remembered, we hasten to Slough, making, however, a passing call at

#### CLIVEDEN.

This splendidly situated ducal residence, made famous to gardeners by the spring bedding of the late Mr. Fleming, is approached through an avenue of Limes, wide enough to permit of broad lawns between the trees and the drive. It is thus imposing; but a view from the terrace is superb—a magnificent lawn, with the famous beds in the foreground, and a "great beyond" of tree-clad hills, with the Thames gliding in serpentine course in the fertile valley below. Well might Garibaldi, on his visit to England, enjoy the scene and exclaim, "It is Italy!" We pass by a number of glass structures too hot to enter, packed together as if land were scarce in a district where the population may, perhaps, average a man to five square miles; we rush through some conservatories where *Bignonia Chirire* rambles some hundreds of feet, producing here and there its long-tubed clusters of handsome orange flowers; we peep into vineries, have a few moments of acceptable rest with the good gardener, Mr. Ellam, who has plenty to do in his fine charge, and start behind time for the

#### ROYAL NURSERY.

"Behind time," but not too late for a right royal reception by the world-famed florist, Mr. Charles Turner. "Everything is done well at Slough," is an axiom. Certainly anything better in hospitality the most fastidious could not wish. Then just a look round before dark. The flower beds appeared to look brighter, and the big sixty-year-old Holly hedge looked bigger in the gloaming. The Azaleas, which have conquered and will conquer again, were arranged in a large house so thinly that a man could pass freely around each plant. That is the secret of success with large plants—room to get round them there and then, and only they are furnished to the base. The Dahlias, acres of them, are each staked out like specimen plants, every branch having its support; the foliage fine, the buds thinned, and grand blooms unfolding. There will be something to see shortly, and something that should be seen by admirers of this imposing flower. The Carnations in pots surprise by their numbers. The "grass" is strong, and the layers pegged down in the pots from twelve to twenty in each—thousands of them; but all will be wanted, for the demand is great. So it is for Auriculas, which are in long ranges of low frames on the north side of hedges of Poplars, where they have shade from the sun, yet with air filtering through the trees; hence the plants are sturdy and strong. But not the least worth seeing among so much that is good are the Chrysanthemums. They have been numerous and fine for years at Slough, but never so numerous and never so striking at this period as they are this year. There are hundreds of them, and not one plant in a hundred in a pot exceeding 7 inches in diameter. "The longer we live the smaller the pots for everything" was the quiet observation of the master florist; and certainly no plants could be imagined more satisfactory than these. Hard, sturdy, fresh, with every leaf healthy down to the soil—such a display of these splendid autumn flowers may be expected as has not yet been seen even at Slough in November. Let this be remembered.

But darkness creeps on, trains are inexorable, and Babylon must be reached before the "Healthies" close. A day is short, and as the critic discovered "a fortnight would be better" for an escape from town; but a flying visit has at least this advantage, that it affords an excuse for another day being spent thus pleasantly in the same pleasant manner and places another year.—ONE OF THE SPIRITS.

#### SPECIALTIES AT READING.

QUICKLY following the magnificent display of *Calceolarias* which Messrs. Sutton & Sons provided at their trial nursery in May last, came the *Gloxinias* and *Tuberous Begonias* that have formed, until the present time, an

exhibition of great beauty and interest. It is always a pleasure to inspect the excellent houses devoted to these specialities, for whatever is taken in hand there is thoroughly well grown. Every plant is seen in the most vigorous health, the flowers are proportionately large and richly or clearly coloured. As a consequence the seed produced is firm and plump, the best fitted to produce strong plants. The importance of this point is fully recognised by Messrs. Sutton's experienced and careful manager, and his efforts to ensure healthy parents are amply successful in all departments. The closest attention is also paid to the improvement of the respective strains, whether *Calceolarias*, *Gloxinias*, *Begonias*, *Cyclamens*, or *Auriculas*, and the crossing is conducted upon a definite system, the result of many years' experience, and careful observation. It is surprising how great a change can be effected in a few years by the continual direction of the attention to the improvement of particular plants, and how accurately the results can be in many cases predetermined. Perhaps the first object is to increase the size of flowers of a certain race of plants. Then it is desired to multiply the shades of colours. That being accomplished, efforts are made to obtain particular styles of habit suited for certain purposes, and then probably the season of flowering lengthened. Many examples could be cited where similar results have been obtained, but one of the most striking is afforded by the

#### TUBEROUS BEGONIAS.

In recent years few plants have been so greatly advanced in usefulness and beauty as these, and their popularity is now so firmly established that no commendatory remarks are needed to call attention to them. By the efforts of several hybridisers, however, a character has been gradually developed which is of the utmost importance. For some time every seedling *Begonia* of any merit received a distinctive name, and this is still continued by some growers; but it gradually became apparent that by careful and judicious intercrossing a strain could be raised to such a standard of excellence that one pod of seed would produce many varieties equal to the finest of those honoured with names. Messrs. Sutton have availed themselves to the utmost of the quality, and anyone who has seen their houses of *Begonias* within the past month or two could not help being astonished at the high degree of merit which has been obtained. Of some thousands of plants and scores of varieties there is not one that would not a short time ago have been considered worthy of a name. In size, form, and numbers the flowers leave nothing to be desired, and combined with the sturdy erect habit, the flowers standing up boldly above the foliage, the plants are eminently satisfactory. In one respect a considerable advance has been effected in the past season or two—namely, in increasing the diversity of colours. Scarlet shades have always been abundant, yellows have also been numerous, but to these have now been added some exquisite tints of cream; salmon, sulphur, bronze, orange, rose, pink, and carmine, with pure white and blush, furnish intermediate shades that greatly increase the value of the plants for decorative purposes. There is now a great range of colours, from the most delicate to the richest crimsons, brightest and most brilliant scarlets, which in the sun are almost dazzling. For indoor decoration in pots or for bedding-out the majority of these seedlings are equal to the best named varieties, and Messrs. Sutton have undoubtedly scored a great success in their culture and improvement.

#### GLOXINIAS.

Another important feature in the nursery during the summer months are the *Gloxinias*, of which a great number is grown in the best possible condition. Many would be surprised to see such strong plants flowering so freely in 60-size pots, but the system is simple though quick, one which might be advantageously followed in many gardens. The seed is sown in January, the young plants appear in February; they are pricked off in March, potted in small thumbs in April, and transferred to 60-size in May, commencing to flower in June, and continuing into August or later if they were not allowed to bear seed. For ordinary purposes of decoration such plants are invaluable, and are more serviceable than larger specimens, as they can be used in so many ways. *Gloxinias* are much-appreciated plants in most gardens, their handsome flowers having a majestic appearance, and the colours now prevailing in them are superb. At Reading a great variety of shades have been procured; the violet-crimsons, dark scarlet, warm purples, soft pinks, and pure whites are abundant. Some of the purple tints are almost black, and the crimson hues are intensely rich, grand, and indescribable shades. The arrangement of the colours has also been much diversified; in some the corollas are densely dotted with rich shades on a lighter or white ground, but these, though pretty, have unfortunately a rather delicate habit, and they are not so much in general favour as the other groups. Next there are varieties with a clear white throat, and a solid band of colour on the lobe of the corolla. A third group, and one which has been extended of late, contains flowers with a clearly defined broad white margin, then a band of colour, and a light or coloured throat. These are very beautiful, particularly when the body colour is bold and distinct, and the white margin pure and well defined, as is the case with the majority. A few of the reflexed type are grown, but the demand for these is limited, preference being given to the erect-flowered sorts which now are so sturdy that the blooms do not require sticks to support them—an advantage of no mean importance.

Of other indoor plants the most important just now are the *Cyclamens*, which, though not in flower, are really handsome owing to their fresh, vigorous, finely marbled foliage. Very rarely indeed are *Cyclamens* seen in such grand condition, and they have awakened the admiration of some of the most experienced growers. The *Cyclamen* is a beautiful plant when in health, and well repays for a little trouble to ensure its success. One of the chief points to which attention is given in the Reading Nursery is providing a humid yet not stagnant atmosphere, with occasional gentle syringings over the foliage, and not too much water at the roots. The success of the treatment is manifest, and the display of flowers by-and-by will undoubtedly be equally satisfactory.

#### SEEDLING CARNATIONS.

The outdoor plants are too numerous to be noted in detail, but one quarter is especially worthy of attention. This is devoted to seedling *Carnations*, and a week or two ago they were wonderful masses of flowers. The plants were about eighteen months old from the time of sowing the seed, and formed dense tufts, every shoot bearing flowers, each plant having some hundreds—perfect forests of flowers, and of the richest purest



colours—scarlet, pink, cream, and white, the selfs being the most effective. For borders to supply flowers for cutting such plants cannot be over-estimated, and the great recommendation of Carnations is that they are so valuable in town gardens. Often where no other flowers succeed Carnations will thrive and flower profusely in the smokiest of suburban districts.

At Messrs. Sutton's seed trial grounds, a few miles from the nursery, all the annuals, biennials, and similar plants, of which seed is sold in large quantities, are carefully tested, all new varieties being proved side by side with old favourites, their merits fully recognised if they are distinct, or otherwise discarded from their lists. Peas and other vegetables, together with lawn and pasture grasses, are fully tested in the same way, and the general satisfactory condition and regularity are convincing proofs of the care with which the enormous quantities of seed are kept true. Throughout the trial grounds and nursery, as in the wonderful seed offices in the town, the same admirable system of management is apparent which has raised Messrs. Sutton's establishment to so high a degree of fame in the horticultural and agricultural world.—VISITOR.

### PROPAGATING PLANTS.

It is a general complaint when failures in propagating occur in private gardens of those cuttings which require artificial heat to enable them to form roots, that it is for the want of proper convenience that the failures happen, and this to a certain extent is true. In all gardens where quantities of decorative plants are required, a propagating house should be provided, but this will not ensure success if its management is not properly attended to. The bottom heat is often a source of trouble. In some cases I have noticed that the supply of heat has been very much impeded by the pipes being clogged with the material placed over them. The best material which I have found for placing over the pipes is cinders which have been passed through a half-inch sieve. These may be beaten quite level for the pots to stand upon. Most propagating houses have a path down the centre with a bed for frames to stand on, on one side, and a stage on the other side for placing the rooted cuttings after being potted. If there are two frames in the house, one should be filled with cocoa-nut fibre, for inserting cuttings in, and the other should fit closely on the bed with no fibre. The bottom heat will pass freely through the cinders. Every afternoon when the house is being damped, water should be poured freely on the cinders, between the pots; this will cause a genial moist heat around the cuttings. The frames should always be slightly open if the house is kept close, and early every morning the lights should be opened for about an hour, but the house should be close and moist. The cuttings must receive all the light possible, but not sunshine.

Another source of the unsuccessful rooting of cuttings is that the base of the cutting when being inserted does not touch the bottom of the hole made for its reception. The "dibber" is very often made too pointed; when this is the case, and the base of the cutting is larger than the point of the dibber, it will not reach the bottom. All such errors as these must be avoided. The pots should always be well drained, and some clean fibre or flaky pieces of leaf soil may be placed over the drainage to insure its being kept open. The cuttings ought never to be allowed to droop more than can be possibly helped. The temperature of the house should be kept as equable as possible, the bottom heat ranging from 85° to 90°, the top heat from 70° to 80°; but this will be according to the weather. The failure of cuttings is generally due to neglect of a few small points.—A. YOUNG.

### EASTBOURNE FLOWER SHOW.

AUGUST 13TH.

THE Committee of the above were very fortunate in securing the permission of Lady Howard to again hold their Exhibition in the grounds of Compton Place, as a more attractive position they could not have. The Show itself was a very good one, and the weather being fine it was well attended, as it deserved to be, by the visitors and residents of Eastbourne and neighbourhood.

*Plants.*—In the open class for eight plants in bloom there were four competitors, all of whom showed well; Mr. Gilbert, nurseryman, Hastings, being first with *Erica æmula*, a grand plant, 4 feet in diameter, and profusely flowered; E. Aitoni turgida, Allamandas Hendersonii and nobilis, Statice Gilbertii, and Bougainvillea glabra. Mr. Tudgey, Waltham Cross, was second with a large *Erica Eweriana superba*, 5 feet in diameter; E. Austiniana, and Anthurium Schertzerianum being also notable plants. Mr. Rann, gardener to J. Warren, Esq., Handcross Park, was third; Mr. Jupp, gardener to G. Boulton, Esq., Torfield, Eastbourne, being awarded an extra prize. In the class for six plants in bloom Mr. Gore, gardener to Capt. Taylor, Glenleigh, was awarded first for a good Allamanda Hendersonii, Stephanotis floribunda, and Eucharis amazonica amongst others. Mr. Jupp was a very close second with two small but good *Ericas*, and a pretty *Rondeletia speciosa*, &c.

For eight fine-foliage plants Mr. Rann was first with immense plants of *Areca sapida*, *Thrinax elegans*, *Gleichenia Mendelli*, *Crotons interruptus* and *Andreanus*, and other smaller but handsome specimens. Mr. Tudgey was second, and Mr. Jupp third. The last-named was easily first in the class for six fine-foliage plants, followed by Mr. Gore. Mr. Rann was again to the fore with eight Ferns, amongst them being *Cyathea dealbata*, *Dicksonia antarctica*, *Davallia Mooreana*, and *Gleichenia rupestris*; Mr. Gilbert being second. Mr. Gore was first with six Ferns, amongst which was a good plant of *Goniophlebium subauriculatum*, Mr. Jupp being a very close second. For six *Ericas* Mr. Tudgey took the lead, followed by Mr. Gilbert and Mr. Rann.

Groups for effect were fairly represented, Mr. Gore being first, Mr. Jupp second, and Mr. Martin, gardener to J. G. Langham, Esq., Eastbourne, third. Fuchsias were well shown by Mr. Liggs, gardener to the Lady Superior, Convalescent Home. Mr. Wise, gardener to General Holroyd, The Links,

Eastbourne, was first for *Pelargoniums*, *Achimenes*, and *Gloxinias*, all of which reflected great credit on the exhibitor. Mr. Gregory, gardener to Admiral Maxse, was first for *Begonias*, very good, as were the first-prize *Coleuses* of Mr. Dennett.

Cut flowers were fairly shown. In the open class for thirty-six Roses F. Woollard & Sons, Cooksbridge, were first; Mr. Balchin, Brighton, second; and Mr. F. Cant, Colchester, third. In the amateurs' class for twenty-four Mr. Slaughter, Steyning, was the only exhibitor, and was deservedly awarded the first prize; Mr. Slaughter being first for twelve, followed by Mr. Rapley, Jevington. For twenty-four bunches of cut flowers Mr. Blake, gardener to F. Roper, Esq., Polegate, was easily first, Mr. Gore being second. Prizes were also given for collections of annuals, herbaceous, Zinnias, Dahlias, Asters, Carnations, &c., in nearly all of which the competition was keen. Messrs. Christian, Bexhill; Goring, Three Bridges; Gower, Battle; Clapson, Hailsham; Tugwell, Eastbourne, being amongst the first-prize-takers. For a collection of fifty varieties of wild flowers Mrs. Challen, Eastbourne, and Mr. Dixon, gardener to Sir S. M. Wilson, Searles, were equal first, Mrs. Angell, Hailsham, being third.

*Fruit.*—On the whole this was very good. For a collection of nine dishes Mr. Gore was first, showing Black Hamburg and Muscat Grapes, Peaches, Apricots, Melon, &c. Mr. Williams, gardener to F. Liddell, Esq., was a good second, and Mr. Dixon third. There was very little to choose between the three collections. Black Hamburg Grapes were not well finished, Mr. Wise being first, and Mr. Foxley, Eastbourne, second. Mr. Chatfield, gardener to J. Holman, Esq., East Hoathly, was first for white Grapes with grand bunches of Muscat of Alexandria beautifully finished, by far the best Grapes in the Show. Mr. Foxley was second with Buckland Sweetwater. For a collection of three varieties Mr. Gore took the lead, having Muscat of Alexandria very good, Madresfield Court, and Black Hamburgs of moderate quality. Mr. Tugwell was a close second. For a single bunch of any variety Mr. Chatfield was first with Muscat of Alexandria, Mr. Tugwell being second with a good bunch of Muscat Hamburg very well finished. Mr. Siggs took first honours in both classes of Melons. Mr. Hopkins, gardener to R. Thornton, Esq., Framfield, was first for Peaches, very fine; Mr. Whibley for Nectarines, Mr. Wise for Cherries, Mr. Jupp for dessert Apples; Mr. McLeod, gardener, Glynde Place, Lewes, being first in three classes of Plums and also for Pears.—G.

### ANEMONES.

(Continued from page 69.)

#### SECTION OF ANEMONE PULSATILLA.

ALMOST all the species and varieties enumerated under this heading, although most at home in various parts of the rock garden, will succeed in any well-drained border of good rich loam containing a fair proportion of vegetable matter; but they do not submit well to pot culture, as being deep-rooting plants they dislike the confinement and also the sudden changes of temperature to which they are subjected under this course of treatment.

*A. Pulsatilla (Pasqueflower).*—This very handsome species is found growing in chalky pastures in several English counties, and is also widely distributed on the Continent. The whole plant attains a height of from 6 to 12 inches, with deeply cut leaves, the linear segments of which are bipinnatifid, and the involucre, which is sessile and leafy, is divided in a similar manner. The flowers are usually of a deep rich purple, covered on the exterior with long silky hairs, and are produced in April or May, their drooping habit, combined with the finely cut foliage, giving this plant an unusually graceful appearance. This is one of the easiest to cultivate, and requires no special treatment. I have not even noticed that it is benefited by the addition of chalk or lime to ordinary soil, although growing in such positions naturally. When raised from seed many different shades of colour may be noticed, but two only appear to be worthy of notice—viz., albidia, in which the flowers are white with a slight shade of purple, more interesting as a curiosity than from its beauty; rubra, having the flowers of a very decided reddish-purple shade, good and distinct. This variety is also a somewhat stronger grower than the type. Both the above are, as far as I am aware, natives of Germany but doubtless occur elsewhere.

*A. albana.*—A native of the Caucasus, growing about 6 inches high, with white flowers, often almost cream-coloured, produced in May. I have had but a limited experience of this plant, and it seems a somewhat shy bloomer; but I have found it succeed on a moderately sunny slope of the rockwork facing east. It also seems to like a larger quantity of peat than the others of this section.

*A. dahurica.*—Of this species, again, I can say but little as to its cultivation, as I have never seen it in good condition. When doing best it was on an elevated part of the rockwork and fully exposed to the sun in a mixture of peat and sandstone grit. The flowers are flesh-coloured on stems 6 inches in length, and are produced in May. It is a native of Dahuria, and though first introduced into this country in 1819 is still very uncommon.

*A. Halleri.*—This very handsome species is found on the high alps of central Europe, and should certainly be included in the most select collection of rock plants. The stems, which are from 9 to 12 inches in height, bear light violet flowers, much resembling *A. Pulsatilla* in its native habitat. It usually flowers in July and August, but in our gardens during April and May.

The variety *Hackelii* differs chiefly from the type in its deep violet blooms and slightly more robust habit.

Both these plants require an open and exposed situation on the rockwork, and will thrive in good loam with a considerable amount of grit; but whether granite, sandstone, or limestone appears to be a matter of indifference, depth of soil and a few stones around them to check evaporation appearing to be alone essential.



*A. montana*.—A sub-alpine plant, native of central Europe on the lower mountains, and but rarely extending into the true alpine region. Stem about 12 to 15 inches in height, bearing deep violet flowers in May. The leaves are very finely cut, and are tripinnatifid. This species does well, and blooms freely in a sheltered part of the rockwork facing north, on the limestone in a mixture of equal parts of loam and leaf soil; but I am not prepared to say that it would not thrive equally well under other treatment.

*A. patens*.—This and its variety *ochroleuca* are both natives of Siberia, and are very easy to cultivate either in the rockwork or border, both, however, preferring a moderate quantity of peat in the soil. They both grow from 12 to 18 inches high, producing their blooms freely in June and July. The flowers are in the species straw colour, and in the variety of a rich cream.

*A. pratensis*.—This species, which is a native of central Europe, very closely resembles *A. Pulsatilla*, differing chiefly in the colour of the flowers, which are of a deep reddish-purple, produced early in April and May. Its culture is, in all respects, the same as that of *A. Pulsatilla*.

*A. vernalis*.—Decidedly one of the best of the genus, and also one of the most desirable of rock plants. The whole plant is of a dwarf habit, usually from 4 to 6 inches in height, the leaves not nearly so finely divided as in the preceding species, and generally lying almost flat upon the soil. The flowers are produced in March and April, and occasionally again in September or October, though sometimes even appearing in February, and are of a brownish green externally, thickly covered with fine silky hairs. Within they are of the purest white, and taken with the golden anthers form one of the prettiest of alpine flowers. It may be successfully grown on rockwork fully exposed to the east or west in a soil composed of equal parts of loam and leaf mould, with a liberal mixture of granite chippings. It will also do well on the sandstone, but dislikes chalk or limestone. It has four distinct and beautiful varieties, which are well worth growing, although somewhat difficult to procure at present. As their culture is precisely that of the species, I shall merely mention their names and colours. *A. vernalis* var. *discolor*, curiously striped and shaded with rose and lilac on the white ground; var. *lactiflora*, white with a decided tinge of golden yellow, very beautiful and rare; var. *lilacina*, pale lilac, rather the poorest of the four; var. *rosea*, a rich rosy red, very fine and distinct, commoner than the others.

*A. alpina*.—This and the two following, which are very closely allied to it, are distinct and striking plants, and are very valuable in a border even when out of flower, as their bold and deeply cut foliage is in itself very ornamental, especially when surmounted by the heads of seeds with their long and feathery tails. This species attains a height of 2 to 2½ feet, in a deep rich border when left undisturbed, and is then indeed a grand plant. The flowers are white, slightly tinged with blue on the exterior, and are when well grown as large as those of *A. japonica alba*. They appear in May or June, and last for about a month. I need not say more as to its cultivation than I have already done, except to impress the necessity of the let-alone system of culture, as the finest plants I have ever seen only received a mulching of leaves in the autumn, not that that was necessary, as the plant is perfectly hardy, being a native of most parts of the alpine region of central Europe. I have also been told that this plant prefers a slight quantity of chalk in the soil, while its neighbours, *A. sulphurea* and *Burseriana*, both dislike it exceedingly, but cannot vouch for this from personal experience.

*A. sulphurea*.—Similar to the preceding in most respects, except that its flowers are lemon or sulphur-coloured, and slightly larger than those of *A. alpina*, of which it is probably only a variety. This plant is commonly considered very difficult to cultivate successfully, and in nurseries where the plants have to be grown in pots or frequently removed this is really the case, but in any private garden where they can remain undisturbed under the treatment previously given for *A. alpina*, there is no reason why it should not be seen in the best condition.

*A. Burseriana*.—A native of the Tyrolean and Bavarian Highlands, very similar to *A. alpina*, but with considerably smaller petals of a bluish-green tinge. A rare plant, but by no means so desirable as many other much commoner species.—G. GUTHRIE.

#### PRUNING SHRUBS.

"A NORTHERN GARDENER" has in last week's Journal touched on a subject that very much needs attention. Examples of thick planting and neglect of timely thinning are to be met with everywhere. This has brought to my mind a case in point. It is that of a beautifully laid out park surrounding a princely mansion. In the neighbourhood of the latter there are clumps of choice Conifers, which had been planted about as thick as nurserymen generally plant in what may be called their "show ground," where they arrange some of their best young plants for customers to choose from. Nursery stock when tastefully arranged in this manner looks very well; and no doubt the beds referred to would be very good two or three years after planting, but what are they like left unthinned for ten or a dozen years? Simply a tangled mass, the smaller Conifers overgrown by their stronger-growing neighbours, and all more or less injured; and this state of affairs is not confined to a few shrubs, but is very much the same over a very large park, and I may safely say that

had thinning been duly attended to a dozen such parks might have been well furnished out of this one.

Now is a very good time to see that shrubs that have a fair amount of room to grow do not get out of bounds. There is no reason at all why every shrub in a bed or clump should not be a well-shaped specimen, and if attended to once a year from the time they are planted and thinned out, or cut-in with the knife, shrubberies would be much more interesting objects than they generally are. Laurels, common and Portugal, and Yews, perhaps, require more of the knife than most other things, and to these my present note now particularly refers. By the middle of August most shrubs have completed their annual growth. Sometimes a second growth takes place, as is often the case with strong shoots of the common Laurel. These are now pushing high above the more matured shoots, and this should be the signal to begin pruning. In the first place, these long-growing shoots should be cut back to where they spring from the hard wood. If the shrub has to be restricted to a certain size, every shoot that is going beyond the limit should be taken hold of with the left hand, pulled tight, and cut as far back as can be without making a hole, thus having the shorter growths well thinned out to form your tree. Shrubs carefully pruned in this way will ripen their wood better, and be consequently better fitted to stand a severe frost; and it is surprising how long they can be kept of a moderate size where the room is limited, and yet not have that stumpy stunted look so undesirable. The majority of shrubs with plenty of room, in well-sheltered places, of course, will form fine specimens without any pruning. I think, however, in most cases a judicious use of the knife is desirable. A pruned Laurel or Yew will stand the wind better and carry a greater weight of snow without breaking down than those that are let grow as they please. Never cut Laurels with shears, not even when planted as a hedge, if time can be spared to prune with the knife.—A WORKING GARDENER.

#### THE INSECT ENEMIES OF OUR GARDEN CROPS.

##### THE ONION.

THE Onion does not happen to be a vegetable that is plagued with a great variety of insect enemies; but it has one which, though small in size, by its numbers and its insidious mode of attack, does every year some amount of injury to the crop, while occasional years stand out where the damage is still more serious. We have not yet full reports of the insects that have been observed by Miss Ormerod and her coadjutors during the season of 1883; but the particular insect that does mischief to our Onions was greatly complained of, both in England and Scotland, during 1880 and 1881. Reports were more favourable in 1883, to be attributed, as is supposed, to the weather being propitious to the growth of the plant, and also lacking that dryness which is presumed to encourage the development of the fly.

Since this vegetable is one of considerable importance, we may

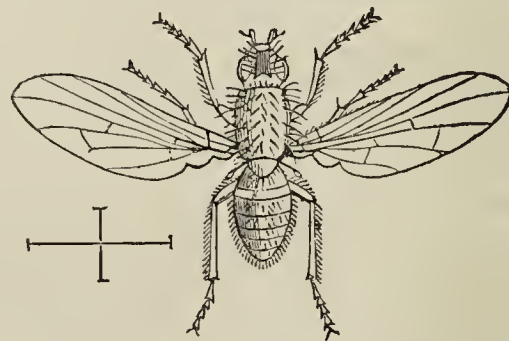


Fig. 32.—*Anthomyia ceparum*.

be allowed to describe, with some attention to details, the life history of the Onion fly, so far as this has been ascertained, which may help us towards an answer to the question, How can its ravages be prevented, or a stop put to its destructiveness where the insect has appeared in a garden? And here we meet at the outset with a notable circumstance. The Onion fly has, until recently, been referred to as of one species, the *Anthomyia ceparum* of Curtis, which, however, by modern entomologists is more commonly called *A. antiqua*, after Meigen, though I know not why it deserves this specific name, denoting venerableness. But in the course of 1882 an entomologist who had received specimens of Onion flies from different parts of this island was led to scrutinise them, and he pronounced some of them to be a species familiar on the Continent, and called the Leek or Shallot fly, *A. platyura*, which had, indeed, been previously noticed on Leeks in England, but hardly regarded as a foe of any consequence.



Now, the majority of our works upon horticulture in which mention is made of the Onion fly, state that the eggs of the insect are deposited upon the young leaves, the maggots proceeding towards the bulb as the plant grows; but it is a fact well known to gardeners that the bulb of the Onion may be found affected when the leaves show no traces of the insect. The detection of *A. platura* as a foe to the Onion led to the conjecture that this species was the one that resorted to the leaves, and that *A. ceparum* placed its eggs upon the bulb. Unfortunately for this theory, however, Mr. Malcolm of Dalkeith took off young Onions without bulbs maggots, which were duly reared, and examples of both species made their appearance. As one theory may be as good as another, I will give my own—viz., that the first brood of flies of either species usually deposits eggs upon the leaves, but the after broods (for it is admitted several broods may be produced in one season) come at once to the Onion bulb for this purpose.

The familiar Onion fly (*A. ceparum*, fig. 32) is the more abundant species, about half the size of the house fly, the males ashy grey, and the females brownish. Both have clear wings veined with yellow. To this the Leek fly (*A. platura*) has a close resemblance in size and colour, but it is rather darker. The larvæ or maggots (fig. 33) of



Fig. 33.—The Onion grub in the bulb.

the two can scarcely be distinguished from each other. These are yellowish white, legless, thickening from the head to the tail, which is studded with bristles. That they can feed upon the leaves as well as the bulb of the Onion is evident; their preference is for the latter. When adult they quit the plant to become pupæ in the earth, the exception to the rule being where Onions are gathered in autumn containing maggots, when they change within the bulb. There is an emergence of flies during April. These come from pupæ that have remained from the previous autumn, and more flies emerge in June, followed by a third or even a fourth brood, since in warm weather the maggots grow rapidly, and from egg to fly may not occupy much beyond a month. We are indebted to Miss Ormerod for pointing out a fact previously

unnoticed, that these maggots can perform journeys from bulb to bulb should they be needing a fresh supply of food.

There is one circumstance which is somewhat helpful to the eradication of this pest, that affected Onions speedily show signs of the maggot's presence, and they should, of course, be at once removed. This removal, supposing the plants have made some progress, is not to be done by hand-pulling, which proves unsatisfactory. They should be dug up with a spud and promptly destroyed. Mr. W. Taylor of Longleat has stated that he has often detected the maggot in plants while still only about the diameter of a knitting-needle, when he removes and burns them. Unfortunately, as he says, many gardeners pull up such Onions to throw upon the rubbish heap. A question of special interest concerns the use or non-use of certain kinds of manure. Thus, it appears to be agreed that the maggot of the Leek fly is occasionally to be found swarming in dung, and we want to ascertain whether by applying such manure to Onions or to Leeks we shall draw off the insects from the plants, or really aggravate the mischief. The strong odour of decaying "Indian" rape cake has been proved to attract the flies, which lay their eggs in the substance, and then the maggots will feed upon it. One instance at least is recorded where this cake, teeming with maggots, was used to dress Onions, and a fair crop was obtained. The mass of evidence is certainly in favour of well manuring the ground early in the year as a preparative for sowing, the choice of manure depending on the soil. A correspondent of the *Gardeners' Chronicle* strongly recommends the addition of clay to a liquid manure where the soil is light; also, "when Onion beds have been much infested, it is a good plan to deeply trench the ground in winter, turning the top spit to the bottom of the trench. By this means the grubs are buried so deep that the flies cannot come up from them." And it is repeating, perhaps, what most gardeners are aware of, that Onions are less likely to be troubled with fly if the ground is changed every year.

Of other preventive means it may suffice to note that some of our friends in the north speak highly of the application of sand saturated with paraffin after sowing, and in England a favourite plan with some is to lay in a mixture of soot and wood ashes at the same period. This not only kills insects, but also promotes the growth of the plants. Solution of alum has been praised as a good and cheap remedy. I presume it is so applied that the leaves of the Onion are moistened, and the soil round the bulb. When much diluted paraffin used carefully and thrown as a spray over Onion beds has been found fatal to the maggot, if no time has been lost. Soapsuds poured over the plants by means of a can with a rose kills maggots, keeps off the flies, and nourishes equal to manure. Opinions are divided upon the advisability of transplanting Onions. It appears that when the

plants are removed the bulbs are less exposed to the attacks of the fly, though some advocate raising them where they have been sown. Where not transplanted they might be earthed-up, some fine rich soil being run along the rows and well pressed down. Of other occasional enemies to the Onion it may suffice to mention those most often noticed. The "wireworm," that is a larva of an *Elatér* or "click" beetle, may attack the roots. Eggs are laid by the parent beetles in spring, and the grubs feed on through the summer and autumn. Several of the remedies recommended for the fly would free the plants from this insect. A maggot that produces one of the Hawk flies (*Eumerus striatus*), a brown and rather bristly larva, has been taken in the leaves of the Onion and Carrot. One reason for sparing its life would be that the mature fly is a destroyer of a variety of insects. What is sometimes called the Leatherjacket grub, the larva of *Tipula oleracea*, which is not uncommon as a subterranean feeder in kitchen gardens, might possibly infest the Onion, but I have no authenticated complaints about its doings in this way.—ENTOMOLOGIST.

#### TAUNTON DEANE HORTICULTURAL SOCIETY.

ONCE more has a decided success crowned the efforts of the indefatigable Secretary and Committee of this flourishing Society. A fine day (which has been fortunate enough for many years to secure), a most liberal schedule amounting to upwards of £250, and an intense interest excited in the town and neighbourhood at this the great holiday of the year—all combine to make the Taunton Show one of the very best, if not the best, of autumn shows. It does one's heart good to see the general interest taken in the Society by all parties: the county gentry make a point of being at home and of attending the Show in large numbers, while the residents in the town itself do their very utmost to show that they mean to make the Exhibition a great success. One wondered how the Exhibition tents would be filled, for I knew that Mr. Lawless had sold his plants and given up exhibiting, that Mr. Williams had done the same, and so that we should not see the wonderful plants that Mr. Cole and Mr. Tudgey used to bring to fill up the tents. Lucombe, Pince & Co. had for some years given up exhibiting, so that it was a serious question how the spaces they used to occupy would be filled, and yet after all I do not recollect any previous show which excelled it, and very few that equalled it. This was mainly due to the marvellous exhibits of an almost entirely new exhibitor, Mr. Cleave of Crediton, whose gardener, Mr. Lock, has established a claim to be one of the very best plant-growers we have; and yet, strange to say, he was never brought up as a gardener, never took to it until he was past twenty (having been previously a gentleman's servant), and thus has established the truth that, as with poets, "the gardener is born, not made." It must have been in him, and I speak not on my own authority alone, but on that also of one who was in his day our very first plantsman, that never at any autumn show had twelve such plants been exhibited as those shown by him on this occasion; and the extent to which he contributed to the success of the Exhibition may be gathered from the fact that he took twelve first prizes and one second in all the principal classes of the Show. He told me that when he wished to exhibit his employer said to him, "I don't think it is any credit to a man to buy large plants and then show them." So he set to work, and many of the plants shown had been grown by him from cuttings or very small plants. This would not apply to Heaths and such hardwooded things, but did apply to the *Dipladenias* and many of the *Palms* which were seen in his collections. Mr. Cypher, another self-made gardener, was as usual in fine form, but had in several classes to give way to his younger rival. And now let us take a glance at the

#### STOVE AND GREENHOUSE PLANTS.

In the class for ten stove and greenhouse plants in flower (open) Mr. Cleave (gardener, Mr. Lock) was easily first with a wonderful lot of plants, consisting of *Ixora Fraseri*, *Ixora Prince of Orange*, and *Ixora Williamsii*; *Erica æmula*—this was the most marvellous plant of an *Erica* I ever saw; not only was there not an atom of foliage to be seen, but the blooms were literally in masses one on the other, presenting a sight ever to be remembered. *Erica Fairriana*, *Erica Marnockiana*, very grand, and *Erica oblata purpurea*; *Dipladenia amabilis*, beautifully flowered; *Allamanda Hendersonii*, very fine; *Eucharis amazonica*, in splendid condition; and *Stephanotis floribunda*. It is impossible to exaggerate the perfection in which these plants were exhibited. Mr. Cypher of Cheltenham was second with a very good lot, but not equal by a long way to Mr. Lock's. It included *Hæmanthus magnificus*, *Erica ampullacea*, *Phænocoma prolifera*, *Allamanda grandiflora*, *Bougainvillea glabra*, *Rhododendron Duchess of Edinburgh*, a very fine dark flower, and evidently destined to make its mark as an exhibition plant; *Erica Austiniana*, *Allamanda nobilis*, *Clerodendron Balfourianum*, *Erica Irbyana*, and *Allamanda Hendersonii*.

In the class for six flowering plants Mr. Cleave was again first with beautiful plants of *Erica tricolor Wilsoni*, a grand plant; *Dipladenia amabilis*, *Ixora Prince of Orange*, *Allamanda Hendersonii*, *Lapageria rosea* wonderfully flowered, and *Ixora Duffii*. In the class for foliated plants the order was reversed. Mr. Cypher was first with grand plants of *Cordyline indivisa*; *Croton angustifolius*, a most splendid plant, beautifully coloured, and looking like a waterfall of burnished gold or a shower of falling rockets; *Latania borbonica*; *Croton Queen Victoria*, very fine; *Kentia Fosteriana*, *Cycas circinalis*, and *Cycas revoluta*. Mr. Cleave was second, his best plants *Cycas revoluta*, *Latania borbonica*, *Areca lutescens*, *Alocasia intermedia*, *Kentia Fosteriana*, *Croton Disraeli*, *Encephalartos villosus ampliatus*. In the class for eight exotic Ferns Mr. Cleave was first with fine, clean, and well-grown plants of *Cyathea dealbata*, *Nephrolepis davallioides furcans*, *Gleichenia Spelunca*, *Cyathea medullaris*, *Davallia Mooreana*, *Davallia polyantha*, and *Davallia Cooperi*. Mr. Cypher was second with *Neopteris australis*, *Dicksonia antarctica*, *Gymnogramma plumosa argyrophylla*, &c. *Fuchsias* are always shown well in these western counties far better than near London, and some abundantly bloomed and well-grown plants were exhibited, Mr. H. Gidding taking first. The Zonal and other *Pelargoniums* occupied one side



of the tent, and were with few exceptions well-grown and well-bloomed plants, Mr. H. Gidding taking all the first prizes. His Zonals were Mrs. Blissard, Lord Gifford, White Venus, Lady Leathbroke, De Lesseps, Mrs. M. Pollock, Pioneer and Leviathan. His Nosegays were Louis Vallott, Emily, Bonfire, Indian Yellow, Apple Blossom, Jessie Dobbs, Wellington, and Lizzie. His doubles—Madame Lemoine, C. H. Wagner, Wonderful, and Madame Thibaut.

*Amateurs' Classes.*—Mr. Cleave was first for eighteen stove and greenhouse flowering plants with Allamanda grandiflora, Lapageria rosea, Rondeletia brilliantissima, Erica Austiniana, Allamanda nobilis, Bougainvillea glabra, Ixora coccinea, Allamanda Hendersonii, Erica ampullacea, and Ixora Prince of Orange, very fine. He was also first for the best six with Erica Jacksoni, Dipladenia amabilis, Erica bicolor Wilsoni, Ixora Williamsii, Bougainvillea glabra, and another. In the class for four plants Mr. J. Marshall, Belmont, was first with Vinca alba, Vinca rosea, Bougainvillea glabra, and Allamanda nobilis. Mr. Cleave had a beautiful lot of Selaginellas, including Selaginella Williamsii, S. denticulata variegata, S. Martensii, S. apoda, S. umbrosa, &c. These were, like all Mr. Cleave's plants, models of good growth and health. The second or amateurs' tent is to a great extent a repetition of the first, and therefore having noticed some of the principal points I take now the

#### CUT FLOWERS.

It is obvious to everyone that this has been a most trying season for the various autumn flowers which are used to decorate our gardens at this season and to ornament an exhibition table, and the only wonder is that of some things, such as Roses, there is anything to exhibit. Who that has seen the rapid expansion of his Roses, for instance, could suppose that there would be any to exhibit? and therefore one was surprised at the goodly array of Gladioli, Roses, Asters, &c., which were displayed, in the large tent especially. One great treat I always have at Taunton is the exhibition of Gladioli. It is so near the head quarters of our great raiser and cultivator, Mr. Kelway, and our chief amateur grower, Mr. Dobree, that to see their stands and to have what they call over the border a "crack" with them about one of my most special favourites is always a treat. Mr. Kelway exhibited a magnificent stand of flowers, mostly his own seedlings, and if anyone doubts the superiority of this to all autumn flowers the sight of this stand would dispel the doubt. Some of Mr. Kelway's flowers were certainly extraordinary both in colour and size and closeness of spike, amongst others Maori Chief, a most peculiarly coloured flower, Mrs. W. Marshall, and Mr. Samson received certificates; but indeed it would be hard to say which of these flowers were not worthy of a certificate. Mr. Dobree, alas! the only exhibitor in the amateurs' class, exhibited besides his stand of twenty-four a collection of one hundred, in both of which were many of his own seedlings, some of great merit. They were Legouv , Maggie, Rayon d'Or, Madame Marie Verdale, Miss Pallen, Colorado, Millee Dobree, Reputation, Hesperide, Jupiter, Baroness Burdett Coutts, a magnificent bloom; Herbert, a very fine flower, which was passed over, but which ought to have had a certificate; Gallia, Feather Gem, Mrs. Cantley, Queen of Canaries, a very beautiful and soft-coloured flower, for which a certificate was awarded; Miss Benson, Mrs. Ware, F. Bonamy Hawtrey, &c. I hope to say something more of Mr. Dobree's Gladioli by-and-by, but may just add that I do not know any other amateur who can at all come near him either in the quantity he grows or the success of his hybridising.

In Roses Messrs. Cooling & Son of Bath were first in forty-eights with, for the season, good blooms. Amongst them were Herr Schulteis, Madame M. Verdier, Helen Paul, Felicien David, La France, Beauty of Waltham, Black Prince, Queen of Queens, Oxonian, Fisher Holmes, La Rosiere, Etienne Levet, Sophie Fropot, Vicomte Vigier, Madame Berard, Duke of Wellington, R ve d'Or, Duchesse d'Ossuna, Marchioness of Exeter, Souvenir de Victor Verdier, Gloire de Dijon, F. de Lesseps, L lia, A. K. Williams, Madame Eug ne Verdier, Charles Lefebvre, Marie Finger, Wilson Saunders, Archduchess d'Autriche, Pierre Notting, Mar chal Niel, Red Gauntlet, Magna Charta, Capitaine Christy, Julie Touvais, Rev. J. B. M. Camm. Mr. Hobbs of Lower Easton, Bristol, was second. Messrs. Cooling & Son were also first in trebles, and Mr. W. Smith second. In the amateurs' class Mr. J. P. Budd, Bath, was first in twelves with Comtesse d'Oxford, Dr. Andry, La France, Capitaine Christy, Belle Lyonnaise, Louis Van Houtte, &c. He was also first with fair blooms, amongst which were Belle Lyonnaise, Madame Lambard, Catherine Mermet, Bouquet d'Or, Mar chal Niel, and Comtesse de Nadaillac (?).

Dahlias were sparingly shown, Mr. J. Watson taking the first place with George Smith, Royal Queen, Anna Neville, Thomas White, J. Croker, Mrs. Stopford, Goldfinder, Georgiana, Prince of Denmark, Constance, Percy Bennett, Peri, George Dickson, Flag of Truce, Harrison Weir, Shirley Hibberd, Nebbeam, Pioneer, and Canary. In Fancies he had Hugh Austin, Gaiety, Rev. J. B. M. Camm, Miss Lilly Large, &c. But I must not trespass further on your space, but cannot omit to notice the very beautiful floral arrangements by Miss Cypher. Her table was the perfection of arrangement, and her bouquets the wonder of all who saw them. The fruit and vegetables were good, but perhaps not so numerous as on former occasions. A word must be said, too, with regard to the arrangement of the tents. I have never seen them look to so great advantage. Down the centre were ranged the magnificent stove, greenhouse, foliaged plants, and Ferns already alluded to, Fuchsias taking the place on the middle of the stage, where they were relieved by the Ferns; then Mr. Kelway's stand of Gladioli occupied the post of honour at one end, and Mr. Veitch's (of Exeter) plants the other. On one side were arranged the Pelargoniums, and on the other the cut flowers. The arrangements all went smoothly, and too much praise cannot be given to the indefatigable Secretary, Mr. Samson, and the Committee for the manner in which everything was carried out.—D., Deal.

#### ROYAL HORTICULTURAL SOCIETY.

##### FRUIT AND FLORAL COMMITTEES AT CHISWICK.

A MEETING of the Floral Committee was held at Chiswick on July 31st. Present, Mr. John Fraser in the chair; Messrs. O'Brien, Turner, Woodbridge Dominy, Hudson, Herbst, Laing, and Barron (Secretary).

*Caladiums.*—Three marks were given to the following:—Argyrites,

candidum, Alfred Bleu, Pictum, Madame Marjolin Sch ffer, Clio, Madame Alfred Bleu, Mons. A. Hardy, Dr. Lindley, Ceres, Mithridate, Luddemannii, Rameau, Laingii, Prince of Wales, Ville de Mulhouse, Comtesse de Condeixa, Minus erubescens, Gerard Dow, and Paul Veronese.

Two marks were given to the following:—Madame de la Devansaye, Princess Alexandra, Madame Heine, Chantini, Max Kolby, and John R. Box.

*Adiantums.*—Three marks were given to the following:—Cuneatum, Pacotii, Lathomi, gracillimum, decorum, Victoriae, concinnum, scutum, Sanctae-Catharinae, trapeziforme, macrophyllum, pedatum, formosum, pubescens, hispidulum, Veitchii, amabile, rubellum, Capillus-Veneris, cardiochlena, speciosum, concinnum latum, rhodophyllum, caudatum, farleyense, pentadactylon, and assimile. Two marks were given for Adiantum Luddemannianum.

*Foliage Begonias.*—Three marks were given for Rex, Duc de Brabant, Marshalli, Juliette Paulin, Seneque, Emilie Chate, Madame Trigneaux, Xanthina var. argentea, Helene Uhder, Louise Chre ien, Bettina Rothschild, Discolor Rex Apotheose, Zenobia, Julie Serot, leptophylla, Comte A. de Leon, Marga, Sylvia, and Madame d'Halloy.

*Pentstemons.*—Three marks were given for Purple Queen, Cerise Queen, Virginale, Edison, and Marjolaine.

First-class certificates were awarded for

*Carnation Anna Benary* (Ernest Benary) as a border flower.

*Sweet Pea Princess of Wales* (H. Eckford).

At a meeting of the Fruit and Vegetable Committee, held at Chiswick, August 19th, present—Mr. John E. Lane in the chair; Messrs. Paul, Crowley, Lee, Silverlock, Howcroft, Burnett, Denning, Ellam, and Barron (Secretary), the Committee examined the collections of Potatoes and Tomatoes growing in the gardens, when the following first-class certificates were awarded—viz., *Potato Ellingtonia*, from Mr. Ellington, West Road Garden, Wildenhall, Suffolk.

*Potato Nott's Victor*, from Mr. R. Nott, Vermont, U.S. America.

*Potato The Doctor*, from Mr. G. Pritchard, Green Street, Sittingbourne.

*Potato Charter Oak*, from Messrs. Bliss & Sons, New York.

*Potato Sutton's Reading Perfection.*

*Tomato Hackwood Park Prolific.*

*Tomato Yellow*, from Mr. B. S. Williams.

*Tomato Lord Wolseley*, from Mr. B. S. Williams.

#### NITROGENOUS MANURES.

NITROGEN occurs in manures mostly in three forms—ammonia salts, nitrates, and albuminoid matter. Ammonia sulphate (pure) contains 25½ per cent. ammonia; ammonia chloride (pure) contains 31½ per cent. ammonia; nitrate of soda (pure) contains 16.47 per cent. nitrogen, equal to 20 per cent. ammonia; albuminoid matter contains about 16 per cent. nitrogen, equal to about 19 per cent. ammonia, which sooner or later becomes available as plant food.

Plants obtain their nitrogen chiefly from or through the soil. It is maintained by some that the leguminous plants and the broad-leaved root crops derive a portion of their nitrogen through the leaves from the atmosphere; but this, to say the least, is doubtful.

Nitrogen exists in the soil in three forms:—1, As insoluble organic compounds, the intermediate products of vegetable decay; 2, as soluble compounds of nitrogen, such as the ammoniacal and nitrate salts; and 3, as free nitrogen, held in solution in the soil, water, or in the air.

The sources from which the nitrogen of the soil is derived are—(a) From vegetable decay; (b) from the air carried down, as ammonia, nitrates, and organic dust in solution, or in suspension by falling rain, snow, and dew; (c) from the circulation of air through the pores of the soil; (d) from additions of manure.

As regards the food forms of nitrogen, it is only when in the soluble form, as ammoniacal and nitrate salts, that nitrogen can be assimilated by the plant.

Nitrification is the conversion of other nitrogenous compounds into nitrates. The leading conditions for bringing about this change are—1, the presence of mineral fertilisers, particularly of potash, and carbonate and sulphate of calcium—that is, limestone and gypsum. 2, The presence of oxygen of the air, and such substances as can supply oxygen, among which are red oxide of iron. Moisture acts as an agent of change. A free circulation of air also promotes the same change. On the other hand, the presence of caustic lime causes a serious loss of available nitrogen in converting even the already formed nitrates into ammonia and preventing their formation, ammonia thus formed passing into the air. 3, The physical condition of the soil has likewise much to do with nitrification. Such treatment as promotes moisture during dry hot weather, and renders the soil friable, are important adjuncts. Nitrification is more active during hot weather; but if the soil is very dry at the same time, or so compact as to exclude oxygen, ammonia may be formed from nitrates themselves, and thus be lost to the immediate use of the plant.

Now as to the conditions favourable for the retention of assimilable nitrogen in the soil. The mention of the causes of loss will suggest the remedies. The principal loss is found in the solubility of nitrates and ammonia in water. In soils with nearly impervious subsoil the drainage may cause a very considerable carrying away of those and other nutritive elements. Another loss is found in the formation of ammonia, and yet another is caused by the absence of those mineral compounds which act as absorbents, chemical and physical, of nitrogen compounds, such as phosphates, carbonate of lime, and gypsum. One remedy against loss is to have a soil in such condition of looseness by ploughing and hoeing as increases the absorbing power for water, and decreases the evaporating power.

Again, as to the relation which different kinds of crops bear to the food supply of nitrogen. Take first the amount of nitrogen found in different crops. If we have an average crop of 28 bushels of Wheat, with 2500 lbs. of straw, about 45 to 48 lbs. of nitrogen will be present. In a crop of 2½ tons of meadow hay, 50 to 60 lbs. (that is, to each ton, 20 to 24 lbs.), and in a crop of 2½ tons of Clover, from 100 to 115 lbs. of nitrogen (each ton containing 40 to 46 lbs.). In general the leguminous crops—Clover, Beans, Vetches—are rich in nitrogen, while the cereals and grasses are relatively poor in







although the season is getting over, there are abundant fine fruits. In a long vinery Grapes are also looking very well. In the kitchen garden are numbers of tricolor and bronze Pelargoniums for trial and stock, of which already some thousands of cuttings have been taken. These are placed in bog-earth in bottom heat in small thumb pots, shaded from bright sun, and the lights are allowed to remain off, except when heavy rains occur. The cuttings lose little or no foliage in this way. I must not forget to mention that this garden is managed by a self-taught man, and Mr. Connell says he has gained much useful information from constant reference to the Journal.—J. PITHERS.



#### HARDY FRUIT GARDEN.

*Peaches and Nectarines.*—The appearance and rapid increase of red spider upon the foliage of some trees growing against walls facing south and west, from which the coping boards had not been removed, induced us to give particular attention to them. The hot dry weather was doubtless favourable to the spider, but trees upon the same aspects but without coping boards are comparatively free from it. Syringing would have kept the foliage clean, but the pressure of work prevented this being done regularly. Time will, however, certainly be found to remove all the coping boards after the fruit and foliage are safe next spring. The more artificial we make the conditions under which these exotic fruits are cultivated, the greater is the amount of labour required in the culture. Continue to water freely during drought, and remove all superfluous lateral growths, by which expression we intend to convey that all lateral growth is not superfluous; some of it upon healthy vigorous young trees, if selected with due care and tied in thinly, will become well set with triple buds and bear fine fruit next year. Only bear in mind that a single shoot retained unnecessarily shades the other wood, prevents it ripening, and represents just so much wasted vigour and a not unlikely cause of incipient debility in a tree.

*Summer Pruning.*—Lateral growth is still pushing freely. What shall we do with it? We cannot reasonably claim to have more than five weeks before a considerable fall in temperature will check growth and hasten the decay of the foliage. Therefore, let all close pruning close forthwith, and do one of two things: either check lateral growth at once by shortening it to 8 inches, or, better still, give each shoot a twist 2 inches from its base and bend it downwards carefully without actual breakage. This will divert just enough sap into the basal buds to render them plump without starting fully into growth, and it will also prove highly beneficial to flower buds by imparting much additional vigour now, the full benefit of which will be apparent next spring in the large blossom, free setting, and strong healthy growth of the fruit. If, however, close pruning should still be persisted in, the legitimate spring growth will be spoiled, starting as it now must into a lot of weakly growth, upon which the chill breath of autumn will fall, while it is still green, soft, and altogether immature and useless. Prune with a purpose, or not at all. In the hands of an ignorant person a pruning knife is a positive source of mischief, and the best advice we can give such persons is simply to keep the branches of the fruit trees under their care far enough apart to admit light and air freely among them, and to leave the rest to Nature. Rest assured that if this is done fruit fine and abundant will come freely enough in due course. But it will involve some waiting, and if students of our pages do but follow our teaching intelligently and with caution there is no reason why they should not prune with a certainty of aim that must lead to satisfactory results.

*Profitable Fruit-Growing.*—Examine closely the peculiarities of each sort of fruit as it approaches maturity, and note how near it comes to a fair standard in quantity, quality, size, and appearance. Apples and Pears that are really good in quality, and which prove as generally productive as Keswick Codlin and Beurré Clairgeau, are the sorts to plant enough of to insure a supply of fruit. For market, earliness and lateness also tells, and we may usefully note that now in the middle of August we have still a few sound fruit of Gooseberry Apple, which have been in the fruit store since last October, so that we may literally claim to have Apples throughout the year, the fruit of Margaret being already over, and Duchess of Oldenburgh is now ready.

#### FRUIT-FORCING.

*Melons.*—When the fruits commence swelling thin them to three or four to a plant, leaving the best and most even-shaped fruits. Syringe the plants and house in the morning and afternoon of fine days, but damp the house only in dull weather; and when the temperature is likely to fall below 70° at night the fire should be lighted or the heat turned on. Ventilate freely on all favourable occasions, and close soon after three o'clock during sunshine with a temperature of 80° to 85° and rise to 90°, with plenty of atmospheric moisture. Give the plants when necessary a good soaking of tepid liquid manure at the roots when swelling off their fruits, which will greatly assist in their development. The latest plants of all will by this time be showing fruit, and should

have a somewhat dry, warm, and well-ventilated atmosphere, impregnating the blossoms daily as they expand, and stopping at the same time a joint beyond the fruit. Keep them somewhat dry at the roots, but not to the extent of flagging. Plants with the fruit advanced for ripening may have a lessened amount of moisture both at the roots and in the atmosphere; and if they are very vigorous, or the fruits show an inclination to crack, cut the stem half to three parts through a little below the fruits, and admit a little air constantly.

*Frames.*—Plants growing in dung-heated frames or pits will need water sparingly now that the days are getting shorter, and the moisture that must follow greater. The plants will also need little water at the roots, inasmuch as they can and do push into the dung and leaves at discretion, where they find a congenial and moist temperature, also a good supply of stimulating food. As the chance of ripening late crops in frames depends greatly on the weather, every opportunity available should be utilised. Close early in the afternoon, and if the day be fine damp the plants lightly at the same time. Keep the laterals well stopped and the foliage fairly thin. See that the linings are attended to by adding some fresh fermenting material, and place some mats over the lights when the nights are cold.

*Cucumbers.*—The house in which winter Cucumbers are to be grown must be thoroughly cleaned. The woodwork should be washed with hot water and softsoap, and the brickwork with hot lime, making the whole sweet and clean for the reception of the plants. Examine the drainage and see that it is in perfect condition before putting in the soil. The soil most suitable is three parts turfy loam, light rather than heavy, and one part peat, with sufficient charcoal to keep the soil open. A dry day should be chosen for getting in the material, also for mixing; and previous to putting in the soil the drainage must be secured by a layer of turf grassy side downwards. The soil should be laid in a ridge or in hillocks, and should have a base of about 2 feet, and about 10 inches deep in the centre, having a flattened top half the width of the base. It should be put together moderately firm. If the seed has been sown and treated as advised in our last calendar the plants will be ready in the course of a week or so for shifting into their final quarters or planting on the hillocks. If a house cannot be devoted to them they may be put in their fruiting pots, and the plants trained with a single stem until they reach the trellis, for it is necessary that they have a position where they can have plenty of light and a stove temperature. The plants having been watered some time previous to planting-out should in being turned out have their roots disturbed as little as possible when planting, pressing the soil firmly around each plant, after which they should be supported by small sticks, and these fastened to the first wire of the trellis. If the sun be bright and powerful at the time of planting it will be advisable to shade them for a few days until the plants become established, when it should be discontinued altogether.

*Strawberries in Pots.*—Runners for the most part are this season late, owing to the dry weather; but the first batches are in their fruiting pots, and no time should be lost in getting in those for successional and late forcing. These may have pots a little larger than the earliest batch, but nothing is gained by large pots, those 6 or 7 inches in diameter being quite large enough. The potting should be done firmly, and the pot stood on a hard bottom in an open but sheltered situation, giving each space for development. A surfacing of horse droppings is placed on the soil, which encourages surface roots. The earliest hatch are now rooting freely in their fruiting pots, and will need to be examined occasionally and kept free from weeds and runners. The general stock should be dewed overhead in the morning, and again in the afternoon between three and four o'clock, and water given at the roots whenever they require it. A small maggot is sometimes very troublesome, coiling itself on the leaves, and perforates them in a short time. It is readily disposed of by hand-picking carefully upon its first appearance.

#### PLANT HOUSES.

*Poinsettias.*—The earliest batches of the plants should be gradually hardened and placed in cold frames without further delay. When kept in heat the whole season the plants draw up tall and weak, and only poor bracts are produced. The growth made while in cold frame will be stout, sturdy, and well matured, which is essential for the production of handsome dwarf plants with their foliage to the base, and large heads of brilliant scarlet bracts. While in frames ventilate liberally during the day when fine, and the frame may be closed in the afternoon. Plants that have just been rooted should be transferred into 4 or 5-inch pots, and, as soon as they are rooting in the new soil and have been hardened, grow them as cool as possible. The whole of these plants should be grown exposed to light and the full force of the sun. The watering must be done carefully, and the plants not allowed to suffer by an insufficient supply. When the pots are full of roots feed with artificial manure on the surface and with clear soot water. Those in possession of strong firm cuttings may, if they are rooted at once, have some valuable late dwarf plants in 3 and 4-inch pots.

*Euphorbia jaequiniaeflora.*—One of the most effective winter decorative plants that can be grown. All that are established in their flowering pots should be in cold frames exposed to the sun and plenty of air. When grown in a confined atmosphere the plants grow tall and soft, and flower very imperfectly; plants drawn up in heat are useless for decoration. When these vary in height from 1 to 2 feet they are most useful, and when freely exposed to light and air they flower abundantly. In order to induce these plants to branch they must be allowed to grow, say, 18 inches high, and then be well cut back into the firm wood; this should be done previous to placing them in the



largest pots. Plants that have been subjected to this treatment, and have grown as previously directed, will be sufficiently stout to support themselves, or at the most need only a small stake up to the place where they commence branching. It is a mistake to stake them straight up to the point, for the growths arch naturally, and in this condition they are the most beautiful. Another batch of these may still be rooted, but this time three or four should be placed together and grown without stopping or potting. These plants do not require much root room, and will do well in the same soil as the Poinsettias—namely, good loam, a seventh of manure, and a little sand. Be careful not to overwater these plants while they are in cold frames.

*Centropogon Lucyanus*.—This is not cultivated half so extensively as it deserves to be, for without doubt it is one of the most beautiful flowering plants. All plants that are well advanced in growth will be much better from this date in cold frames than if kept in heated structures. As the plants are turned out the necessary staking must be done, so that they will have plenty of time to turn their foliage and the top portion of the shoots assume a natural appearance. They arch outwards, and plants in 6-inch pots with, say, six strong shoots, all arching naturally, have when in bloom a very effective appearance in the stove, conservatory, or intermediate house. When in flower this plant associates admirably with the varieties of *Calanthe vestita*, the effect produced being charming.

*Tydaea Madame Heine*.—One of the best varieties that can be grown for the stove from the month of January onwards. Young plants rooted and established some time ago should now be placed into 5-inch pots, the size in which they are intended to flower. These must be grown in a warm position, the foliage not syringed, and the plants shaded from bright sunshine. Although these plants dislike being syringed, they enjoy a moist atmosphere, and should always stand upon some moisture-holding material. This is an evergreen variety, and must always be propagated from cuttings, as it forms no underground stems.

*Gesneras*.—The earliest of these that are growing strongly may now be transferred from the small pots in which they were started to those in which they are intended to flower in. The removal of Poinsettias and other plants to cold frames will allow of these having more room and better positions. Tubers that have been kept dry and at rest until now should be started at once in moist brisk heat. It is a good plan when starting a late batch of tubers to pot them in small pots, so that they will not need disturbing afterwards until they are placed in a larger size. When started in pans they are thrown back more or less when they are ready for small pots. These plants, as well as Tydaes, do well in good loam and peat in equal proportions, with a liberal addition of coarse sand.

## THE BEE-KEEPER.

### SHALL WE BREED HYBRIDS?

I HAVE no barren statements to offer. I conceive that the mind of the bee-keeper of to-day would relish something in accord with his present knowledge of bee-culture. An assertion of what I am doing, and have done, still falls upon the ear of the most credulous as merely an assertion. I wish, if possible, to convince the reason of every reader. My preference for hybrids, or crosses between the best strains of German and Italian bees, is based upon certain facts, many of which are well known to the reader of less experience.

Did you never think it strange that the product of two races of bees should, as a rule, possess certain traits in a more radical degree than either parent race? *Apropos* to the above, do you not distinctly remember that the decisions of bee-keepers have been largely in the majority—that hybrids, crosses between Italian and German bees, were excellent honey-gatherers, equalled by few and excelled by none; but oh! so universally cross?

Just why it should be a rule that this product possessed more belligerency than either parent, attracted my attention some years ago. I first built up a theory to account for the enigma, to which by fitting everyday facts, I proved to my satisfaction to be correct.

My first proposition is, that we have but two distinct races of bees—the dark and the yellow; and, second, that the yellow race of bees possess much the most belligerent disposition.

A thousand voices will now ask, "Why has the black bee been called the crosser?" I will try to explain. If you receive three or four stings during the manipulation of ten colonies of dark or German bees, and only one sting in handling the same number of yellow colonies, would you not arrive at the conclusions so unanimously declared by bee-keepers of the past? Still, a mistake has been made. In opening a hive you are very rarely stung by bees that do not take wing. A well-known and marked characteristic of that branch of the yellow race known as the Italians is, that compared with the dark or German bees

they are very tenacious of their foot-hold on the combs and in the hive. I think I am safe in saying that during the manipulation of a colony, from eight to ten times as many bees take wing when handling the German bees as would when handling Italians.

Now, as the proportionate number of stings received is not one-half as much against the German bees as their greater proportion are in condition to sting, here is an argument of two to one in favour of the good nature of the Germans; but here are more arguments based on what your experience has already taught you. There are ways to test the disposition of bees when on the wing—ways which we all use of necessity. Apply smoke equally to the races under equally unfavourable conditions, and while the Germans mind its admonitions and give up at once, the Italians seem to "lay back their ears" preparing for battle as soon as the fog clears away.

Another way: When it is too cool for bees to fly, if you approach a hive carefully (I mean in the winter), and cautiously pull back the cloth cover, black bees, as a rule, will show no resentment, while Italians will tip up their posteriors and thrust out their stings. By the worst of treatment arouse a colony of Italians till they take wing quite freely, and you have nothing worse to fear from blacks.

It seems that the offspring of these two races, as a rule inherited about equally from the dispositions of the parents while those crosses coming from the little blacker German strain and the bright yellow Italians were most sure to partake of the light-footed, take-wing tendency. Does this not account for the fact that the hybrids were, as a rule, worse to handle than either parent race in its purity? Does it not also account for the ferociousness of the Cyprians? They possess to the full extent the innate meanness of the yellow race and light-footedness of the blacks.

Now, if you will rid your apiary of all German bees except the larger brown variety, and of all the yellow bees except the leather-coloured Italians, you will find cross-hybrids largely in the minority. You will find that most of your hybrid colonies are as good-natured as any bees you ever saw, and standing well up to or above the reputation given them by the bee-keepers of the past—as being *par excellence* as surplus honey-producers.

You must not forget that this most valuable strain is not a fixed race; that it is liable to sport from one "side of the house" to the other—*i.e.*, strongly show the tendencies, sometimes of one parent and sometimes of the other. They will rarely fall below the aggregate worth of either parent. This sporting tendency gives a most excellent opportunity to breed for qualities. Were I keeping either race in its purity, I should always breed for qualities, rearing my queens from my best colonies, which produce the largest quantity of surplus honey, and good behaviour as one of the main points of valuation. No matter whether you have purchased a queen, and are breeding for Germans or Italians in their purity, or their crosses in their excellency, if you do not direct their breeding, rearing your queens from your best colonies, you will fall behind those who do, and you will always need to purchase queens from them.

For the benefit of many who are now breeding from hybrids, let me say that it is my advice to breed from the greatest honey-gatherers, and always such bees as stick to the combs in the good old-fashioned Italian style. I want no Cyprians or Syrians to knock at my apiarian gate, unless they are possessed of the fast-footed tendency. I cannot admit such a queen, even though she came mantled in a ten-dollar greenback.

My opinion is, that very many who suppose that they have "good-natured Cyprians," have only Italian bees. If we find such radical differences in disposition of different colonies of the new races as is reported from those who think that they have the pure Cyprians and Syrians, then surely there is little fixedness to be found in these new races. Next to the crossed strain of bees above described, I prefer the leather-coloured Italians in their Simon-purity. Early and late brood-rearing are now being proven to be injurious qualities. My students will tell you that our forty-five colonies that could not breed at all till they gathered the pollen of 1884, notwithstanding they ceased breeding early last autumn, are now the strongest colonies we have in our yard; and everyone has been the pink of health for a year past.

Would that I were as sure of an 1884 fall honey-crop as that the introduction of the Cyprians and Syrians into this country has been a serious drawback to our business. I have tried to appeal to known facts and reasons, asking you to take therefrom nothing for granted. How well I have succeeded I leave the reader to judge.—JAMES HEDDON (in *American Bee Journal*).



## THE BEST HIVE.

WOULD any correspondent of the Journal advise a cottager which is the best hive for bees and procuring the most sectional super honey? I have eight straw hives, which I intend at the end of the Heather to make into four. Should these remain in the straw hives and the swarms from them next season be placed into what might be recommended, or would it be better to put some of them in at the end of the season? I have three straw Stewartons which I made from Mr. Pettigrew's instructions in the Journal. Can these have sectional supers to advantage? If they can, please explain how.—EDWARD APPELBY.

[The above question has been answered repeatedly within the past few weeks, therefore I advise you to study what was then said on the subject. Meanwhile I will extend the information. The hive most suitable for profit where good management in every detail is strictly carried out is the hive that conserves the heat, retaining a uniform temperature throughout the variable year, with facilities to assist the bees to regulate the temperature during excessive heat, and thereby keep the bees at constant work. In such hives as the Stewarton or the deep compound frame hive they continue to bring forward their brood from the advantages such hives have in being better provided at all times with sufficient stores—an important matter, which every bee-keeper should study to have. Hives with little stores fill few supers, with a still further disadvantage that the bees destroy much brood. The hive that preserves its brood well throughout the year is the one that is most profitable. Two hives on equal terms in February, the one rich in stores and of proper construction, and which requires no feeding, the other poor in stores, with the stimulative battle continually on, which tends greatly to the loss of bees, cannot be expected to be in as good a position as the former to collect honey when the opportunity occurs. Then if in deep narrow hives the bees in February bring forward but five hundred more bees than in those wide and ill-provisioned, that five hundred means at least five thousand by June, which is explanatory in itself. The foregoing will perhaps answer the query, but at another time I will give some practical details.]

The other question, whether the four swarms should be placed into proper hives, and fed, I suppose, or to join them to the remaining four, depends entirely upon whether it is wished to diminish or increase the stocks. Either of the plans will do providing feeding is properly attended to or they are joined successfully. I cannot advise putting the bees into the straw Stewartons, being ignorant as to their construction; but if of the proper shape and size, and fitted with ventilation beneath, and the crowns of the hive are made so that the bees are admitted to supers at outside combs only, they will do very well. Sections and supers can be wrought to advantage on them, but not if they do not possess these properties. Besides, if he wishes to be successful with supers and sections never place them anywhere than what the name implies—viz., above—and do not neglect to keep these dark and warm.—LANARKSHIRE BEE-KEEPER.]

## TRANSFERRING BEES FROM AN OLD TO A NEW HIVE

KINDLY let me know through the *Journal of Horticulture* how I had better proceed with a very old straw hive. It is full of honey, and in such a dilapidated condition as not to bear moving. I think the only way will be to destroy the bees by putting something in the numerous holes to suffocate them. Please tell me what would be the best to use. I am quite a beginner and have never done much with bees.—W. C. L.

[If there is no bee-keeper near who understands driving and "W. C. L." cannot perform the operation, get someone to act according to the following instructions:—We cannot advise the suffocation of the bees. Approach the hive gently and smear the entrance slightly with carbolic acid, or blow a few good whiffs of smoke either from a roll of fustian or brown paper if you have no bellows; then uncover and undo all the fastenings, lift the hive and board on to a table and gently invert the hive. If timorous, keep smoking them a little for safety, but it is better if it could be done without; or the entrance of the hive may be closed and a few raps on its side with a split switch will cause the bees to gorge themselves, which is the best quieter, when it may be inverted and an empty hive placed over it. The rapping on the under one containing the bees will cause them to ascend to the empty one, where the bees may either remain to be fed up into a stock or transferred into whichever kind of hive most desirable: 30 lbs. of sugar will be required for that purpose. In all probability there will be some brood; the combs containing such should be placed in a box over the bees till hatched out. The box should be fitted with fillets, so that the combs are kept the proper distance apart. After the brood is hatched remove the box and separate the bees from the combs and return them to the hive. If the hive is flat-topped it will stand steady, but if bell-shaped it should be supported by some hollow vessel; the rim of an old sieve is efficient for the purpose.]

## TRADE CATALOGUES RECEIVED.

Hogg & Wood, Coldstream and Duns, N.B.—*Catalogue of Dutch Flower Roots.*

Dickson, Brown, & Tait.—*Catalogue of Bulbs.*

Robert Veitch & Son, 54, High Street, Exeter.—*Catalogue of Dutch Bulbs.*

Sutton & Sons, Reading.—*Bulb Catalogue for 1884.*

Wm. Paul & Son, Waltham Cross.—*Bulb Catalogue.*

James Dickson & Sons, 108, Eastgate St., Chester.—*Catalogue of Bulbous Flower Roots.*

S. Mahood & Son, Putney.—*Illustrated Catalogue of Bulbs.*



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Book (A. B.).—Burbidge's "Domestic Floriculture," price 7s. 6d., is a useful work on the subject. You will also find much information in an article by Mr. Luckhurst in this Journal, page 394, November 8th, 1883.

Cucumbers Diseased (E. T., Tamworth).—The samples you send are not sufficient to enable us to determine the precise form of the Cucumber disease, as you have cut off the end of the fruit that we particularly desired to see. If it is what is known as the fruit form of the disease it is very difficult indeed to eradicate. No simpler remedy appears to have been found than raising the night temperature of the house to say 75° to 80° at night. No one can account for such outbreaks any more than they can trace the origin of the ailments of individuals. If your plants are attacked by the root form of the disease, which is illustrated on page 397, vol. iii., Third Series, November 3rd, 1881, the vibrios attacking the roots have been introduced either with soil, manure, or water, and in that case fresh plants must be had with materials for growing them from another source.

Cucumbers for February (W. H.).—Now you have supplied the "missing link" we can answer your letter. You will find either Telegraph or Cardiff Castle better than the variety you name. We should grow both if space permitted. The former is the larger and productive, the latter prolific and excellent in quality. Sow the seed at once, allowing the plants to have all the sun and air possible to keep them sturdy. The stronger the growth before November the better will the plants bear in February. They will produce fruits before, but they can be removed if not wanted, and it is unwise to let the plants bear heavily in a young state.

Peas and Beans Dying (M. G.).—We have seen many failures this year as the result of the dry weather and the increase of insects on the foliage, which arrested the growth so seriously that the roots collapsed. Unless anything of a deleterious nature has been supplied to the roots we can suggest no other cause of your crops dying. Your letter contains nothing to enable us to form a definite opinion on the subject. We suspect it is a case of simple exhaustion.

Raising Conservatory Bed (J. W. H.).—We do not quite understand what you intend to convey. You say the "whole surface of the beds are covered with plants," but whether you mean the climbing plants or plants in pots we cannot tell. So far as we understand the case we should prefer adding soil, but taking care not to bank it up the stems of the climbers, and if a neat surface is required for standing pots on, it can be formed by a layer of gravel.

Management of Figs (R. S.).—When Figs are grown out of doors or in an unheated house all attempts to produce a second crop should be checked by pulling off all the little fruits as soon as they are sufficiently large to get hold of. The tree will then make another effort at fruiting along the whole length of the current year's growth, and the chances are that the embryo fruit—that which would be the third crop in a favourable climate—will just advance to the right stage for remaining dormant through the winter. The point to aim at is to have in autumn before the fall of the leaf the greatest possible quantity of little plump buds about the size of a Radish seed on thoroughly ripened wood.

Bronzed and Silver-leaved Pelargoniums for Bedding (S. E.).—The following are varieties of proved worth:—*Silver-leaved*—Princess Alexandra, Miss Kingsbury, and as a dwarf grower Little Trot. *Flower of Spring*, with creamy variegation, is also an excellent bedder. *Bronze-leaved*—*Maréchal MacMahon*, Black Douglas, Rev. C. P. Peach, and as a dwarf for edgings Golden Harry Hieover. The manure you name and your proposed mode of applying it will be good for all the plants to which you refer.

Propagating Laurels and Yews (J. B.).—Laurel cuttings should be taken of the current year's growth with a joint or two of last year's, inserting them about two-thirds their length in a sheltered situation, making the soil very firm around them. They should be inserted at the close of September or early in October. Yew cuttings should be taken off with a heel to the previous week's growth, and be divested of the leaves half way up the cuttings, to which extent they should be inserted in sandy loam surfaced with sand, which may be done now, the wood being firm; or the ripened growth may be inserted in April, choosing a shady border. No artificial heat is necessary.

Gardener Leaving (A. L. L. W.).—We are quite sure you intend to act kindly towards your gardener, and you are really giving him a week's more notice than he is strictly entitled to receive. Still, the time is short, and does not give a man much chance to procure another situation, and on this account it is not unusual to give a month's notice in cases similar to yours. This, however, is given out of consideration to a servant, and your gardener (unless there is a signed agreement to that effect) is not entitled



to the wages he demands in lieu of notice. The name of your plant is given below.

**Margaret and Madeleine Apples (North Lincoln).**—Notwithstanding the circumstance that the variety known under the above name in your district is a pale yellow Apple, the true old Margaret is a red-striped fruit. On this account it is also called the Early Red Margaret, Red Juneating, and several other names. The description of this Apple is recorded in the "Fruit Manual" as follows:—"Fruit medium-sized, roundish-ovate, and narrowing towards the eye, where it is angular. Skin greenish yellow on the shaded side, but bright red next the sun, striped all over with darker red, and strewed with grey russet dots. Eye half open and prominent, with long, broad, erect segments, surrounded with a number of puckered knobs. Stalk short and thick, about half an inch long, inserted in a small and shallow cavity. Flesh greenish white, brisk, juicy, and vinous, with a pleasant and very refreshing flavour. A first-rate early dessert Apple. It is ripe in the beginning of August, but does not keep long, being very liable to become mealy. To have it in perfection it is well to gather it a few days before it ripens on the tree, and thereby secure its juicy and vinous flavour. The tree does not attain a large size, being rather a small grower. It is a good bearer, and is quite hardy, except in light soils, when it is liable to canker. It is well adapted for growing as dwarfs, either for potting or being trained as an espalier, when grafted on the Paradise or Pomme Paradis stock. This is a very old English Apple. It is without doubt the Margaret of Rea, Worlidge, Ray, and all our early pomologists except Miller." The "pale yellow Margaret" to which you refer is no doubt the Madeleine or Summer Pippin:—"Fruit rather below medium size, roundish. Skin yellowish white, with numerous imbedded pearly specks, with an orange tinge next the sun, and sometimes marked with faint streaks of red. Eye small and closed, set in a narrow basin, and surrounded with several unequal plaits. Stalk short and slender, not extending beyond the base, and inserted in a funnel-shaped cavity. Flesh white, very crisp and tender, juicy, sugary, and highly flavoured. An early dessert Apple of good quality; ripe in the middle and end of August. The tree is a free grower, and is readily distinguished by the excessive pubescence of its leaves and shoots. Mr. Lindley in the 'Guide to the Orchard' considers this variety as identical with the Margaret of Ray, which is a mistake. It is, no doubt, the Margaret of Miller, but certainly not of any English author either preceding or subsequent to him. It is to be observed that the lists of fruits given by Miller in his dictionary are chiefly taken from the works of the French pomologists, while the fruits of his own country are almost wholly neglected, and the only reason we can assign for him describing this variety for the Margaret is because our own Margaret being by some authors called the Magdalene, he might have thought the two synonymous." It is not surprising that a little confusion should exist as to the identity of the Margaret. The two Apples named are perfectly distinct, the former being the more profitable to grow for supplying the markets with early fruit.

**Storing Apples (L. L.).**—The chief point to attend to in the preservation of fruit is to handle it with the greatest care, not casting the Apples into baskets and turning them out roughly, as if this is done bruises are made, though they may not be apparent at the time, and decay is incited. A cool dark cellar or shed is suitable, but with the windows or door opened occasionally for the dispersion of moisture for a week or two after the fruit is stored. A very dry, light, and warm place is not recommended, as in such the fruit is apt to shrivel.

**Grapes Mildewed (Leominster).**—The "disease" which is "quite new" to you is quite old to us. Mildew is the cause of the putrefaction of the berries and nothing else. It has been caused no doubt by the cold damp atmosphere to which you refer before the fire was lighted, with defective ventilation, and the "nearly dust dry" inside border. The remedy was applied too late. The sulphur would probably have been efficacious if applied immediately the mildew was seen. Such bunches as you have sent are beyond cure, but all may not be so badly attacked. We can only advise you to cut off all the worst and remove the decaying berries from other bunches that may contain sound berries; saturate the inside border, but by watering in the morning, not at night, when the atmosphere must be tolerably dry; ventilating abundantly in the daytime and freely at night, firing if needful to maintain the temperature at 65°, also persevering with the use of sulphur. If this treatment does not save the crop nothing will, and you may conclude its loss is the result either of inexperience or neglect. The Vines will be attacked next year if better attention is not accorded them; but by thoroughly cleansing the house after the Vines are pruned, dressing the rods with sulphur, and better management generally, a repetition of the attack may possibly be prevented, and certainly such ruin as the examples before us indicate may be averted.

**Grapes not Setting (Sussex).**—The bunch you have sent indicates a deficiency of pollen at the time the Vines were flowering. Shaking the Vines, tapping the bunches, and lightly drawing the hand over them, or shaking the pollen on them from other bunches in which it is plentiful, will assist the fertilisation and consequently stoning of the fruit. Judging by the leaf sent, the Vine appears very healthy, and as the other varieties stone well the failure is not attributable to the deficiency of lime in the border, but is a case of defective fertilisation.

**Exhibiting Fruits (J. E. W.).**—Each case is or should be determinable by the schedule, and without seeing the conditions we cannot answer your question. We can only say when there are classes in which Grapes, Melons, and other fruit grown under glass are staged in competition, and when there are other classes for small fruits, it is usually meant that Grapes and fruits grown under glass are excluded from the latter. The terms "large" fruits and "small" fruits are far too indefinite to be inserted in schedules without a clear explanation of the kinds of fruits that are and are not intended by the committee of a society to be staged in competition in the respective classes.

**Sea Eagle and Lord Palmerston Peaches (J. MacDonald).**—The fruit of Sea Eagle was quite decayed when it was received, and it was impossible to form an opinion upon it; we have tasted it of excellent quality. Lord Palmerston is a large late Peach, and not always good.

**Striking Rose Cuttings (J. B.).**—The method of striking the cuttings in boxes was described by Mr. Taylor on page 39, vol. iii., third series, July 21st,

1881, but it was written on the assumption that there was convenience for potting the plants afterwards, and had you read attentively you would have perceived that Mr. Taylor, on page 350 of the same volume (the issue of October 20th) recommended a different method for persons like yourself who have "no means for establishing the young plants in pots." By inserting cuttings in boxes you have therefore not adopted the plan he advised under your own particular circumstances; still you may succeed. You wish to know how long the cuttings should be left before air is admitted. Mr. Taylor finds his cuttings transformed into plants in a month after insertion, and air is then admitted gradually at first until the plants can endure and enjoy full exposure. It is easy to know when roots are forming by the appearance of the young growths. In your case it will probably be best to allow the plants to remain in the boxes till spring, banking ashes round them to preserve the roots from frost, and also affording the plants a little protection if it may be needed in winter. They can be planted out in good soil when they are starting into growth in the spring. We have struck numbers of Tea Rose cuttings by affixing two boards on edge, closing the ends, and bridging the space across with squares of grass made secure, placing in sandy loam, making it firm 3 inches deep, and inserting the cuttings 6 inches apart, keeping them moist and shaded to preserve the foliage fresh, admitting air when rooted, and allowing the plants to remain till spring, when they were potted or planted as was desired. Hybrid Perpetuals we have raised with equal success by inserting cuttings of ripened wood about the middle of October, as if inserting Gooseberry cuttings 9 inches apart in rows twice that distance asunder, and allowing them to remain the whole of the following year; in fact, until they were good flowering plants. We have raised Roses in that way for the last twenty years, and it is the method recommended by Mr. Taylor in his second article for persons to adopt who have no means for potting their plants.

**Culture of the Pomegranate (Pen and Ink).**—In the south of England this shrub is usually grown out of doors trained to a wall with a sunny aspect, but though it often flowers we do not remember an instance of fruit being produced. Under glass it can be grown in pots, employing good turfy loam and a little well-decayed manure, but it rarely fruits, even with the greatest attention. It is, however, an ornamental plant for a conservatory, and on that account it is chiefly grown.

**House for Orchids and Ferns (A Constant Reader).**—If the house has so little sun at this time of year it would have still less in the winter, and it is not at all likely that the Stephanotis would succeed, as the growth would not be properly matured. It could, however, be tried if you are particularly anxious to have it on the roof, though you must not entertain very high hopes of success. The house appears to be much better adapted for cool Orchids and Ferns than ordinary stove plants, though you could grow Caladiums during the summer months if desirable. A minimum winter temperature of 55° will be ample, and it should not rise above 60°, except in fine weather, with a little ventilation. The following Orchids would prove useful, and easily grown:—*Ada aurantiaca*, *Anguloa Clowesi*, *Barkeria elegans*, *Cœlogyne cristata*, *Cypripedium insigne*, *C. villosum*, *Dendrobium nobile*, *Disa grandiflora*, *Epidendrum vitellinum*, *Lælia anceps*, *L. autumnalis*, *Lycaste Skinneri*, *Masdevallia Harryana*, *M. ignea*, *M. Lindenii*, *M. Shuttleworthii*, *M. Veitchiana*, *Odontoglossum Alexandræ*, *O. cirrhosum*, *O. Pescatorei*, *O. Rossi*, *Oncidium cucullatum*, *O. ornithorhynchum*, and *Sophranitis grandiflora*. Of Ferns the following would be suitable:—*Adiantum cuneatum*, *concinnum*, *gracillimum*, *rubellum*; *Asplenium bulbiferum*, *furcatum*; *Davallia bullata*, *dissecta*, and *parvula*; *Doodia aspera*, *Gleichenia Speluncæ*, *Nephrolepis Duffii*; *Pteris cretica*, *serrulata*, and *tremula*, with *Selaginella Kraussiana*, *Martensi*, and *Wildenovi*, and *Todea superba*. Trained to the roof *Lygodium scandens* would grow freely and have a very graceful appearance.

**Names of Fruits (G. Edwards).**—No. 1 Peach is probably Early Beatrice. The others we cannot even suggest a name for. In sending Peaches and Nectarines to be named they should always be accompanied by the leaves, and also information as to the flowers, whether they are large or small. We do not know the name of the Orange. (Reader).—Your Apple is the Margaret. For further particulars relative to this Apple see reply to another correspondent.

**Names of Plants (C. Budeman).**—1, *Gymnogramma chrysophylla*; 2, *Blechnum brasiliense*; 3, *Nephrolepis tuberosa*; 4, *Adiantum assimile*; 5, *Adiantum tetraphyllum*; 6, *Selaginella viticulosa*. (T. F.).—*Leycesteria formosa*. (E. Y.).—*Dieffenbachia picta*. (Pen and Ink).—1, *Helianthus annuus*; 2, *Statice Limonium*; 3, *Achillea serrata*; 4, *Sedum spectabile*; 5, *Sedum spurium*. (A. L. L. W.).—The plant is related to the Irises, and bears the name of *Anomatheca cruenta*. It is hardy in the south of England and can be grown in pots in a greenhouse, which is the better way of treating it in cold districts. Light turfy loam and a little peat and sand suit it, providing good drainage and withholding water when the leaves die in the autumn. (H. M.).—As we have said times out of number, it is impossible we can undertake to name varieties of florists' flowers and plants that have originated from seed. We name species of plants only when they reach us in flower and in good condition. Even if it had been our custom to name such plants as you have sent, we could not do so, for the small specimens simply put in a dry box without any care having been taken to keep them fresh, reached us as dry and shrivelled as paper. (Denham).—*Fraxinus pubescens*.

#### COVENT GARDEN MARKET.—AUGUST 20TH.

OUR market is now getting quieter, though large consignments are reaching us from the continent. Prices have been well maintained.

FRUIT.															
				s.	d.	s.	d.					s.	d.	s.	d.
Apples ..	..	..	½ sieve	2	6	to	4 6	Oranges ..	..	..	100	6	0	to	10 0
Cherries ..	..	..	½ sieve	0	0		0 0	Peaches ..	..	..	per doz.	2	0		10 0
Chestnuts ..	..	..	bushel	0	0		0 0	Pears, kitchen ..	..	..	dozen	0	0		0 0
Currants, Red ..	..	..	½ sieve	0	0		0 0	„ dessert ..	..	..	dozen	1	0		3 0
„ Black ..	..	..	½ sieve	0	0		0 0	Pine Apples English ..	..	..	lb.	2	0		3 6
Figs ..	..	..	dozen	1	0		2 0	Plums ..	..	..	½ sieve	4	0		7 0
Grapes ..	..	..	lb.	1	0		2 6	Strawberries ..	..	..	lb.	0	0		0 0
Lemons ..	..	..	case	15	0		21 0	St. Michael Pines ..	..	..	each	2	0		6 0



## VEGETABLES

	s. d.	s. d.		s. d.	s. d.
Artichokes .. .. dozen	2 0	4 0	Lettuce .. .. dozen	1 0	1 6
Beans, Kidney .. .. lb.	0 3	0 0	Mushrooms .. .. punnet	0 0	1 6
Beet, Red .. .. dozen	1 0	2 0	Mustard and Cress punnet	0 2	0 0
Broccoli .. .. bundle	0 9	1 0	Onions .. .. bushel	2 6	3 0
Brussels Sprouts .. ½ sieve	0 0	0 0	Parsley .. dozen bunches	2 0	3 0
Cabbage .. .. dozen	0 6	1 0	Parsnips .. .. dozen	1 0	2 0
Capsicums .. .. 100	1 6	2 0	Potatoes .. .. cwt.	4 0	5 0
Carrots .. .. bunch	0 3	0 4	"    Kidney .. cwt.	4 0	5 0
Cauliflowers .. .. dozen	2 0	3 0	Rhubarb .. .. bundle	0 4	0 0
Celery .. .. bundle	1 6	2 0	Salsafy .. .. bundle	1 0	0 6
Coleworts doz. bunches	2 0	4 0	Scorzonera .. .. bundle	1 6	0 6
Cucumbers .. .. each	0 3	0 6	Shallots .. .. lb.	0 3	0 0
Endive .. .. dozen	1 0	2 0	Spinaeh .. .. bushel	1 0	2 0
Herbs .. .. bunch	0 2	0 0	Tomatoes .. .. lb.	0 4	0 0
Leeks .. .. bunch	0 3	0 4	Turnips .. .. bunch	0 4	0 0



## SEASONABLE HINTS ON SHEEP MANAGEMENT.

IN sultry showery weather the maggot fly often causes much suffering among sheep. Dipping in a bath containing Cooper's powder a fortnight after shearing is an excellent plan by way of preventive, but it does not render them altogether safe from attacks. Sheep suffering from diarrhœa soon have the wool upon the tail and hind quarters clotted with filth; and unless they are watched closely and trimmed frequently the fly will deposit eggs in the foul wool, maggots will then soon appear and burrow under the skin, causing so much irritation that the tortured animal is almost constantly rubbing itself in vain efforts to get rid of the pest. The wool falls off, and it is possible that mortification and death may follow. Neglect leading to such suffering is unpardonable, and it is our rule to have the flock inspected twice daily, symptoms of the fly being easily detected by the eyes of an experienced person without handling the sheep. Cuff's ointment is our favourite remedy: its effect is thorough and instantaneous, a little poured upon the wool and dispersed among it by rubbing causing every maggot to leave the wool or to die. When a sheep is trimmed for diarrhœa a little dry earth powdered or dust is afterwards shaken over the foul part, both as a disinfectant and to make it dry and less liable to attract the fly. Bad cases of foot-rot also induce the fly to lay its eggs there. We once saw a neglected sheep with its foot and leg much swollen, the hoof loosened by mortification and crowded with maggots. It was so bad a case that we thought nothing could save the foot. It was at once bathed with warm water, the maggots routed out, and a fresh poultice daily of linseed meal with more bathing effected a perfect cure, the sheep eventually walking quite well without limping.

A wet spring and summer frequently causes both sheep and lambs to suffer from liver fluke. No disease to which sheep are liable is more difficult to overcome. Out of fifty lambs purchased at a July fair in a wet season we lost fifteen despite all our care. We have also had heavy losses of sheep by it. During the earlier stages of the disease the animals fatten quickly and the mutton is excellent. When sheep are attacked by it the only way to avoid loss is to force them on by high feeding, so that they may be killed and sold while the meat is wholesome. Lameness of the right fore leg is the first unmistakable symptom. If the sheep is then caught and pressed upon the right side it shrinks with pain. As the disease advances the eye becomes suffused with yellow; the skin also becomes yellow, the wool parts easily from it, and then death usually follows quickly. The remedy, or rather the best method of treatment, is to put the flock upon a dry upland pasture; to give dry food consisting of chopped hay mixed with crushed oats, bran, and a little cake, with a plentiful mixture of salt. Rock salt is also kept constantly among the sheep. A tonic consisting of a drachm of powdered gentian root with half a drachm of powdered ginger may also be given frequently with advantage.

As the damp weather and cold nights of autumn come on sheep are much troubled with what is known as hooze, catarrh, or influenza—really a bad cough and cold. Who has not heard the wheezing cough so common to sheep at that time of year? There is an undoubted per-centage of deterioration if not of actual loss from this cause in every flock, and when sheep are folded upon Turnips or grass it is unavoidable, but for flocks on an open pasture much might be done by the provision of open

lodges with a hard dry floor for them to lie upon at night. They require no driving to it after they have once been there, for they have so decided a preference for a dry bed that they will always leave the grass for it at dusk. The feeding of sheep on the home farm ought certainly not to be done on the high-pressure system of the tenant farmer, who begins feeding with cake as soon as the lambs can eat it, and has them fat and ready for the butcher at any time from eight to twelve months old, and it is even claimed that Hampshire Down lambs may be made to weigh 80 lbs. when six months old. For the table of the connoisseur we are bound to have mutton of a certain age to have colour and flavour, and as a general rule only delicate or sickly sheep have corn or cake, the others being almost entirely grass-fed.

## WORK ON THE HOME FARM.

*Horse and Hand Labour.*—So favourable has been the weather that cutting, carrying, and even thrashing of corn has gone briskly on. This statement has undoubtedly to be qualified in some measure as regards the cutting in districts where there is much lodged corn, for in many fields it is so much beaten down that the reaping machine could not be used, and a sharp outlook had to be kept upon the hand labour employed to cut it, or quite half the straw would be left upon the stubble. In such cases the work is tedious and expensive, the corn by being exposed to the more direct influence of the sun ripening so fast that as many men as possible have to be employed in the cutting. Much corn is of course being cut by reaping machines, and considerable interest has been excited by the recent trials of various reaping and binding machines near Shrewsbury under the auspices of the Royal Agricultural Society. Whatever the final decision may be, the general results achieved up to the time of writing this note are extraordinary, four machines having each finished an acre of Oats in 33, 41, 41½, and 41½ minutes respectively. Fine dry samples of new Wheat weighing 64 lbs. per bushel are in the market at the exceedingly low quotation of 36s. per quarter. The probable yield of Wheat throughout the kingdom is estimated at about thirty bushels per acre. Full advantage should be taken of a continuance of fine weather for clearing foul land as the corn is cleared off it. This matter is most important, a day's labour well applied now being equivalent to a week in spring; the land is dry and light, and rubbish is easily disposed of by burning. First of all clear off all stubble that is valuable for litter by harrowing, then with the horse hoe, scarifier, or grubber loosen the soil sufficiently to work out couch grass and other troublesome weeds. In stiff land the plough may also be required, as well as men with steel digging forks and hoes. White Turnips, Mustard, and Trifolium incarnatum should be sown as soon as the stubbles are clear. Do not plough for Trifolium, but simply clear off the stubble; sow the seed broadcast, 24 lbs. per acre, or 20 lbs. Trifolium and a peck of Italian Rye Grass.

*Live Stock.*—Foals should now be weaned, or there will be an undue strain upon the mares. Beasts forward in condition should now be pushed on, and drafting for the butcher be continued as fast as possible; for after the next six weeks the nights will be growing cold, stock will be run into yards at night, and all should be done before then that is possible to reduce the number of animals to reasonable limits, our arrangements in this direction being governed by the size of the yards and number of lodges at our disposal for winter. If ewes have not been put to the ram for January lambs no time should be lost in doing this, the period of gestation being twenty-two weeks.

## METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain
	Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1884. August.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday ..... 10	30.027	65.2	62.6	N.E.	66.5	82.6	60.4	114.2	56.5	0.017
Monday ..... 11	29.952	78.3	66.9	E.	66.2	92.0	61.5	125.4	56.1	0.013
Tuesday ..... 12	29.940	73.6	67.3	S.E.	67.8	82.4	63.8	123.8	58.6	—
Wednesday ..... 13	30.024	68.7	63.8	S.W.	67.8	79.3	59.6	121.4	54.5	0.010
Thursday ..... 14	30.002	67.4	58.9	N.E.	67.4	74.7	57.6	119.5	54.7	—
Friday ..... 15	30.164	64.7	58.0	N.E.	66.5	77.6	53.2	115.3	48.4	—
Saturday ..... 16	30.166	65.7	59.2	N.E.	66.4	79.7	53.1	112.9	47.7	—
	30.039	63.1	62.4		66.9	81.2	58.5	118.9	53.8	0.040

## REMARKS.

10th.—Rain from 8 A.M. to 10 A.M., followed by a lovely day.

11 h.—Fine, bright, and intensely hot; thunder and lightning in evening and night, and some rain at night.

12 h.—Dull early; sprinkle of rain about 10 A.M.; pleasant day; much cooler.

13 h.—Dull early; pleasant day, with some cloud shower in evening.

14th.—Bright, cool, and pleasant.

15th.—Fine and bright.

16th.—Hot and fine, almost cloudless.

Another week of glorious summer weather. The temperature of Friday the 8th, on which we remarked last week, was exceeded by that of Monday the 11th, when 92° was recorded. Temperature of the week nearly 8° above the average, and 1 in more than 3° above that of the preceding week. During the sixteen days of the present month only 0.083 inch of rain has fallen.—G. J. SYMONS.





## COMING EVENTS

28	TH	Aberdare Show.
29	F	
30	S	
31	SUN	12TH SUNDAY AFTER TRINITY.
1	M	
2	TU	Stratford-on-Avon Show.
3	W	Glasgow, Brighton, and Bath Shows

### THE SEASON AND ITS DIFFICULTIES—SOWING AND PLANTING IN DRY WEATHER.

**F**EW if any operations in the routine of gardening are more agreeable, provided the soil and weather are favourable for the successful prosecution of the work, than sowing and planting. The labour, if labour it can be called, of carrying out these primary duties is pleasant rather than irksome, amounting merely to healthy exercise. The work, under the conditions indicated, is always accompanied by a feeling of hope which lightens labour, and of bright anticipations; the rewards already seen in the distance—thrifty crops coming in just at the desired time, and thus enabling the cultivator to rejoice in the fulfilment of his cherished aspirations of providing all that is needed without a blank in the supply. For those reasons, and under favourable circumstances, the days glide pleasantly away, because there is no feeling that time has been fruitlessly spent, and the gardener rests in the consciousness that having sown and planted he has only to wait for the harvest—the gathering of the crops at the allotted time.

Very different are his feelings in a season like the present. Instead of sowing and planting in confidence—if he sows and plants at all—the work is done with feelings of doubt and anxiety lest all his labour shall be in vain. He looks forward for a time of disappointment when seasonable produce is absent, and at the same time a feeling haunts him that the difficulties of the present will not be remembered by those who expect, but cannot have, the usual bountiful supply of the usual vegetables at the usual time.

Salads fail, as they must fail at some time or other after a season like this, and surprise is expressed at the occurrence by those who know nothing of the obstacles, at once powerful and unpreventible, that have caused the collapse. Hard and stringy Turnips no one can be surprised at now, for the cause and the evil are concurrent and cannot be overlooked. It is when months elapse between the effect and the cause that difficulties arise and misunderstandings become rife; when the customary daily supply of Parsley fails and Spinach cannot be had for the asking; when young Cabbages have to be waited for tediously, if not impatiently; when Cauliflowers lag behind, and the Onion store, lightened by the maggot and the drought, is exhausted before the bulbs form in the autumn-sown crops—these are the contingencies that depress the gardener now, and not the less because the untoward circumstances of the present may be forgotten when the pinch comes, as come it will and must, for the sufficient reason that what cannot be sown at the proper time and under ordinarily favourable conditions cannot be reaped in due season.

It is well to place on record the extraordinary difficulties and practically immovable impediments of the period. When the soil is like a hot and dry ash-heap on the one hand, and baked like bricks on the other, as it is at the pre-

sent moment in many districts, it is simply impossible that crops can be raised and the supply of produce maintained throughout winter and spring. When the time of failure or of scarcity comes let not the cause be forgotten. A gardener is no more open to reproach under these circumstances than a farmer is for the loss of his crops during a constantly wet harvest.

If rain comes soon, however, and copiously—as it is earnestly hoped it will come before these notes are printed—there will yet be time for some important crops to be sown with a fair prospect that the much-feared blank in the vegetable supply will not be serious; but if the droughts and heat continue special means must be adopted with the object of raising plants so as to reduce the after inconvenience to the smallest possible dimensions.

There are numbers of men comparatively young in charge of gardens who have never experienced a tropical season like the present. They may remember hot and dry summers, but other persons had to bear the responsibility of whatever inconvenience followed; but now for the first time hundreds of persons are face to face with the ponderous difficulty of exhausted crops and lifeless land—lifeless because incapable of imparting life to the seed that is placed in it on account of the total absence of moisture near the surface. Older men have had to encounter similar difficulties before, and their experience of the past may possibly be of some slight service in the present period of drought.

Gardeners have waited and watched and hoped for the rain to enable them to sow the seed of some staple crops, until they cannot safely wait any longer. Rain or no rain, plants of Cabbages, Cauliflowers, and Onions must be raised, while Parsley and Spinach must be had by hook or by crook. It is of no use drawing drills an inch deep in the ordinary manner, and sowing as in ordinary seasons, and trusting to after watering to bring up the plants. Watering must be done before sowing, and shading resorted to afterwards if success is to be won. Drills must be made of four times the usual depth, and flooded repeatedly until the water passes down right into the subsoil; it is easy to level in the drills until they are of the proper depth, water again, then sow, cover the seed and shade the surface with whatever material is the most convenient, whether mats or Pea haulm. This for Spinach that cannot be transplanted. For Onions, Cabbages, Lettuces, and Cauliflowers, specially prepared beds will be better worth making than for a lot of *Calceolaria* cuttings. A saturated base is of the first importance, and a mass of leaf soil—the best of all moisture-holding mediums—may then, with shade, be trusted to bring forth healthy plants quickly that will transplant well when the rain comes. A few square feet of ground thus prepared has been found invaluable in seasons like the present, and if such important crops are not worth this trifling preparation—trifling at least it is considered for Stocks and Asters—nothing is, for the vegetables named are of infinitely greater moment than any ordinary flowers.

In maintaining the Onion supply do not, if the summer crops are light and spring bulbs are wanted at the earliest possible moment, rely on the Giant Rocas or any other giants. These are fine, but late in comparison with the Queen or even the ordinary Silver-skinned pickling Onion, which, if sown in the autumn and grown in good soil, attains to far more than pickling proportions. Do not forget this is the advice of an old man who has been left in the lurch by relying on the giants, but have Onions when they are wanted, with larger ones to follow if desired. And let him, at the risk of being voted old-fashioned, advise all who can do so to get a few bulbs of the old Potato Onion and plant them, at least some of them, in October, the remainder in February, a foot apart, like Potatoes, just beneath the surface, and Onions, good Onions, will be had sooner than by any other means. This is written in view of an Onion difficulty next spring in consequence of the lightness of the crops,



where there are any, that are now being stored. As evidence that Potato Onions exist I send herewith a sample to the Editor.

A Parsley difficulty is in store for not a few. "It has gone off like steam," is a familiar observation in reference to this indispensable herb; but when rain comes the Parsley will come again, some of it, and just enable the gardener to pull through the winter. But then comes the tug of war—waiting for the crisped leaves of spring-sown seed. A long dreary waiting this often is. Avoid it by sowing now, in boxes if necessary, and treating as Cauliflowers—namely, pricking off, protecting slightly, and transplanting early in spring. It is worth more than all the trouble, as he who adopts the practice will admit when he has plenty of Parsley while his neighbours have none; but he will have one drawback unless he is isolated—plenty of beggars.—AN OLD GARDENER.

[The Potato Onions are very fine, 2½ inches in diameter, and quite solid; we are glad to have them for planting.]

### ROSE NOTES.

LIKE "H., Notts," I have been longing to send a few notes, but haytime, fruit-gathering, &c., have kept me more than busily employed. "Man never is, but always to be blest," is as true of gardeners as of other people. When everything is bleak and bare in winter we long for the time when Roses and other plants shall make our beds and borders gay; and when summer comes with the constantly recurring round of lawn-mowing, edge-clipping, weed-destroying, &c., we more than half long for the more leisurely days of autumn and winter. But, with all its drawbacks, gardening is in my opinion the best, as it is the oldest occupation, and perhaps the pleasantest part of gardening is Rose-growing. Without pretending to settle the question whether Roses do best on their own or on foster roots, I may say with us that worked Roses have had the best of it this year; their blooms have been more numerous, larger, and far better in quality. La France on the Briar has maintained its reputation as one of the very best light Roses; on its own roots the growths have been weak and the blooms few and poor. As a useful light Rose Comtesse de Serenye can be highly recommended; a dozen plants budded two years ago on the Manetti have been laden with blooms for some weeks past. Cheslunt Hybrid on the Manetti has been our best dark Rose this year, yielding abundance of fine blooms. Pierre Notting has been better this year than at any other time during the seven years that I have grown it.

Souvenir de la Malmaison has, I think, never been better than this year, blooming freely and opening well; with ladies this Rose is a great favourite. Coquette des Blanchés, growing on an east wall and allowed to ramble unchecked amongst the branches of Jasminum nudiflorum, has been most beautiful, flowering at every joint at a time when white Roses were scarce; this variety would doubtless prove very effective pegged down or trained pyramid shape, as Mr. Luckhurst trains Madame Plantier. Alphaide de Rotalier is a variety not much grown, but on the Manetti has given us some of our most substantial and best formed blooms. I have grown it upon its own roots about four years, but grown thus it was never satisfactory. Annie Laxton is another variety that has well repaid us for the extra trouble of budding, growth and bloom alike being more satisfactory. Anna Alexieff, Dupuy Jamain, Duke of Edinburgh, Baronne de Rothschild, Comtesse de Chabillant, and a few other useful garden varieties have been best with us this year as standards. A circular bed planted with these varieties and filled in with herbaceous and other hardy plants has been attractive throughout the season, something being always in flower. After all that has been said and written in favour of Roses from cuttings, the fact remains that all varieties cannot be satisfactorily grown in this way. Some sorts do so well that it is simply a waste of time to grow stocks to work them upon, and others which strike freely enough dwindle away and die after a year or two—at least, that is my experience. Last autumn I put in about a hundred cuttings of our strongest varieties, and have between seventy and eighty plants from them; some of the best are nearly 2 feet high, and some not more than a third of that height. Last year my stocks were weak, and the result was the worst "take" of buds that I have had since I begun this mode of propagation. This year they are strong, and, judging by present appearances, "misses" will be very rare.—T. A. B.

### NON-PRUNED APPLE TREES.

"NON-BELIEVER" has (page 165) made a characteristic attack on my notes. His style of writing never receives much respect from me.

I would recommend him to read on page 160 the notes of "An Old Scribe." "Non-Believer" states that I have settled in a few months what can hardly be done in as many years, and refers to Dr. Lindley. He then waits an explanation from me. Mark his signature. Then he admits his doctor disproving himself as well as others. Certainly if your correspondent is not under a doctor he should be, as I thought on a former occasion.

I have nothing more to explain at present, as the fruit and twigs I have exhibited at the Ulverston and Kendal Shows, and remarks on them can be seen in the *Kendal Gazette*, 16th August, also the *Ulverston Advertiser*, 14th August, 1884. This I will say now, that Apples and Pears do bear fruit on the previous year's shoots, not by accident, but because the twigs get well ripened in the autumn. Scores of grafts I kept for friends last spring blossomed well sticking in the ground, and they were all last summer's shoots.

I am not inclined to torture your readers with any more replies to "Non-Believer's" curious letters.—J. E. WAITING, *Grange-over-Sands*.

"NON-BELIEVER" is rather hard on Mr. Waiting, as it is quite a common occurrence for non-pruned Apples to bear fruit at the tips of the shoots. We have a large quarter of standards which were moved last year and not cut back in consequence of the dry spring, and they are bearing heavily on last year's wood. Stirling Castle, Ecklinville, New Hawthornden, Lord Suffield, and many other free bearers invariably do so, and Irish Peach always bears most fruit on the points of the shoots. *Appropos* of pruning, why do not gardeners attend more to the roots of fruit trees and keep top and root better balanced? Trees would then need comparatively little cutting.—GEO. BUNYARD, *Maidstone*.

### CURIOUS JUDGING.

I SHOULD like the thoughts of "Thinker" or some other of your staff on the following case:—I was an exhibitor at our show last week, and amongst other things staged a bouquet of annuals in the second class (open to amateurs and market gardeners only), and on looking round after the Judges had made their awards I found I had been "thrown out" of the race because I had trimmed with Fern, it not being an annual, and a prize awarded to one trimmed with Celery tops, the Judges, I suppose, classing *Apium graveolens* amongst the annuals. But that was not all. On looking round the show I saw that one of our "big guns" in the first class had actually won with a bouquet of annuals trimmed with Maidenhair Fern, so that what made him win makes me lose.—SECOND CLASS.

### THE RAMPIONS.

THOUGH, perhaps, not the showiest of the Campanulaceæ, the *Phyteumas* are very pretty, and also extremely peculiar in the formation of their flower heads. They are easily distinguished from Campanulas by the wheel-like form of the flowers, which are being borne in heads, and from *Jasione* by their having a trifold instead of a club-shaped stigma. Most of the species may be found in cultivation principally in botanic gardens or of hardy-plant enthusiasts, although they are deserving of more general culture both as rockery and mixed border plants. Most of the taller-growing sorts, such as *P. campanuloides*, *P. orbiculare*, *P. spicatum*, *P. Micheli*, and others may be grown with ease in the ordinary border, although a higher degree of success will be obtained by the free use of rich light loam, to which has been added a little peat. Others, such as *P. hemisphaericum*, *P. pauciflorum*, *P. humile*, and *P. comosum*, are best adapted for rockeries and pots, where they will flourish and flower with remarkable freedom. The three most generally found in gardens are *P. Scheuchzeri*, *P. orbiculare*, and *P. Micheli*, and much confusion exists owing to their varying under cultivation; but even with the variation a little attention will serve to distinguish them, as they seldom, even under the most adverse circumstances, lose all their native characters. The following are a few of the best:—

*P. Scheuchzeri*.—From its variable nature this may be used either for the border or rockery with equal advantage. It grows from 6 to 12 inches high, with broad lanceolate leaves tapering to a sharp point, roundish flower heads, and may easily be distinguished from the next two by the long narrow bracts at the base of the flower heads. The flowers are blue, opening in May, June, and July.

*P. Micheli*.—This is much prettier than the above, and very useful for the rockery. The flower heads are more oval, as they appear elongating into cylindrical shape, the individual flowers being handsome bright blue. It seldom reaches more than from 6 to 8 inches in height. The lower leaves are narrow, almost entire; the bracts short, roundish, and covered with a slight pubescence, which distinguishes it from the next. It flowers in July and August, and is a native of Mount Cenis.

*P. orbiculare*.—One of our rare British plants, although found yet in several parts of Surrey and other places in south of England growing on the chalk. The blue flowers are produced in a round head. The leaves are crenated; the radical ones heart-shaped, on long footstalks, dark green, shiny. About a foot in height. It flowers in July and August.

*P. spicatum*.—Of this Parkinson speaks as "growing wild in divers places of this land." It is one of the best of this section. It grows about 2 feet in height, with few stem leaves, and terminating in a long spike of yellowish-white flowers from 4 to 6 inches in height. The lower leaves are ovate-cordate, with semi-double serratures; the upper narrow and finely toothed. This species does well in the ordinary border,



and, as it flowers earlier than the others, proves useful when few others are in flower.

*P. campanuloides*.—A very handsome plant for mixed borders. It grows from 2 to 3 feet in height, with simple erect stems, terminated with a long compound raceme of wheel-shaped dark blue flowers, two or three together on short stalks. The leaves are oval, crenated, and densely hairy on the under side. It flowers July and August, and is a native of the Caucasus.

*P. comosum*.—The most handsome of all the *Phyteumas*, as it is also the rarest. Perfectly hardy out of doors, it never flowers with the same freedom as it does when well grown in pots, although there may be an increase in the size of the plant. In the formation of the corolla this species is very curious. The divisions, as will be seen in the accompanying figure (fig. 34), are free only in the inflated part at the bottom, the upper part being in the form of a tube with an entire mouth. It is a native of the Alps of Austria at elevations of 4000 to 5000 feet, and is generally found on dry rocky places. From ten to thirty flowers are borne in a sessile terminating bunch. They are about an inch long, curved, and from pale lilac to dark purple in colour. The lower or radical leaves are round or heart-shaped, bluntly crenated; the upper nearly sessile, half embracing the stem. The plant varies greatly from different localities, ranging from 3 inches to a foot in height. It should



Fig. 34.—*Phyteuma comosum*.

be grown in a compost of light loam and small stones, and if planted in rockery, a fissure as dry as possible facing south should be chosen. It flowers in June and July.

*P. hemisphaericum*, *humile*, and *pauciflorum* are all very dwarf species and well fitted for nooks on the rockery.—N. S.

#### LORD SUFFIELD APPLE.

THE past few months varied with occasional showers have just suited this fine culinary Apple, and everywhere it has filled out and produced very clean handsome fruits. An East Kent grower has a plantation on rising ground which has this year borne about 3200 bushels of fruit, some of which measured 1 foot in circumference—not a bad crop, as the fruit is making about 8s. per bushel if fine. There is no doubt that this Apple requires dry warm soil, and is not suitable for heavy and low-lying land. After the severe frosts of 1880 and 1881 many trees perished and cankered. The wood, being soft and sappy, was penetrated by the frost; the foliage is also subject to mildew. Sulphur applied with a flour-duster is a good remedy. There is no doubt that summer-pruning to let in sun and air is a great advantage, and planters will do well to plant Lord Suffield only in favourable situations. In Kent many thousands have been killed by over-manuring, the autumn rains stimulating a fresh growth, which is too green and unripe when the winter arrives.—G. B., Maidstone.

#### BUTTON-HOLE BOUQUETS AND COAT FLOWERS.

ON page 167 of last week's Journal "A Young Scotch Gardener" desires particulars concerning the arrangement of flowers in button-hole

bouquets, and to aid him we extract the following chapter from Annie Hassard's useful little work on "Floral Decorations" (published by Macmillan). The subject is an important one, and one upon which there exists much divergence of opinion, therefore other correspondents may submit their experience and ideas with advantage. As a general rule there is a growing favour for simple combinations of few flowers, and the most successful exhibitors adopt this system, carefully avoiding violent contrasts of colour.

"There are some who seem to think that there is no difference between a button-hole bouquet and a coat flower; yet there is, and a very great difference too, the flower being, as the word signifies, a single bloom, whereas a bouquet means a number of flowers arranged according to taste. Many opinions have been expressed as to the proper arrangement of cut flowers, but, with few exceptions, button-hole bouquets have been excluded, probably, because being small, people have imagined that they must necessarily be easily made. No combination of flowers, however, requires to be put together with more taste, or with a lighter hand, than a properly made button-hole bouquet. Flowers selected for this purpose should always be good, particularly those for mounting singly, which should, in fact, be specimens of whatever kind is chosen. Ferns I always like to see in such bouquets, and also mingled with coat flowers, provided these are stove or greenhouse kinds; but hardy flowers I like best mounted with their own foliage alone. Nearly all flowers for bouquets of any sort should be wired; indeed many could not be used for that purpose at all were they not mounted on wire, as for example, the pips of white Hyacinths, which in winter are amongst the most useful flowers that we have. There are, however, other ways of mounting flowers besides wiring them. Let us take, for example, a Gardenia. The centre petals of this flower—indeed, all except the outside row—are very even and lovely; but their beauty is somewhat marred by the outer ones, which look twisted. Now, to remedy this evil, and to make them look all even, proceed as follows:—Take a common Laurel leaf, and cut a piece out of it, about an inch or so square, with a pair of scissors; trim round the corners of this piece, so as to make it almost circular; then cut a cross in the middle, and down through that push the stem of the Gardenia, until the flower and the Laurel leaf are pressed tightly together; then hold it upside down, and through the stem, close to the leaf, pass a 'stub' wire (which will keep the leaf in its place); bend the ends down and fasten them together with a little binding wire, so as to form a stem. The petals of the flower can be then arranged so as to occupy their proper places, and, the piece of Laurel leaf being pressed tightly to the flower, they will remain wherever they are placed.

"There is also another point to which I would wish to direct attention, and that is the foundation of the button-hole bouquet, which is generally a piece of Maidenhair Fern; but that is not stiff enough in itself to form a good support for the other flowers. To remedy this, the best plan is to back the Fern with a small Camellia leaf, wired, which will keep the whole bouquet firm and in shape. The following arrangement is that generally adopted:—At the back is a spray of Fern; next, some long light flower, so as to form a kind of point or finish at the top; then a Camellia bud or Rose, or some such flower, and then Maidenhair Fern and whatever other small flowers are at hand. A bouquet, to look well, may consist of a white Camellia bud, some sprays of Lily of the Valley, blue Squills, &c., and Maidenhair Fern. I once made one of a half-open white Camellia bud, a spray of *Hoteia* (*Spiraea*) *japonica*, and a few pips of white Hyacinth, mixed with a little Maidenhair Fern, and many remarked that it was very light and elegant. That which took the first prize at the Royal Horticultural Society's Show at Birmingham in 1872 was composed of a yellow Rose bud associated with blue Forget-me-not, a pip of *Kalosanthes coccinea*, and one of white *Bouvardia*. I have seen one made of Lily of the Valley, a blush-coloured Rose bud, and the same shade of Hyacinth pips, with a little Fern worked through it; this was a neat-looking little bouquet. Another consisted of a spray of Lily of the Valley, a yellow Rose bud, and a few pips of a rich purple *Cineraria*, which came out well against the deep colour of the *Maréchal Niel* bud. I could give descriptions of many others, but think that those which I have mentioned will suffice to show the best shape and style in which such bouquets should be made.

"Ferns used for button-hole, or indeed for any kind of bouquets, should be cut off plants that have been grown in a cool house, or that have, at all events, been well hardened off; otherwise, though they may look bright and fresh when cut, they shrivel up in a few hours, when, of course, their beauty is gone. In the case of Maidenhair it is a good plan to cut off the very young points, as, with the exception of these, the other parts of the frond keep well. Another point that should be remembered is always to keep the stems of the bouquets as thin as possible, in order that they may easily pass through the coat and correctly fit the little glass water-tubes which are now so much worn, and which keep both Ferns and flowers fresh so much longer than they otherwise would be. After the bouquets are made many place their stems in water to keep them fresh. This I do not think a good plan, as, though the stems may be in the water, the Ferns are exposed to the air, and, thus circumstanced, they will not keep nearly so long fresh as if they were shut up in some air-tight box or drawer. Dealers in bouquets have numbers of drawers lined with zinc in which they keep their flowers, mounted or otherwise; those who have shops must have such appliances as these, but it is not to be expected that amateurs will be furnished with them. If I want to keep a coat flower from one day to another, I place it in a common tin box with a tight-fitting lid, such as wafer biscuits are sold in, over the bottom of which is laid some wet moss of the kind one gets in bundles at the flower shops, or finds in woods or on banks. I place



the back of the bouquet next the moss, and cover the stem over with some more wet moss; I then sprinkle the flowers and Ferns well with water, and then shut down the lid, which is as air-tight as possible, and, treated thus, flowers and Ferns will keep fresh for days. If I want to send a bouquet by post I put moss enough in the box to raise the bouquet, when laid on it, nearly level with the lid when shut down; and across the face of the flowers I lay a piece of cotton wool, which keeps them from rubbing against the lid.

"Coat flowers I like associated with fronds of Maidenhair Fern, that is if the flower is an indoor one. What, for instance, looks so elegant with a Gardenia as a bit of *Adiantum cuneatum*, the bright green spray of which sets off white blossoms of all kinds to much advantage? The coat flower to which was awarded the second prize at the Birmingham Show before mentioned, consisted of a small spray of red *Combretum* backed with a frond of Maidenhair. There are numbers of flowers suitable for such an arrangement as this; but care should be taken that such as are selected are good specimens of their respective kinds, and be a little shrouded in the Fern, as many coat flowers I have seen were quite spoiled by having only one spray of Fern, against which was laid the flower—the latter, under such circumstances looking hard and stiff. Now had there been another small piece to fill up the space at the base, and a tiny bit drawn across the flower, the effect would have been much enhanced. This should always be done if the flower is of a bright or glaring colour. I always like to see a Rose with a leaf belonging to itself behind it, and a few sprays of the young brown-coloured growth around it. Such an arrangement may seem easy to manage, but this is not the case, as the Rose leaf must be wired, and that is one of the most difficult of all things to do properly. Take a Rose leaf and lay it face downwards on a table. It will then represent a stem with two or three small leaflets on each side and one at the top. Down the centre of each of these small leaves or leaflets is a comparatively thick midrib, with slighter ones branching off from it. Take a piece of fine wire and pass it through the leaf (always selecting the top leaflet first) under one of these slight ribs, and bring it up on the opposite side of the ribs. Subject two or three of the ribs to this operation, always keeping close to the centre rib; in fact work as if you were sewing through the leaf, having the long stitches, if I may so call them, on the wrong side, and it will take great care and practice to keep them from being seen on the right side. The wire should be cut off at the top, so as not to let it appear above the point of the leaf. The other part should be drawn down the long stem, and given a twist here and there; but take care to keep the wire from being visible. The little side leaves should be treated in the same manner, the only difference being that the wire is cut off at each end, and not brought down the long stem like the top one. To do all this well takes some little time and trouble; but a Rose leaf if not mounted as just described, is liable to get out of shape, and to hang down; if wired, however, it keeps stiff and can be bent back and arranged according to fancy, just as one would adjust an artificial leaf.

"It has lately become the fashion for ladies to wear small bouquets in the front of their dresses or jackets. These are similar in every way to those just described, except that they are at least a full size larger; the directions, therefore, given for mounting ordinary button-hole bouquets will suffice for those worn by ladies."

### THOUGHTS ON CURRENT TOPICS.

I AM in arrears with my thinking, and shall be again. Sometimes I have something else to think about besides "current topics" in the Journal, and there will always be a risk of some of them ceasing to be "current" by the time my thoughts on them are stereotyped in its pages.

AN article on page 135, August 14th, on "spoiling trees and shrubs," set me a-thinking. I happen to have had something to do with planting trees and shrubs, and hardly dare venture to indicate how many scores of thousands have passed through my hands; but I can see thriving plantations of timber trees now that I placed in position many years ago, and I have the satisfaction of knowing that the acres of land occupied by them have not been "wasted," and just because the trees have been systematically thinned.

WHILE thinking over the article of "A Northern Gardener," a paper came to hand in which it was stated that in 1820 two hills of an area of about 800 acres, of almost no agricultural value, on the property of Lord Cawdor, in Scotland, were planted with Fir and other trees, and, after successive thinnings, the sale of which realised large sums, the remainder of the wood was sold off for the sum of £16,000. The sums realised for the wood on this waste land during the fifty years are stated to be equal per acre to the return from the best arable land in the country.

THAT coincides exactly with my experience, though it does not date back anything like so far as 1820, yet long enough to have shown by actual sales that carefully planted and well-ma aged plantations, regularly thinning out the Larch nurses, have been fully as profitable to the owner as has the well-farmed

arable land surrounding the woods. That is a fact that I sometimes like to think about, and others with wasted woodlands might perhaps do worse than think about it too.

It is the same with shrubs, so far as the wasting of the land is concerned, for they are not planted with a view to profit. They either are, or ought to be, planted with the object of improving in character yearly, and imparting beauty to the grounds they were intended to adorn. When they fail in this the ground they occupy is to all intents and purposes wasted. Mistakes in planting and after management of trees and shrubs have been going on year after year. The evil grows slowly, almost stealthily, and often becomes of serious magnitude before it is fully recognised.

I WILL conclude for the present with one more thought on this subject—namely, the conviction that there is at the present moment a greater number of spoiled and spoiling trees and shrubs in British woods and gardens than could have been seen at any time during the past half-century. So much for the boasted "advance" that has been made in arboriculture and the management of shrubberies and pleasure grounds. There has been too much toying with carpet bedding and such like fripperies, while the permanent occupants of parks and gardens are, in instances innumerable, a reproach to all concerned.

I THOUGHT when I read the article above noticed that I had never been so completely "taken in." I am obliged in this instance to class myself among the other clever men who pride themselves on their power of piercing the veil and settling to their satisfaction the identity of every individual under whatever signature he writes. "Didn't I tell you," said one of the knowing ones some time ago at a flower show, "that now poor Honeyman is gone we shall hear no more from 'Northern Gardener?'" yet just when I had about acquiesced in the melancholy decision, the lost man springs to the front at a bound. Why cannot we have more of the outpourings of his matured mind? It is, however, something to know he is with us yet; we only want to hear from him oftener. For instance, he might tell us how fruit trees, Vines, and other things are spoiled. I think that is not half a bad thought. Will he "bite?"

ANOTHER thought that is uppermost in my mind is of more recent birth. The parent of it is the reports of the trials at Chiswick as published on page 176 last week. The thought is this: Here is a great Society, with a great experimental garden at Chiswick, supported by "Fellows" all over the country, and this bald and puzzling "report" is thought good enough for distribution. It is not good enough for me.

WE read from time to time of the "good work" done in the Society's Gardens, and of the "valuable experiments" conducted there. No doubt all that is true. But where are the records? and of what benefit is the "work" if it is only known to the few persons who can look in and see it for themselves?

I HAVE asked my "governor," who is a "Fellow," if he receives any special reports, and am answered in the negative. I have asked him to write to the Council on the subject, but I do not think he will be at the trouble of doing so; he says I had better "write to the Journal." Well I am writing in a manner and over a signature that will perhaps surprise him, and *he*, at least, will get to know who "Thinker" is; but that is of no consequence.

WHAT I think is of consequence, and I know others think the same, is that full particulars of the Chiswick trials should be made known in some form or other to the horticultural world. If it were not for an occasional "Visitor" publishing what he sees, we in the country should know nothing. Are there no records of trials kept? If not, I think the work of the Society is not completed. If there are such records, where are they? Are they, as an "Old Scribe" said last week, "put into a drawer?" and if so, of what use are they there? I think I hear a chorus of rejoinders—"What, indeed!"

BUT to the report itself. We have certificates awarded to plants and Potatoes, but no descriptions of the varieties honoured. That perhaps is not a matter of great moment; but we have got from certificates to "marks" without a word of explanation. This system of "marks" is, I think, a new notion, but we might have been told what the marks mean. Putting a "black mark" against a man or an article is not usually considered a recommendation, and two black marks are worse than



one, and three than two; but the "marks" applied to objects at Chiswick can hardly have that significance, and it is perhaps more likely that the brewers' method of estimating merit is adopted, X X X meaning strong, X X medium, and X small beer. Be that as it may, I cannot help thinking that the report itself is a very small-beerish one, and there I leave it, hoping for a better next time.

I MUST now think a week back again on the very practical subject of close cropping in kitchen gardens, as referred to on page 136, for the purpose of recommending it to the attentive study of young gardeners. This, I think, is a matter on which they are not so strong as they ought to be. They must think, not only when the different crops should be put in, but must have a clear idea when they will be off again, as they may be doing what a smart young man did not long ago—plant Brussels Sprouts, Kales, and late Broccolis between the early Potatoes and Peas on a south border, and then have no sheltered place for the choice early crops when the time comes round again for sowing and planting. It is observable that Mr. Iggulden makes no such mistake; possibly he bought his experience as I bought mine on this subject many years back, when such useful teachings were less common than now in the press. I have another thought on close cropping—quadruple cropping it may be termed, or taking four crops off the same plot in one season, but it will "keep."

THERE has been a trio of useful notes on a very useful crop—winter Onions—and my thought on the instructions given is this. "B." on page 138 told best how to grow large bulbs, only he plants too thickly; Mr. Muir, page 144, gave the most useful selection of varieties; and the "man of letters," "Y. B. A. Z." suggests the best methods of preventing the attack of the maggot and destroying the fungus that attacks the leaves and often ruins the crops. By taking the points out of these three articles a person must be dull indeed if he cannot grow the crop in question.

MR. WAITING is "in for it again," I thought when I read his note on the results of non-pruning on page 138. Your correspondent's argument is not easy to follow. "Early autumn and summer, as well as winter pruning, is the chief cause of disease," he says; yet he appears to have pruned "about the 21st of July." Is not this summer pruning? Dogmatism on this subject is rarely indulged in by persons who have had many years of experience, because they find that the results of a given practice are not the same every year. The condition of the trees and the characteristics of the season are important factors that must never be overlooked in the pruning of fruit trees.

THEN the quick production of fruit blossom I thought would not be passed silently. Nor has it. "A Non-Believer" justifies his name. The growths that Apple trees produce this year do not bear fruit next, as a rule; but there are exceptions, and it is the same with Pears. These exceptions are perhaps more numerous than your correspondent imagines. As to Dr. Lindley, we may leave him out of the question on a matter of fact; and it is very much a fact that I have gathered both Apples and Pears from growths of the previous season. They were exceptions, nevertheless; and the "close pruning" of standard Apple trees every year, or pruning them to even a fourth part of the summer growth, would not, I think, result in bountiful harvests of fruit; on the contrary, when the head of a standard Apple tree is formed, and a sufficient number of branches provided, I am inclined to think that the less pruning is indulged in the better will be the crop; but at the same time, I think that to leave a tree unpruned from the first—from the time it leaves the nursery—is one of the greatest mistakes that can be made. Mr. Waiting's one year's experience is not sufficient to establish a theory, and "Non-Believer" must not ignore facts, even with Dr. Lindley to help him.

THERE are several other articles in the last two numbers of the Journal worth thinking about, but I cannot dwell on all. Some, in fact, are above me; that on writing for the press, for instance. I thought I was hit rather hard for my jerky unsystematic thoughts. It is all very well to think consecutively, arrange ideas in "natural progression," and all that sort of thing. I did not start young enough to make myself such a perfect thinking machine, and must go on in my own way or not at all. If my style is rugged it will better display the easy flow of the experienced writer's polished sentences. Still if I am too old to change my habits, the advice given should not be lost on younger minds.

MR. INGLIS has put me right on the Lothian Stock question, and I am much obliged to him. I can see what he said can be done; it is just a question of means and conveniences. As sometimes gardeners are expected to produce things with no suitable provision to enable them to fulfil expectations, I think I did not do very wrong in asking for further particulars on the matter and obtaining them.

"A. J. B." differs from me in my estimate of the relative merits of the Troveren Frontignan and Muscat of Alexandria Grapes. I have no objection, especially as he differs so pleasantly on this matter. I think gardeners generally are not bad judges, and they plant at least a hundred canes of the latter to one of the former; and if the Frontignan is as good as the Muscat it is a wonder they have been so long in finding it out. "A. J. B." is to be congratulated in growing a little-grown and not generally prized Grape so well.

THERE appears to have been a little play as well as work in preparing the last two numbers of the Journal. "D., Deal," and his friends have had an "outing," and some "spirited" individuals a "day in the country." No doubt the "dinner" at Leatherhead (what a name!) was a good one, and I thought I should have been "at home" there; but the Dropmore wine! May I say that I thought not a drop more was needed, at least by the chronicler who wrote so jauntily and so merrily? He carried me with him in "spirit" to what I hope some day to see in the flesh—Mr. Octogenarian Frost and his celebrated Conifers.

It is estimated, according to a note on page 142, that the Jersey Potato crop will weigh 45,000 tons and realise £300,000. That will be nearer £7 than £6 per ton, including the "little 'uns." When I read that "note," I thought I should like to be a Jersey Potato grower, but there is no such luck for—A THINKER.

#### RIGHT AND WRONG—"SOFT SAWDER."

AS I often see useful hints to young gardeners in your columns, may I be allowed to offer a serviceable bit of advice to them?

If you take a situation under a master—employer, I mean (I was nearly using quite an old-fashioned word)—who takes an interest in the garden, do not speak, to him at least, of "my" garden, "my" Strawberries, "the way I manage 'my' Peaches," &c. Because, first, it is apt occasionally to produce "friction" if the master—employer should happen to have had anything to ruffle his temper just before; and the whole machine will work far more harmoniously, as you have doubtless learned if friction be avoided as much as possible.

Secondly, Because it will not do you any good, or make your importance any greater in his eyes, as it might do in those of your fellows.

And, thirdly, Because, if you come to really think it over, it is his garden, not yours. Even Mr. Parnell or Mr. Arch would tell you so; and we are told, you know, by an old proverb to give even a very bad character, whom nobody owns as an employer, his due.

However much you may have of your own way in the garden, depend upon it it will please the gentleman who does himself the honour to pay you your wage—salary to hear it spoken of as his garden. And you will find a little "soft sawder" of that description go a long way towards making your situation agreeable.—A. F. M.

#### THE INTERNATIONAL EXHIBITION AND BOTANICAL CONGRESS AT ST. PETERSBURG, 1884.

THE following report of the above Exhibition has been sent to the Secretary of the Science and Art Department by Mr. H. J. Elwes, F.L.S.:—

I have the honour to report to you for the information of your Department that, in accordance with your request in March last, I proceeded to St. Petersburg on May 17th to attend the International Horticultural Exhibition and Botanical Congress. I was extremely well received, in common with the official representatives of the other Great Powers, by the Russian authorities, General Greig in particular, the President of the Imperial Horticultural Society, doing all in his power to make our stay in St. Petersburg both agreeable and instructive. I regret to say that Great Britain was absolutely unrepresented at the Exhibition, which was noticed by the Czar when he opened it, but I can only attribute this to the difficulty and expense of transporting living plants so far; the restrictions imposed by the Phylloxera Convention; and the commercial failure which I believe attended the English exhibitors at the last similar exhibition. Considering the great difficulties under which horticulture labours in Russia the Exhibition was remarkably good, but I observed nothing calling for particular notice on my part, or likely to affect English horticulture. The Botanical Congress was well attended by some of the most distinguished scientific men in Europe, and held seven meetings, at which many subjects of economical and scientific interest were discussed. Nothing, however, took place to make a detailed report from me necessary, as most of the papers read were rather of local or technical than of international interest. With regard to the cultivation of Tea in the Trans-Caucasian pro-



vinces, a discussion took place which made it evident that great efforts are being made by the Russians, which meet with strong support from their Government, to establish this industry on such a scale as to enable them to compete with our important and necessary trade in Indian Tea with Central Asia. It appears to me that this is a subject worthy of the attention of the Indian Government; for, though I was prevented by a severe illness from carrying out my intention of visiting the districts in question this year, yet I have little doubt that the climate and soil in parts of these provinces is thoroughly suitable for Tea-growing; and though my experience of this industry in the Himalaya leads me to doubt whether a business requiring so much attention to detail will ever be carried on very successfully in Russia, yet it is obvious that any competition in this trade might seriously injure, if not destroy, the business of Tea-planting in the north-west Himalaya, which depends so much on the native demand beyond our frontiers.

A very general feeling was expressed by many of the best known and most distinguished foreign botanists and horticulturists, which I think should be brought under the notice of the Science and Art Department, that an International Exhibition and Congress of a similar nature should be held in London; and considering that England, which is decidedly the first nation in the world both in botany and horticulture, has hitherto been one of the most backward in international enterprises in these branches of science, I am not surprised at the expression of this feeling. The phylloxera restrictions, which have been so harassing to both private and commercial horticultural interests in this country, would probably be somewhat relaxed if advantage were taken of such a meeting to prove their general inconvenience and inefficacy. The Royal Horticultural Society, which has been until lately unable to take a lead in this direction on account of their difficulties with the Commissioners about their lease of the South Kensington Gardens, would, I feel sure, be ready to devote the entire energy of their Council and staff towards the promotion of an International and Horticultural Exhibition, if anything like the same consideration and assistance were given them by the Government as have been given to the promoters of the Fisheries and Health Exhibitions.

## READING SHOW.

AUGUST 21ST.

DURING the last two or three seasons visitors to the Reading shows have observed with much dissatisfaction indications of a diminution in the number of competitors and the quality of the exhibits, which augured ill for a continuance of the more than local fame the Show has enjoyed for so many years. It was, therefore, doubly pleasing on Thursday last to find the Society resuming its old position with an extensive and admirable Show, in which the prizes were keenly competed for, the quality of the exhibits highly satisfactory, and the general display all that could be desired. Some did not hesitate to denominate it the finest Exhibition the Society has produced; but though scarcely deserving so high a distinction, it was undoubtedly worthy of a place amongst the best, and there is no doubt that with energetic and judicious management this Society will be raised to a still more important position. Reading is the centre of a fine horticultural district abounding in well-kept establishments, and by the encouragement of wholesome rivalry amongst the gardeners many advantages would accrue both to employers and employed.

The usual interesting and picturesque site was chosen—namely, the Abbey Ruins in the Forbury Gardens, one large marquee being devoted to the plants, flowers, and fruits, an additional one containing most of the vegetables, which were largely and capitally represented. The Forbury Gardens, it may be added, we have never seen in such admirable condition, the beds being most tastefully and effectively planted, the general neat appearance reflecting the greatest credit on Mr. Phippen's careful management.

### PLANTS.

Though there was an absence of the large specimens which have occasionally figured conspicuously at this Show, their place was well occupied with healthy, well grown, smaller examples. It appears that at many provincial exhibitions there is an increasing preference for plants of medium size instead of the giants, which carry off the honours wherever they are staged. The fact is, that these large specimens, handsome as they may be, have a considerable check upon competitors. It becomes known that Mr. So-and-So has entered, and the local growers hold back because they know their chance of a victory is very small. If a society can afford to devote a class to the large specimens and keep up their local classes as well it is another matter, but very often the desire to secure distinguished exhibitors from a distance is carried too far, and shows deteriorate in consequence.

The principal class at Reading is for nine stove and greenhouse plants, and in this Mr. Mould, Pewsey, secured the first place with well-grown specimens, of which the most noteworthy was the white *Ixora Colei*, about 4 feet in diameter, and bearing a large number of trusses; it is seldom indeed that this variety is seen in such fine condition. *Erica Austiniana* of similar size was flowering freely, but *Erica insignis* was finer, fully 5 feet in diameter, and excellently flowered. *Allamanda nobilis* and *A. Hendersoni* were in good condition. *Clerodendron Balfourianum* and *Ixora Prince of Orange* were equally good, the latter having very large brilliant trusses of flowers. A globular-trained plant of *Gloriosa superba* profusely flowered was notable, the weakest specimen of all being *Dipladenia Brearleyana*. Mr. W. Hall, gardener to C. N. May, Esq., Devizes, won second honours with moderate-size healthy plants of *Statice profusa* well flowered, *Ixora Dixiana*, *I. floribunda*, *Dipladenia Brearleyana*, *D. amabilis*, *Allamanda Hendersoni*, *A. nobilis*, and *Bougainvillea glabra*. Mr. Wills, gardener to Mrs. Pearce, Basset, Southampton, was third, his most noticeable plants being *Statice Holfordi* and *profusa*, with *Phænocoma prolifera* Barnesi, a neat, well-trained, healthy example. The local class for four plants was not quite so well filled, but two creditable collections were entered. The first place was accorded to Mr. Lees, gardener to Mrs. Marsland, The Wilderness, Reading, whose

specimens were *Ixora Williamsi*, *Cassia corymbosa*, *Bougainvillea glabra*, and *Rondeletia speciosa*—all even, neat, and pretty plants. Mr. Mortimer, gardener to Major Storer, Purley Park, Reading, followed, having *Bougainvillea glabra* and *Tabernaemontana fl.-pl.* in very good condition. Mr. Bridge, gardener to J. F. Hall, Esq., Erleigh, secured the first prize for the best single specimen with an extremely good *Lilium speciosum* bearing three or four dozen large flowers.

Two classes were devoted to *Liliums*, one for three and the other for six plants, and these produced a very pleasing effect. With six Mr. Bridge won first honours, followed by Mr. Mortimer, the former having varieties of *Lilium speciosum* large and well flowered, Mr. Mortimer also having some plants of *Lilium tigrinum splendens*, a large-flowered and highly coloured variety. With three plants the positions of the same exhibitors were reversed, Mr. Mortimer having a handsome example of a fine variety of *L. auratum*, and Mr. Bridge two good specimens of *L. speciosum rubrum cruentum*, a richly coloured variety, and album, the pure white form which is always so much admired. Mr. Mortimer had the best six *Achimenes*, compact profusely flowered plants of *Frau Brunner*, *Ambroise Verschaffelt*, *coccinea*, *longiflora major*, and *violacea*. Several good collections of *Fuchsias* were shown, Mr. Wills and Mr. Hall taking the lead with plants 5 to 6 feet high, well clothed with foliage and flowers. Smaller plants were staged by Mr. Bright, gardener to P. Karslake, Esq., White Knights, Reading; Mr. Jones, Henley-on-Thames; and Mr. Brooker, gardener to R. Tomkins, Esq., Reading, who secured the remaining prizes. Mr. Mortimer had a good collection of six bedding *Pelargoniums*, being awarded the first prize for sturdy plants of *Peacock*, Mrs. W. Paul, Wonderful, Premier, Colonel Holden, and Gelert, all profusely flowered. Mr. Lockie and Mr. Mortimer were the prizetakers for six *Cockscombs*, dwarf plants with handsomely developed "combs" of a rich crimson tint.

Groups are generally numerous and good at Reading, but they were unusually numerous on this occasion, no less than seven being entered, all very close in merit, and causing the Judges some difficulty in determining their positions. Mr. G. Phippen, Reading, was accorded first honours for an extremely graceful combination of fine-foliage and flowering plants in due proportions. The foliage plants were chiefly *Palms* and *Ferns*, tall and graceful, rising 2 or 3 feet above the bed of the group, which was formed of small *Adiantums*, *Colcuses*, and *Gesnera zebrina*. The flowering plants were principally *Lilium speciosum* and *L. tigrinum*, the margin consisting of golden and green *Selaginellas* alternately. Mr. Lees was placed second with an extremely pretty group, which was so nearly equal to the first that many persons thought they ought to have received equal awards. There was a good background of *Fuchsias*, with tall *Coccoses* and *Dracaenas* scattered through the group, the foundation of which consisted of *Adiantums* informally arranged with *Tuberous Begonias*; the corner plants of *Pandanus Veitchii*, the surface of the soil being covered with *Panicum variegatum*, which drooped round the pots very elegantly; the margin of *Fittonias* and *Cyrtodeiras* was novel and pretty. Mr. Sumner, gardener to J. H. Millard, Esq., Reading, was third with a light and bright group, in which *Pelargoniums*, *Lobelias*, *Celosias*, and tall *Ferns* predominated, with an edge of *Tradescantias*, *Ferns*, and *Panicum*. Additional second and third prizes were also awarded to Mr. Wills and Mr. Woolford, gardener to A. Palmer, Esq., Reading, both having pretty and bright arrangements; and extra prizes were secured by Mr. Balchin, gardener to B. Simonds, Esq., Reading, and Mr. Pound, gardener to G. May, Esq., Caversham, who contributed praiseworthy groups.

Foliage plants were not so abundant as they have been at some previous shows, but those entered were fresh and good. Mr. Mortimer won first honours with six *Ferns*, having remarkably vigorous examples of *Davallia Mooreana*, 7 feet in diameter, a magnificent plant; *Adiantum cardiochlaena*, *Alsophila australis*, *Dicksonia antarctica*, *Adiantum cultratum*, and *Davallia vallata*, all equally fresh and well grown. Mr. Wills took the second place with slightly smaller and less regular plants, but *Microlepia hirta cristata*, *Davallia Mooreana*, and *Davallia polyantha* were notable. Mr. Lees had the best four foliage plants, and was awarded the first prize for *Platynerium alaicorne*, *Alocasia Thibautiana*, *Croton Queen Victoria*, and *Dracaena Shepherdii*, small but good plants. With six foliage plants Mr. Wills succeeded in obtaining the first place with beautiful specimens of *Cycas revoluta*, *Alocasia metallica*, *Croton Queen Victoria*, *Alocasia Lowi*, *Latania borbonica*, and *Dasyllirion acrotrichum*, healthy free-grown plants. Mr. Mortimer followed, his most telling specimen being *Croton Weismanni*, 6 feet high and 5 feet in diameter, of conical shape, and of the richest golden tint. This was indeed one of the best specimen foliage plants we have seen this season. *Alocasia Thibautiana*, *Pandanus Veitchii*, *Yucca aloifolia variegata*, *Alocasia macrorrhiza variegata*, and *Croton majesticus* were also good. Equal third prizes were adjudged to Messrs. Hall and Mould, the best plants from the former being *Croton Weismanni* and *Phormium tenax*; from the latter *Gleichenia rupestris* and *Cycas revoluta*. Messrs. Wills and Mortimer were the prizetakers in that order for six *Selaginellas*, both showing neat specimens. *Coleus* were fairly represented by several growers, Mr. Mortimer leading with healthy well-coloured plants. For one specimen new or rare plant Mr. Ross, gardener to C. Eyre, Esq., Welford Park, was first for *Croton Eyresi* with long narrow gold and green leaves, Mr. Mould following with *Croton Thomsoni* with broad leaves, having a gold centre and green margin.

Table plants were well shown by three exhibitors, Mr. Ross winning the premier position with *Yucca aloifolia variegata*, *Dracaena Ernesti*, a red-leaved seedling, *Asparagus plumosus nanus*, *Pandanus Veitchii*, and *Croton elegans*. The soil in the pots was neatly surfaced with *Selaginella*, which imparted a finish and neatness to the plants. Mr. Phippen was second with neat plants similar to those with which he was first at the Maidenhead Show. Mr. Wills took the third place with graceful little plants, but the moss employed for surfacing the soil was not so fresh and bright-looking as it should have been.

### CUT FLOWERS.

The classes for these were well filled, and the majority of the exhibits were of considerable merit. *Dahlias* were wonderfully good, especially those in the class for eighteen blooms, in which Mr. Tranter, Upper Assenden, gained the first prize with beautiful blooms of *Vice-President*, *Burgundy*, *Modesty*, *Prince of Denmark*, *Flag of Truce*, *Senator*, Mrs. Gladstone, a surprisingly fine bloom, even, and handsome, the finest flower staged; Mrs.



Rawlings, Joseph Green, Revival, and Goldfinder. Messrs. J. Cheal & Sons, Crawley, were second with a good stand of blooms representing some fine varieties. Mr. Tranter was also first with twelve Fancy varieties, the majority of which were as fine as the others, and Messrs. J. Cheal & Sons were again second with a good stand. Hardy flowers were capitally shown by seven exhibitors, the prizes going to Messrs. Summers, Bridge, Durman, and Booker. For such a late period of the year Roses were shown in good numbers and fair condition. Messrs. J. Cheal & Sons were the most successful in the class for eighteen blooms, taking the first prize with bright, even, and fresh examples. Mr. Gurden, gardener to Miss Watson Taylor, Headington, and Mr. Bridge were respectively second and third with smaller blooms. Mr. Gurden also had the best twelve and the best six blooms, followed in the latter class by J. T. Strange, Esq., Aldermaston, and Mr. Tranter. With single Dahlias Messrs. Cheal & Sons were first, showing a good stand of bright varieties, for one of which, named *Formosa*, with well-formed dark scarlet blooms, a first-class certificate was awarded. Asters were numerous, and in several other small classes the competition was good. Mr. Phippen had the best collection of stove and greenhouse flowers, and in the bouquet and buttonhole classes he was the principal prizetaker as usual with tasteful arrangements.

#### FRUIT.

In point of numbers this section was well represented, but the majority of the Grapes shown were not quite satisfactory in colour. For eight dishes of fruits Mr. Goodman, gardener to C. Hammersley, Esq., Bourne End, gained the first place, showing Foster's Seedling and Black Alicante Grapes of medium quality, Spencer Nectarines very fine, Brown Turkey Figs, Belgian Purple Plums, and Williams' Bon Chrétien Pears. Mr. Wells, gardener to R. Ravenhill, Esq., Winkfield, was second with fine examples of Morello Cherries, Victoria Plums, Fernbill's Scarlet Melon, and Cooper's Black Grapes. Mr. Home, gardener to Sir R. Sutton, Bart., Beaham Park, Newbury, took the third place with good Cherries and fine Bananas, Mr. Cakebread being equal third, showing good Peaches. In the class for six dishes Mr. Ashby, gardener to W. Fanning, Esq., Whitechurch, took the lead for neat well-finished examples of Victoria Nectarines, White Ischia Figs, Black Hamburg and Muscat of Alexandria Grapes, and Sutton's Masterpiece Melon. Mr. Turton followed, his principal dishes being Madresfield Court Grapes and Early Louise Peaches. Mr. Booker was third, having Victoria Nectarines very handsome.

In the Grape classes Black Hamburg was the best represented, Mr. Ashby leading with three fine bunches, large in berry and of good colour. Mr. Osborne, gardener to the Rev. H. Golding Palmer, followed with smaller bunches but large handsome berries. Equal third prizes were secured by Mr. Moore, gardener to Mrs. Haig, and Mr. Home with samples of medium merit. For three bunches of any other black variety Mr. Ashby was first with Madresfield Court, large in bunch and berry, but not well coloured to the footstalk. Mr. Lockie was second with Alnwick Seedling, large berries of fair colour. For three bunches of Muscat Grapes Mr. Ross was first with Bowood Muscat, having fine heads and berries of a clear good colour, and quite distinct from Muscat of Alexandria as shown by Mr. Ashby who was second with finely coloured bunches. In the any other white variety class Mr. Lockie took the lead with Buckland Sweetwater, extremely large bunches and berries, altogether handsome in size, but were not so well coloured as the smaller bunches of the same variety from Mr. Wells, for which the second prize was awarded. The first, however, well deserved their position, for they were beautifully grown samples. Mr. Ashby was third with Golden Queen of good size, but dull and dirty-looking.

Nectarines were shown by eight competitors, all close. Mr. Goodman being first with fine fruits of Milton; Mr. Osborn took the second prize for Pitmaston Orange of creditable size and colour; Mr. Ashby following with Victoria. Six dishes of Peaches were entered, Mr. Mortimer leading with Royal George, large and handsome. Mr. Ashby was second with the same variety not quite so well coloured, and Mr. Osborn was third with Noblesse. Apricots were represented by six lots, all good fruits. Mr. Read secured the premier position with Moorpark, followed by Mr. Wells with Frogmore Yellow, and by Mr. Scammell with Moorpark. With Figs Messrs. Ashby and Horne were the prizetakers; and in the Plum class, in which there were nine entries, Mr. Goodman was first with Belle de Louvain, very handsome; Mr. Osborn second with Washington, and Mr. Jones third with Jefferson's. Melons were shown in good numbers, Mr. Lockie leading in the scarlet-flesh class with Invincible Scarlet, and Mr. Ross in the green-fleshed class with Carters' Emerald; other prizetakers being Messrs. Scammell, Cakebread, and Horne. Messrs. Sutton & Sons also offered three prizes for the best brace of Melons of any variety, and the competition was exceedingly keen, no less than twelve entering the class. Mr. Mortimer gained first honours for Hero of Lockinge, with deep flesh and of fine flavour, Mr. Turton following with Hero of Bath, and Mr. Lockie with a seedling. Messrs. Carter & Co., Holborn, also offered three prizes for a brace of Blenheim Orange Melon, which were secured by Messrs. Lockie, Mortimer, and Clarke, Moorpark, Farnham, with good fruits. A class was provided for miscellaneous fruits, in which Mr. Ross was first with two magnificent Smooth Cayenne Pine Apples, large, even, and handsomely ripened. Mr. Goodman was second with some good Peaches, Grapes, and Plums, and Mr. Read third with fine samples. Outdoor fruits, especially Apples, were well represented, Messrs. Turton, Horne, Hart, and Clarke taking the chief prizes.

Tomatoes were staged in good numbers and capital condition, the majority of the fourteen dishes containing large, even, and finely coloured fruits. Mr. Lockie won first honours with Sutton's Perfection, very beautiful samples; Mr. Cakebread was second with Hackwood Prolific, handsome, solid, even fruits; and Mr. Thorne, gardener to G. Pigot, Esq., Sunninghill, was third with Dedham Favourite, neat in form, but dull in colour. Of eleven braces of Cucumbers those of Royal Windsor from Mr. Lockie were selected for premier honours, beautiful even fruits bearing good bloom. Mr. Mortimer followed with Purley Park Hero; and Mr. Lees was third with Berkshire Challenge. Messrs. Carter & Co. also offered prizes for a brace of their Model Cucumber, for which there were four entries, Messrs. Lockie, Mortimer, and Elliott gaining the prizes in that order.

#### VEGETABLES.

The great feature in the vegetable classes were the Potatoes in competition for the special prizes, nearly 200 dishes being staged of remarkably

handsome tubers, probably the finest display of Potatoes ever seen at a Reading Show. Messrs. Sutton & Sons offered four prizes for collections of nine varieties, nine tubers of each, and for these there were thirteen entries all so close in quality that the Judges had much difficulty in awarding the prizes. Mr. Ilott won first honours with clean even tubers of Vicar of Laleham, Prizetaker, Reading Russet, Fifties Annie, Lifeguard, Adirondack International, Woodstock Kidney, and First and Best. Messrs. Ross, Elliott, and Howe followed closely. Mr. C. Fidler also offered four prizes for nine varieties, twelve tubers of each, and eight competitors appeared. Mr. Ross was first with fine examples of Mr. Bresee, Suttons' Fillbasket, Reading Russet, Fenn's Perfection, Princess of Wales, M.P., Prizetaker, Suttons' First and Best, and Vicar of Laleham. Messrs. Elliott, Ilott, and Lees followed with good collections.

Some excellent collections of vegetables were staged in competition for the four prizes offered by Messrs. Webb & Sons, Stourbridge, ten even and praiseworthy lots of six dishes being entered. Mr. Kneller, gardener to M. Portal, Esq., Malshanger Park, took the lead with admirable specimens of Autumn Giant Cauliflower, Giant Rocca Onions very large and solid, Intermediate Carrots, International Potatoes, Canadian Wonder Beans, and Ne Plus Ultra Peas. Mr. Howe was placed second with a good collection, being closely followed by Mr. Lockie and Mr. Cakebread. In the Society's classes for Onions, Vegetable Marrows, Peas, and Potatoes, the competition was good and the quality of the exhibits satisfactory.

#### MEASURED SUNSHINE.

In the course of an article upon this subject in a daily contemporary the following remarks are of especial interest to gardeners, who know full well the value of sunshine:—

"It is now known, not merely from long experience, which the most ardent admiration for British climatology does not enable us to deny, but from exact scientific data, that in the most favoured parts of this country and during the finest parts of the year just about one-third of the sun's bright rays reach us, and that two-thirds are spent in the atmosphere or reflected from the clouds. There are two ways in which sunshine can be accurately measured. The first is to let the solar rays fall directly upon a thermometer, and after an exposure long enough to produce their full effect, to mark the result. In this way, on Monday, Aug. 11th, said to have been the hottest day for the past twenty years, the heat registered rose to 150° 8'. This was a measure, not of the temperature of the air, but of the degree to which the sun's rays could heat any substance by falling directly and continuously upon it. It was about three-fifths of the temperature required to boil water. With this mode of estimating the sun's power the public have been familiar since the beginning of the seventeenth century, when Galileo invented the air thermometer. Of late years, however, it has been supplemented by a new instrument, invented by Mr. Campbell, and recently much improved by Professor Stokes and others—the Sunshine Recorder, which leaves a permanent record of the time during which the sun has been shining brightly on the place where the instrument is situated. This simple apparatus, shown in the grounds of the Health Exhibition, and explained by Mr. Wedenby to numbers of the visitors, is as easy to understand as the thermometer. It consists simply of a strip of prepared card fixed under and in the focus of a globe of glass about 3 inches in diameter. The globe is placed in the open air, and the moment the sunlight falls upon it its rays are concentrated by the globe, which, acting like a burning glass, incinerates or chars the paper so as to trace a black line, the length of which shows accurately how many hours or parts of an hour there has been bright sunshine. Thus, for instance, on Monday, the 11th inst., there were thirteen hours of sunshine out of above fifteen that were possible, and last Saturday, the 16th inst., the proportion was nearly as great.

"We are indebted to the Sunshine Recorder for some very interesting facts and for illustrations of important truths. That peculiar phenomenon with which every summer familiarises us, "a close day," for which there seems no sufficient reason, is explained by this small instrument. June the 26th, for instance, was the hottest day of the year up to that date, and there were thirteen hours of sunshine in London. The thermometer in the shade, however, only registered 78°, and, moreover, light as was the day, no one complained much of the heat. The succeeding day, June 27th, on the other hand, was very oppressive; the shade temperature rose to 79°, and yet the Recorder showed only two hours of bright sunshine. That the brighter day was the more bearable was because the air itself was cooler, and it was cooler for the reason that there was a clearer sky, and there was more radiation outwards from the earth's surface. On the second date there was enough of mist to prevent the sun burning the paper, and the same filmy screen kept in the heat and made it feel oppressive. For the same reason those climates that are favoured with a clear sky are much more tolerable when the heat is torrid than damp regions like the Gold Coast, with their pall of moisture, which is deadly even when the temperature is not more than 80° or 90°. More than this, the Sunshine Recorder throws a clear light on the vagaries of the British summer. In the month of July, 1881, we had 44·8 per cent. of all the possible sunshine—a very large proportion—the effect being that crops were hastened forward wonderfully. But in August the proportion fell to 29·9; instead of sun there was rain—an invariable alternative, and the ripened crops were gathered in with difficulty and great loss. For July and August last year the figures were 27·4 and 39·7, and for the present year the averages promise to be much more favourable. A proportion of one-third sunshine for the whole year would make a very tolerable climate; and the average in England is strikingly constant; but the cardinal defect clearly shown in these records is that there is so often a fatal lack during the three critical months of the year—June, July, and August, the times when crops are growing, maturing, and being harvested.

"One most striking fact is brought to light by the sunshine records for the year 1883. It appears that out of the whole number of hours—4456—during which the sun was above the horizon it was shining brightly on the city of London (as recorded by an instrument at Bunhill Row) 974 hours, at Greenwich 1241 hours, at Kew 1484, Croydon 1368, Marlborough 1504, while at Hastings the number rose to 1825. Thus the south coast of England had nearly twice as many sunny days as the metropolis, while even its own



suburbs had nearly half as much more. The reason is not far to seek; in fact, it was illustrated yesterday afternoon in the grounds of the Health Exhibition. While the fountains were at work, the Guards' band playing, and the sun shining brightly, a chimney connected with the machinery department was pouring out a dense mass of smoke, producing a strange combination, certainly strangest of all at a Health Exhibition which has for one of its foremost objects "the abatement of the smoke nuisance." That canopy of black unburnt coal it is which deprives London of a third to a half of its bright sunshine. It is because at Kew, Apsley Guise, Marlborough, and Hastings there is less of this canopy that the Sunshine Recorder tells a pleasanter tale of those places."

### AËRIAL ROOTS ON VINES.

MUCH has been said and written at various times on the cause and effect of air roots on Vines. While some maintain that their presence is chiefly or entirely due to the proper roots being confined in a wet, cold, unsuitable border, others as stoutly argue that this has little or no influence in their production, but that excessive atmospheric moisture alone is the chief if not the only cause of their emission from the stems above the ground line. Others hold as firmly to the opinion that not only may both these conditions produce them, but that any check or injury received by underground roots will, if the atmosphere be suitable to the growth of the Vine, cause their almost immediate appearance on the stem. Having a desire to prove which of these theories was the correct one, I some time ago determined to make a few experiments with this object in view, and after continued and oft-repeated careful trials which would scarcely interest your readers, I was compelled to conclude that excessive atmospheric moisture alone, especially in the early stages of growth, is the chief if not the only cause of their existence.

No check nor injury to the roots, no border be it ever so cold, will cause their emission if the atmosphere be in that condition in respect to moisture which is most conducive to the healthy development of the branches and foliage. If, however, a slight increase of moisture be permanently maintained they will under such conditions the more rapidly break forth. When the underground roots are healthy and the border is in a suitable condition, aërial roots will not appear at all if the atmospheric moisture by day is not at any time permitted to exceed 60 to 80 per cent., the former amount to be allowed in bright and the latter in dull weather, while at night it may be allowed to increase to 80 or even 90 per cent. Under these conditions the Vine will grow vigorously, provided undue artificial heat is not resorted to. If, however, the moisture be permanently increased to 80 per cent. by day and 90 per cent. at night, aërial roots will quickly show, irrespective of other conditions.

The use and effect of air roots is undoubtedly to increase the supply of food, while the atmospheric moisture is sufficiently great to permit of their existence; but when that moisture is decreased, as it must necessarily be at the ripening period, they become very inactive, and when very numerous it is not unreasonable to infer that the lesser quantity of food caused by their failure as sources of supply at this critical period, does often cause the fruit to shank and be otherwise defective.—C. W.

### CHOICE ALPINE PLANTS.

**ERIGERON AURANTIACUM.**—A new departure, and a welcome addition to its genus, which, prior to the introduction of this charming plant was made up of species and varieties having either white, blue, or lilac flowers, and which, in some instances, were wanting in merit. The present plant, however, when once seen will recommend itself to all interested in choice plants. It has many claims, for it is perfectly hardy, very dwarf, easily managed, and increased either by seeds or division. Beyond these it is adapted for either the rockery or border, and will, under ordinary conditions, thrive in any moderately rich vegetable soil. Should it be destined for the border, let it occupy a position in the front row, when its rich orange-coloured flowers may be seen to advantage. Considering that it rarely exceeds 8 inches in height, and that its flowers often average 2 inches across, combined with its special merits above named, there should be no reason why it shall not figure among the most prominent of recent introductions. Its habit generally is that of the better known *Aster alpinus*, having oblong, somewhat spathulate, entire leaves, which are formed into a compact tuft. From these the flower stems arise, each bearing one of its handsome blooms. These are freely produced during the summer months, and expand at a time when the colour is rather sparse in the garden, a fact which in itself supplies the want; and seeing that it seeds freely, it should receive every encouragement, and when the plants are fit dot them on the rock or in the border in colonies or groups. These will soon make goodly patches, and when seen *en masse* will constitute one of the most striking of perennial alpinines.

**IRIS IBERICA.**—Comparatively few of us can speak with any degree of firmness as regards the requirements of this plant, and how few are destined to flower it more than once or twice in a lifetime? For its successful culture the baking and drying process has long been prescribed. These, however, I consider quite as ridiculous as stewing or boiling. We all know that moisture is one of the chief conditions under which the majority of species of this genus thrive, and it must not be entirely disregarded. Not unfrequently does this plant become a victim to this strange fashion of "drying off." Who can wonder at this? Consider for a moment that in the tiny rhizome of this plant there is scarcely any enlargement whatever, neither is there any basal appendage which might form a fitting receptacle for sap, therefore to subject it to a periodical drying process means simply destroying that little amount of strength which it has gained since spring. I may also here state that no plant, or at least very few, is benefited by drying, provided that it does not deteriorate in the soil or become a victim to our winters. It is so perfectly hardy that no English winter ever harms it, nor does it deteriorate in our soils; on the contrary, it gains strength annually. The motive I have in view in making special allusion to this strictly spring-flowering plant at this time is that my remarks might tend to check those who believe in annually lifting and storing them away. It is wrong, of this I am convinced from experience.

*Iris iberica* is one of the most remarkable and interesting plants which Nature has bestowed, and might well be recognised as one of the wonders of the vegetable kingdom. It is of dwarf habit, with distinct, glaucous, linear, arched leaves, and produces its solitary gigantic flowers in May and June on slant stems which seldom exceed 9 inches in height. The prevailing colour of the sepals is satiny white, with a few dull red spots about the base; the petals are strangely spotted and veined in such a manner as to almost defy description; indeed it is impossible to form any idea of its remarkable beauty without it, since so curious a combination of colour is rarely seen. The only soil in which I have known it to grow well, so as to almost attain luxuriance, is the rich fibrous yellow loam of Kent and Surrey. It should be planted out to do any good, for I have never seen it cultivated well in pots, and am of opinion that it cannot be grown to perfection in pots. Some years since I had a bed prepared with rich loam as described above, the bed was fairly moist, and was fully exposed to the midday sun. The plants were miserable enough when planted, though as it afterwards proved the right spot had been selected. The second season after planting they had made such headway as to form splendid tufts, each of which produced from two to four of its striking flowers, and during that year we had scores of its flowers. Later on, in 1875, it had so increased that I determined to send a specimen, along with a few others, to South Kensington. On the day of the exhibition it had eleven fully expanded flowers, with two more in the bud state, and was the admiration of many. The bed in which these were planted was not allowed to become dry; and the loam being somewhat holding, though by no means retentive in character, materially assisted in keeping the plants moist. Thus placed it was evergreen, and endured our severest winters with impunity. Thus there is no reason why a hardy alpine such as this should receive such unreasonable and gross treatment. This drying-off process has also been recommended for *Iris Susiana*, but happily we have instances where it has flowered for years undisturbed in cottage gardens, which at once dispels any notions to the contrary. *I. iberica* is a native of the high mountain ranges of Western Asia, and should receive every encouragement. Slugs are a great pest to this species, as also to *I. cristata* and other dwarf members of this genus.

**CYANANTHUS LOBATUS.**—This forms a charming bit of blue for the rock garden during August and September, though it is seldom seen, unless it be in choice collections of alpinines. It has in its favour a variety of claims. It is among the free growers, not rampant or weedy, but in all points holding a good position among choice plants. It is of prostrate habit, the flower stems taking a decumbent direction. These are terminated by flowers nearly an inch across, of purplish blue on the exterior, while the interior of the tube or throat is densely fringed with soft whitish hairs. The small fleshy leaves are of a pleasing green, and are deeply and irregularly lobed. It should be placed in a sunny position on the rockery where it can overhang some projecting ledge and make a good display with its bright blue flowers. It delights in sandy loam, to which add about one-fourth of peat and leaf soil, and some sharp grit. It requires plenty of moisture during the growing season, and therefore should not be placed too high and dry. Cuttings root readily and may be had in abundance during the growing season. It deserves extensive cultivation, and is a good plant to offer in exchange, which will



do much to make it more widely known. It may also be had from seeds, though cuttings make the best plants in a very little time. It comes to me from the Himalayas, where its brilliant Vinca-like flowers make a good display.

**ARNEBIA ECHIOIDES.**—A most interesting and showy Borage-wort (fig. 35) from the Ural Mountains, and one which still remains a rarity. It grows from 9 inches to a foot high, having a somewhat woody stool, from which its annual flower stems are produced. It is, however, quite alpine in character, and retains its foliage. When first expanded its flowers are of a clear yellow. This is succeeded by the appearance of five dark blotches near the throat of the corolla. These gradually disappear, and the flowers assume a pale yellow tint. These sudden and continuous changes have attracted much attention among botanists, since flowers of various shades of yellow with these conspicuous spots may be daily witnessed. The flower stems are erect, as are also the flowers, which are densely set on the stems. The habit is neat and compact, and is adapted for the border among good plants, or the rockery. In either case a airy rich compost is desirable, to which add broken brick rubbish. I am reminded of one of the first plants I ever saw, which was finely in flower in that choice and well-known col-



Fig. 35.—*Arnebia echioides*.

lection which the late Rev. Harper Crewe possessed. Among these was this *Arnebia*, a foot high and as much through. It is only increased by seed, as cuttings seldom root. Seeds, however, are more freely produced than formerly. There is good reason to believe that one day it will form a conspicuous object in the flower garden. It commences flowering in May, and if seed is not required the old stems may be cut away, and another batch of flower stems will soon appear. When these are past repeat the operation, and another batch of flowers may be had far into September.

**TINELLA CORDIFOLIA.**—This elegant little plant seems almost to have vanished. We rarely meet it, and rarer still hear anything respecting it. That so pleasing a plant should be lost sight of is a matter for regret. I grew it ten years ago without the least trouble, and it is well adapted for the border, the rockery, or for pot culture. Its foliage somewhat resembles a small-leaved *Heuchera*, above which its graceful spikes of bloom produce a most pleasing effect. The flowering spike is somewhat pyramidal, well furnished with its starry-white flowers. It is a native of North America, and came into our gardens in 1731, thus making it an old inhabitant. It is, however, now anything but a common plant in gardens, and should be sought after, seeing it is so easily grown and increased. Of such good habit, and so free-flowering, it might be made useful in a variety of ways in the hands of those who are desirous of having effective and interesting changes without verging into formality; indeed the plant cannot be used in any formal arrangement

happily, and will soon itself suggest many positions, either alone or in groups, where it may be advantageously placed. Its leaves are formed into a compact tuft, from which issue its flower stems, which seldom exceed 9 inches in height. *Mitella diphylla* is of a genus nearly allied, though it must not be confounded with it, the plant under notice being in all respects superior.—J. H. E.

### HOT WEATHER AND FRUIT TREES.

SINCE 1859 I do not remember so hot and dry a summer as the present. The winter was dry, so was the spring, and the summer fast drawing to a close has been exceptionally parching. Although the frosts of April made quick destructive work of the blossoms and embryo fruit of hardy trees, particularly Plums, Pears, and Apples, completely destroying Nuts, including Walnuts, I cannot but think that 1884 will prove one of the most favourable prospectively to fruit trees that has occurred for very many years, as the heat and drought cannot but insure the perfection of the growth and the formation of fruit buds.

For a number of years previous the weather had been comparatively cold, dull, and wet. Fruit trees then made much growth and the wood has been very indifferently ripened. Although plenty of fruit buds were formed, the comparatively poor crops resulting pointed to the imperfect development of the blossoms and necessarily indifferent setting of the fruit. Then the scantiness of crop tended to induce vigour in the trees. They made much growth, which was difficult to restrain by summer-pruning, and the heat was not sufficient to solidify and ripen the growth. This had a tendency to induce canker and other forms of disease, which have been more apparent in Apricot trees than perhaps any other, although the stronger-growing fruit trees have shown a tendency to gum and canker in a very marked degree as compared with those that are of only moderately vigorous growth, making firm short-jointed wood, and forming fruit buds on short stubby shoots or spurs.

A dull, wet, and cold season encourages soft growth; it is not solidified, and it is not ripened well in autumn. The trees may form fruit buds, give promise of abundant crops by the profusion of bloom, yet the fruit fails to set, or, if setting, drops off before taking the first swelling. This is a consequence of last year's imperfect development of the buds and immaturity of the wood, and the future is not more hopeful, unless we have favourable weather for the ripening of the wood and development of the blossom buds. Summer-pruning, root-pruning, lifting, wholly or partially, may do something (and does) to check luxuriance, the tendency to make growth, and assist in its ripening; but it is a poor apology for sun heat to ripen the wood and plump the fruit buds. Restriction aids a sturdy and solidified growth by exposing the parts retained to the influence of light and air, whilst extension equally furthers the object in view, provided the growths are trained or disposed so thin as to be exposed fully to atmospheric influences; and this is even better than restriction, as the action between the head and roots is reciprocal, whilst in the case of restriction, unless the roots and the head are restricted alike there will be an excess of vigour—late growths that are never productive of fruit.

There is nothing so salutary in checking the tendency to excess of vigour in fruit trees as a good crop of fruit. The difficulty of late years has been to secure such a condition of growth as is favourable to a golden harvest. Culture is all very well, but unless the elements are propitious the greatest skill is of little avail; indeed, trees left to have their own way are, especially in unfavourable seasons, the most satisfactory in cropping. Compare the growth and resulting crops of trees in orchards with those in the richer soil of gardens, and under the manipulations of the cultivator. It is not difficult to discern between the success of the one and the indifferent issue of the other.

But what I wish more particularly to allude to is the very promising condition of fruit trees at the present time. Disastrous as the drought and heat may have been to many occupants of gardens, it is not without its corresponding benefit on fruit trees, which, despite the paucity of fruit, have not made a very vigorous growth, the growth being short and stubby, and most, if not all, the growths of Apples and Pears are terminated by fruit buds. It seems a pity in the case of trees trained to walls, or as espaliers, to cut away shoots of a few inches growth terminated by fruit buds for the mere keeping in form of the trees. Why not let them fruit, and cut away or shorten back after fruiting, such as is the case with Peaches, &c.? It strikes me that we prune too hard—sacrifice utility for appearances, more particularly in the case of Apples and Pears, which in many instances form the strongest bloom buds on shoots of a few inches length, and which retained afford fine fruit more freely than that



borne on short stunted old spurs. We certainly ought to be more discriminate in the pruning of Apples and Pears; instead of shortening back these short shoots terminated by a fruit bud, leave them entire, and so check the tendency to the production of spray, which their shortening back to a couple of joints or so of their origin aggravates, seeking to preserve the symmetry of the trees by cutting away or back attenuated growths in autumn after the fruit is gathered. This would keep the trees well furnished with healthy young bearing wood, and the balance between roots and branches more equal, than by large reductions of spray in summer and of roots in winter.

Another advantage of the remarkably dry and hot summer to fruit trees must be that the growths of previous years are certain to be well ripened, for in all but the very old stems there is a certain amount of evaporation and elaboration of the juices taking place; hence strong growths will be thoroughly matured, and we may look forward with every confidence that if the elements are favourable we shall have abundant crops another season.—G. ABBEY.



GARDENERS' ROYAL BENEVOLENT INSTITUTION.—As the result of the recent opening of the gardens of The Mount, Bishopstoke, the residence of Captain Hargreaves, in aid of the Gardeners' Royal Benevolent Institution, an addition of £22 15s. has been made to the fund now being raised for the augmentation of the pensions.

— VEITCH MEMORIAL PRIZES AT DUNDEE.—Three prizes, consisting of a bronze medal and £5 in cash, will be awarded at the International Horticultural Exhibition to be held at Dundee on September 11th and two following days, for the best specimen Orchid in flower, for the best stove or greenhouse plant in flower, and for the best two bunches of Grapes, one variety. In each case the selection will be made from the contributions staged by gardeners and amateurs in competition for the ordinary prizes in the classes 12 to 24.

— IMPROVING WASTE LANDS.—The Scottish Seed and Nursery Trades' Association offer ten guineas in prizes of seven and three guineas each, for the best and second best essays on the best and most economical system for the afforestation of waste and otherwise unprofitable lands in the United Kingdom. The essays are to be sent to Mr. D. Hunter, 29, Dundas Street, Edinburgh, by the end of November next.

— SUNSTROKE.—We are glad to learn that Mr. T. W. Sanders, an able contributor to our columns, who had the misfortune to have an attack of sunstroke about a fortnight ago, is progressing towards recovery. It is a matter of surprise that gardeners have passed so well through the very trying ordeal to which they have been subjected during the tropical summer, and it is most gratifying that attacks of sunstroke have not been more numerous amongst them.

— RAINFALL.—Mr. James Shearer writes:—"In the Journal for July 31st a table is given showing the greatest amount of rainfall and most rainy days in two of the months each year for fifteen years. I am anxious to know what part of the country this table applies to, and shall be much obliged by the information."

— MADRESFIELD COURT GRAPE.—This is becoming a great favourite with exhibitors, and some extremely fine bunches are occasionally seen, but in many cases there is a notable want of colour, the lower part of the berries being of quite a reddish hue. Very few seem to be as successful with it as Mr. Roberts of Gunnersbury, who has already this season exhibited several handsome bunches, and when coloured as these were it is unexcelled in appearance.

— A BOUQUET OF ORCHIDS.—The following is a list of the Orchid blooms contained in the bouquet presented to Her Royal Highness the Princess of Wales at the Forestry Exhibition last Friday, by Dr. Paterson of Bridge of Allan:—*Vanda tricolor Patersonii*; *Vanda teres Andersonii*; *Cattleya Leopoldi* variety *guttata*; *Brassia maculata guttata*; *Miltonia*

*spectabilis*; *Odontoglossum Alexandræ*, and *O. Uro-Skinnerii*; *Odontoglossum tripudians*, and *vexillarium*; *Odontoglossum Rossii*, and *Rossii majus*; *Odontoglossum Lindleyanum* and *Pescatorei*; *Disa grandiflora superba*; *Masdevallia Davisii*, *Veitchii*, and *amabilis*; *Masdevallia maculata aurea*, *ochthodes*, and *Lindenii*; *Angræcum eburneum*; *Aerides Reichenbachii*, and *quinquevulnerum*; *Cypripedium barbatum*, *javanicum*, and *Sedenii*; *Cypripedium longifolium*, *Harrisianum*, and *Roezli*; *Dendrobium chrysanthum*; *Stenia fimbriata* (resembling the face of *Mephistopheles*); *Maxillaria grandiflora*, and *venusta*; *Dendrochilum filiforme*; *Epidendrum vitellinum*, and *vitellinum majus*; *Epidendrum prismatocarpum*, and *cinnabarinum*; *Phalænopsis Luddemanniana*; *Saccolabium Blumei majus*, and *gemmaum*; *Oncidium Weltonii*, and *linguæforme*; *Oncidium Harrisonianum*; *Mesospinidium sanguineum*, and *vulcanicum*, and *Nerine Fothergillii major* (a Cape bulb). Around the basket were sprays of Prince Albert's Pine, also flowers of *Lapageria alba* and *rosea*. Her Royal Highness before leaving gave orders that the flowers should be sent to Dalmeny.

— THE second edition of 3000 copies of Wright's "MUSHROOMS FOR THE MILLION" having run rapidly out of print, further orders for the work cannot at present be executed.

— WE are informed that the only English seed firm exhibiting at the Amsterdam Exhibition is Messrs. JAMES CARTER & Co., the Queen's Seedsmen, 237 and 238, High Holborn, London, W.C., who make an interesting exhibit of tuberous-rooted vegetables, comprising all the varieties of Potatoes, new and old, and other forms of tuberous vegetables that are in general commerce.

— KNIPHOFIA (TRITOMA) GRANDIS.—Messrs. Barr & Son send us from their grounds at Tooting some exceedingly fine specimens of this magnificent variety, which they consider the finest in cultivation. There are several varieties of *Kniphofia Uvaria*, differing more or less in habit and colour of the flowers, the nearest approach to the one under notice being that named *nobilis*, which, however, flowers rather earlier. One named *præcox* is the earliest, and *pumila* is a dwarf-growing form, also early. *Kniphofia grandis* is undoubtedly an imposing variety, and attains a height of 5 feet or more at Tooting, where there is now a fine display. The flower-bearing portion of the spike is nearly a foot in length, the lower flowers being of a nice clear yellow, and the upper ones bright orange or scarlet. For flowering at this time of year these plants are most useful, producing a grand effect in suitable positions.

— A PLAGUE OF WASPS.—In some districts around London, but especially in Essex, wasps are most abundant this year, and are proving most destructive to both indoor and outdoor fruits. Near one garden last week no less than seventeen nests were taken. A correspondent, "J. B. R.," writes: "Here in West Essex we are literally besieged with wasps. Not only are they eating the ripe fruit, but have commenced the green Apples and Pears, although all the nests that can be found have been destroyed. I should like to hear how your correspondents are faring in other parts of the country."

— THE TAVISTOCK COTTAGE GARDEN SOCIETY.—The thirty-seventh annual Exhibition of this Society was held on the 14th inst. in the Market Hall, Tavistock. A great quantity of vegetables was shown, and mostly of good quality. Fruits and flowers were also well represented; a number of exhibits from Messrs. Lucombe, Pince & Co., Exeter; Messrs. Curtis, Sanford, & Co., Torquay; Mr. Yole, Tavistock; and Messrs. Dingle & Son, Saltash, which served to make the Show very attractive.

— CLEMATIS FLAMMULA.—In many gardens this plant is now flowering abundantly, and its value as a late summer climber cannot be over-estimated. Upon wire arches over a path it has a particularly fine appearance, and is densely covered with its small graceful white flowers. It is very quick and strong in growth, and if cut hard back to the old wood it makes young shoots freely in the spring, and upon these the clouds of flowers are borne. There are several points which specially recommend it to attention, not the least being its indifference to city smoke; it is also abundant and consequently cheap.—L.

— EAST LOTHIAN STOCKS.—Mr. Gilbert writes from Burghley:—"I have just now in full bloom a long row of these Scottish beauties, which have been most useful for cutting since the first week in May. Their truly delicious perfume, coupled with their diversity of colour, render them everybody's flowers. Now being the time they are sown,



would strongly recommend them to all where flowers for cutting are wanted and where they are not."

— WE are informed that the SILVER CUP offered at Exeter for ten dishes of fruit was won by Mr. Iggulden.

— THE numerous friends of the courteous Curator of the Royal Gardens, Kew, will learn with much regret that his wife died on the 20th inst. after a short illness. It is not many months since Mr. Smith had the misfortune to lose his only daughter, and this second affliction will be doubly felt.

— SALIX ROSMARINIFOLIA.—This tree is recommended as one that will thrive in swampy places and not get too large. In habit it is like a dwarf Oak, very pretty and quaint in appearance, and quite at home in swampy ground where other things would only die. After a few years it grows very slowly, and never breaks the uniformity of its shape by rank growth.

— WE are informed that at the SHREWSBURY SHOW, held on the 20th and 21st inst., and reported in another column, the gate money on the second day of the Show amounted to £968, and that the total receipts in connection with the Show amount to £1730. This is somewhat less than last year's income, but this was anticipated, owing to the show of the Royal Agricultural Society being held in Shrewsbury a few weeks ago, when nearly 100,000 persons visited it. We congratulate the Horticultural Show Committee on their success, and should be glad if many more societies were in such a satisfactory position.

— WE cannot allow the death of the great publisher and author, Mr. HENRY G. BOHN, to pass unnoticed in our columns, for among his varied pursuits and accomplishments Mr. Bohn was an enthusiastic horticulturist. Those who have seen his richly stored garden at Twickenham can bear testimony to his love of Conifers, among which are examples of great beauty, and many of them possess an interest from being the original plants that were imported. Mr. Bohn was one of the oldest Fellows (if not the oldest) of the Royal Horticultural Society. He was for several years a member of its Council both before and after it moved from Chiswick to South Kensington, and he was also for many years a member of its Fruit Committee, having passed into that position when the British Pomological Society was incorporated with that body. His contribution to gardening literature was his editing an enlarged edition of "Gordon's Pinetum." Mr. Bohn died rather suddenly at his residence, North End, Twickenham, on the 22nd inst. at the great age of eighty-eight years.

— GARDENING APPOINTMENTS.—The following appointments have recently been made through Messrs. John Laing & Co., Forest Hill, London:—Mr. F. Deller, late at Pirbright, Chipstead, as head gardener to Jas. H. Lloyd, Esq., Beckenham. Mr. W. P. Leach, late at Kelsey Manor, Beckenham, as head gardener to H. Barry, Esq., Bush Hill House, Winchmore Hill, Middlesex. Mr. Wm. Christison, late at Woodham Hall, Woking, as head gardener to Richard Foster, Esq., Homewood, Chislehurst. Mr. W. Fay as head gardener to — Marshall, Esq., Tunbridge Wells. Mr. G. B. Shop, late at G. Gatehouse, Esq., Chichester, as head gardener to David Wilkinson, Esq., West Hill House, Epsom; and Mr. C. Pawsey as head gardener to Mrs. Zang, Ivyhurst, Wimbledon.

— OLEANDERS.—These useful plants are not so commonly seen in gardens now as might be expected by those who have proved their value. I have two large plants bearing some hundreds of handsome flowers possessing the sweetest fragrance, and they are more valued at this time of year than anything else we have in bloom. The flowers are large, free, and of a bright rosy salmon tint, which is very effective in vases and stands of other flowers if a little care be exercised in the arrangement, avoiding the introduction of any glaring colours or strongly scented flowers. My plants are really large bushes, 6 or 7 feet high, and are growing in small square tubs, the roots being somewhat cramped, evidently proving beneficial in inducing floriferousness. The soil has not been renewed for some years, and no manurial aid is given either as top-dressing or in a liquid form. Small plants in 60 or 48-size pots are also useful for decorative purposes in the conservatory.—R. C. O

— LILIUMS AT EXHIBITIONS.—It is a matter for regret that more encouragement is not given at local shows to growers of Liliiums, as the plants are amongst the most beautiful of all that are grown, and have a very telling effect in an exhibition. This was particularly noticeable at

the Reading Show last week, where two classes are provided for them, and the plants entered being all well flowered, they formed an admirable feature in the display. These were chiefly varieties of *L. speciosum*, the two most noticeable of which were the dark red and pure white forms. The last mentioned is well grown by Mr. Phippen, who states that he received it under the name of *monstrosum*. It is remarkable for the number of flowers borne in a head, and it appears to be one of the *fasciatum* or *corymbiflorum* section, the flowers being large and pure white. Arranged in a group, with a few bright-coloured flowering plants and a due proportion of Ferns, this variety is most useful. All the forms of *L. speciosum* are, however, attractive, and classes might advantageously be provided for them at all late summer shows.

— THE STONE PINE.—As the Oak is a tree typical of English landscape, so is the Stone Pine of that of Italy, varying somewhat in habit, according to locality, but always majestic and strangely impressive to a northern eye, whether in dense forests, as near Florence; in more open masses, as at Ravenna; in picturesque groups, as about Rome; or in occasional single trees, such as may be seen throughout the country but rather more frequently towards the coast. In these isolated trees their imposing character can be best appreciated, the great trunk carrying the massive head perfectly poised—an interesting example of ponderous weight gracefully balanced. The solid weighty appearance of the head of the tree is increased by its even and generally symmetrical outline, this especially in the examples near the coast, the mass of foliage being so close and dense that it looks like velvet, and in colour a warm, rich, golden olive, strangely different from the blue-greens and black-greens of our northern Pines. The character of such isolated trees is perfectly shown in some of Turner's pictures in the national collection—the "Bay of Baïæ" and others of the same series. The Stone Pine bears very large cones whose seeds are edible. When quite ripe they are good and nut-like. Sometimes the Italians roast the barely ripe cone, dashing it on the ground to break it open; but the ripe seeds of the older cone when it naturally opens are better worth eating. The empty cones are in great request for lighting fires. They are full of resinous matter, and burn with a cheerful crackle and a delightful fragrance.—(*Irish Farmers' Gazette*.)

#### THE HALLAMSHIRE FLORAL AND HORTICULTURAL SOCIETY.

THE seventeenth annual Exhibition of this Society, held on the 18th inst., was in every way a great success. In the first place it was generally conceded to be the best Show yet held by the Society as regards the quality and quantity of the exhibits; and secondly the Show was favoured by glorious weather and a large and fashionable company, so that the Committee, and especially the indefatigable Secretary, Mr. Joseph Hancock, are to be congratulated upon the success which has attended their efforts.

There was a good display of stove and greenhouse plants, the principal class for three foliage and three flowering plants bringing four or five competitors; Mr. T. Shelley taking first honours with six fine specimens, consisting of *Crotons variegatus* and *angustifolius*, *Dracæna magnifica*, *Bougainvillea glabra*, *Clerodendron Balfourianum*, and *Begonia coccinea corallina*. For a single specimen stove plant in flower the same exhibitor was first with a good plant of *Dipladenia amabilis*, having about thirty expanded blooms. For a single specimen greenhouse plant in bloom Mr. T. Foggin, gardener to Mrs. G. Wilson, was first with a fine specimen of *Lilium auratum* carrying fifty flowers.

Fruit and vegetables, especially the latter, were plentiful, and everywhere of very high quality. The principal prizetakers in these sections were Mr. D. Abbot, gardener to C. H. Firth, Esq., Mr. T. Foggin, Mr. T. Shelley, and Mr. J. Simmonds. Mr. Abbot showed splendidly finished Vines in pots, carrying heavy crops of good fruit, also first-class fruit of Grapes, black and white; Melons, scarlet and green-fleshed; Peaches, and Nectarines. Conspicuous in nearly all collections of vegetables shown was Mr. Abbot's fine Pea Duke of Albany, which, as an exhibition Pea seems to be unequalled. A new seedling Scarlet Runner Bean by the same raiser also attracted much attention and commendation. I have seen this variety under cultivation in Mr. Firth's garden for several years past, and it appears to be much superior to any variety at present in commerce. I believe it is a seedling from Carters' Champion, but produces even larger and longer pods than does that well-known variety. The pods also have not the roughness of that variety, but are more even and straight, and are altogether better suited for the exhibition table. The plant appears to possess a very robust constitution, and to be remarkably prolific.

Cut blooms were a very good show, and some very fine stands of Roses, Dahlias, Asters, Marigolds, and Gladioli were set up. Mr. Holland, gardener to Duncau Gilmour, Esq., had a stand of thirty-six blooms of Rose La France, which were very fine. These were not for competition. Groups of plants not for competition were also shown by Messrs. Fisher, Son and Sibray; Mr. B. Crossland, Richmond Nurseries; and Mr. Sheridan, gardener to Mrs. Harmar, Ranfall, Ranmoor. The last-named exhibitor was a successful competitor in most of the classes for stove and greenhouse plants and for Ferns. The group of plants from the Handsworth Nurseries contained a number of good Orchids in flower, also Tuberos Begonias very fine, and greenhouse Rhododendrons. In Mr. Crossland's group was a large basket of a very fine variety of Cockcomb, very dwarf, with large combs, and of a



brilliant colour. This exhibitor has long had a reputation for possessing one of the very finest strains of these plants in cultivation.—W. K. W.

### A FEW HINTS ON POMOLOGICAL SCIENCE.

By E. LEWIS STURTEVANT, M.D., Director New York Agricultural Experimental Station, Geneva (in *Transactions of the American Pomological Society*).

THE term Horticulture embraces both the fruit garden and the kitchen garden within its meaning, and although it is difficult to define just exactly what is a fruit and what is a vegetable in the ordinary acceptance of the word, yet the discussions at our Horticultural Society meetings rarely pass the lines from one to the other as established by common custom. The American Pomological Society recognises as fruits the Apple, Apricot, Blackberry, Cherry, Currant, Gooseberry, Grape, Mulberry, Fig, Pomegranate, Nectarine, Orange, Lemon, Peach, Pear, Plum, Quince, Raspberry, and Strawberry. Downing, in his book on fruits (edition of 1866), adds Almonds, Berberries, Melons, Nuts, and Olives to the list, yet we doubt if the classifying of Melons as a "fruit" is generally followed, and Berberries and some Nuts are scarcely yet sufficiently improved to be propagated in many varieties.

Accepting the American Pomological Society's list as including the vegetable species which are pomologically to be classified as fruits, we can at once see a feature common to all which separates them from vegetable fruits, and this is the method of propagation. The entire list, as named, are propagated by grafts, layers, offsets, or divisions, and each variety is the representative of but a single variation. In vegetable fruits we have propagation by seed. This difference is, it will be noted, a fundamental one. Using the popular language, our vegetables are the resultant of a heredity trained through annual selection; our fruits are the resultants of a single selection from variation, or rather the prolongation of a noted variable. The fruit is the continuation of an individual; the vegetable is the reproduction through successive generations.

The practical methods in the fruit garden and the kitchen garden are based on these differences. The seeker after new varieties of vegetables accumulates variations, produced by cross-fertilisation or otherwise, through a process of careful selection or rejection, or both combined, and gains stability with each generation of trial. The fruit-origination secures variation through the planting of numerous seed, oftentimes of cross-fertilised seed, and when perchance a desirable variety is obtained this chance product is retained, and the individual is disseminated.

The effect of these methods of selection are the securing in the one case a trueness to type from seed, in the other case a variability from seed. The tendency in the one case is through repeated selections to accumulate the heredity of successive generations of plants; in the other case but the keeping distinct of an accidental type. "Like produces like," is the axiom of the vegetable grower; "variation produces variation," is the axiom of the fruit-grower; hence the one uses seed to retain his variety, the other uses the scion, sucker, offshoot, or slip.

In view of these differences which exist, continued improvement of our fruits and vegetables are to be sought by different methods of procedure. In the vegetables we can take advantage of the empirical law of inheritance at corresponding ages, and can exercise selection as variability becomes defined at an early or later stage of growth, and can thus hope to change the period at which differentiation begins to show between varieties of the same species; we can seek correlations between parts, and when such are detected we can use this knowledge to govern our attempts to influence changes in the invisible by changes produced in the visible; we can influence changes in the plant through excessive conditions of soil and culture, through position of the seed, &c., and through selection and rogueing of numerous seedlings fix the variations which occur; we can hybridise or cross-fertilise, and by after-selection exercised on the seedlings, gradually reduce to a common type or separate into various divergent and desired types. In the vegetable, in a word, through the rapid succession of generations, we are enabled to conveniently apply in practice the laws of breeding, whereby varieties become assured on the one hand, and the reproduction of varieties from seed become secured on the other.

In our pomological fruits, *per contra*, the succession of generations is so delayed that the patience of the grower is, as a rule, unequal to the task of methodical procedure. The present system of obtaining new varieties of fruits is to cross-fertilise in order to secure variation in seedlings consequent upon a known parentage, and then through the growing of very many plants to select for propagation the occasional one which possesses qualities desirable for use—a process in its nature uncertain, in its results unsatisfactory, its whole theory being based, not upon the definite knowledge of any one series of laws influencing growth, but upon the general law of probability as applied to series of events happening from ill-defined causes.

It seems proper at this stage of horticultural progress to ask ourselves the question whether pomology does not admit of more systematic attempts at improvement than at present exercised; whether the knowledge already possessed of vegetable physiology does not admit of a practical and definite application; whether methods which have been found adequate in the vegetable garden may not be found to possess value for the fruit garden.

Selection through successive seedlings seems scarcely applicable to the most of our fruits, as requiring too long a period for its testing, and as the generations required to secure trueness of reproduction by seed of a variable from a succession of variables is as yet unknown. The most satisfactory way, to our present knowledge, seems to be to meet the problem indirectly, and to seek through the study of correlations to

change the product of the seedling in a definite direction through our own manipulation of factors capable of being observed and selected. There are, doubtless, many correlations which may be utilised, but the most promising one at present offered to our attention is that relation which appears to exist between the quality of a fruit and the abundance of the seed, or the proportion of the seed to flesh.

A most careful summary of what is known regarding seedless fruits and a careful examination into the general relations that exist between the seeding and product of many plants justify a quite strong statement that as plants are relieved from the natural necessity of maintenance of their species, and selection is exercised towards improvement, the seed decreases as tenderness of flesh or pulp is attained, until finally in many cases the seeds become notably diminished in number, or wholly or in part abortive. Otherwise expressed, as in natural selection the seed is an essential motive of the plant existence, the energies of the plant are directed throughout generations of existence towards the improving of its chances either through the multiplication of its seed, the securing of the dispersal of its seed, or through a gain in vitality, resistance, or germinative force. Under domesticated conditions this natural motive becomes weakened, and through man's selection and protection the motive of the plant is to administer to the desires or caprice of man as directed by man's interference, and hence improvement is gauged according as the plant departs from the natural motive to conform to the new motive.

Assuming our reasoning and explanation to be based on a true observation of facts, it becomes of importance to ask ourselves how we can apply to practice. The answer comes of itself:—

Select seed from fruit containing less seed than the average for its kind for use in trials.

Cross-fertilise small or few-seeding varieties of a kind with pollen from varieties of a similar character, and from the produce select the few-seeded specimens for continuous plantings.

Continue this species of selecting according to correlations as far as possible through successive generations of seedlings.

As fruit plants are improved they are changed, through the withdrawal by man from natural conditions to artificial conditions. Their progress and existence are dependent upon a new set of factors, protection having taken the place of the natural necessity of the struggle for existence, the survival of the most fit having given place as a law to the survival of the most useful. Hence the domesticated plant is a different plant from the wild plant, having secured correlative adaptations to a new set of conditions. Accordingly we must note as an observation familiar to all, that domesticated and highly improved varieties quickly suffer from neglect, or, in other words, cannot at once react to the new set of factors which come into action when man's care is withdrawn. We should not say that the Pickerel is less vigorous than the Shad because he dies when removed into salt water, neither should we say that the plant habituated through generations of culture to the conditions of culture is less hardy than the wild plant when transferred to the conditions under which the wild plant succeeds. Vigour must be relative as between equally improved varieties, under conditions for which they have been both fitted, and as improvement carries the plant further from the motives which govern the wild plant, so correlatively must the plant become conformable to the motives of domestication. This reasoning offers explanation of the fact that difficulties in horticulture keep pace with improvement in horticulture, and we must expect as horticulture improves the quality of its produce, so the skill required of a horticulturist will become more pronounced.

These considerations enable us to assert with some degree of positiveness that horticultural progress can be in two directions:—

First, in the way of the greatest improvement in quality of fruits for the purpose of the skilled grower, the amateur, or the specialist.

Second, in the way of securing great vigour of plant with fair or mediocre quality of fruit for the purposes of the careless grower and the commercial grower who supplies the demands of uncritical consumers.

For the one purpose, selection through correlation may avail to secure speedy success; for the other purpose, selection from plant growth-habit may avail. For the best results, however, the union of the two methods, whereby we may hope to secure sufficient quality with sufficient vigour as an immediate result, with allied progression of the two properties in the continuation of efforts founded upon the rigorous application of the art of selection and rejection.

### WATSONIAS.

THE Iris family yields us a large number of handsome plants, and not the least beautiful amongst them are the varied and brilliant Watsonias. Irises, Ixias, Sparaxis, and Gladioluses are familiar inmates of our gardens and houses, but Watsonias do not at present occupy such a prominent position, at least in English gardens. We are familiar with these flowers, because like many other similar plants, large quantities are grown in some of the warmer districts on the Continent, whence flowers are dispatched to our markets in considerable numbers, and are occasionally also seen at London exhibitions. The fact is, that though Watsonias will grow out of doors satisfactorily in warm borders in the south of England, they will not produce pleasing results unless they can be so favoured in position, and probably a few injudicious attempts to establish them in unsuitable places have brought them into bad favour with some cultivators. In a cool house, however, such as a greenhouse, conservatory, or even in a cool frame, where they can be secured from frost, and not exposed to heavy cold rain, which does them the most injury, they will give but little trouble, and yield a profusion of flowers



that are most acceptable for cutting. In warm sheltered borders of well-drained soil they can also be relied upon, and in whatever way they are grown the chief point needing attention is the provision of light sandy soil, with very little manure, and thorough drainage.

A great number of varieties are now cultivated, differing considerably in colour and size of flower. The principal species is *W. Meriana*, and from this many forms have been obtained; the majority, indeed, of the best varieties grown have sprung from this species. *W. coccinea*, of which an illustration is given in fig. 36, is probably one of these

*fulgida*, rich scarlet; *W. rosea-alba*, rose and white; *W. rosea*, bright rose, and *W. alba*, pure white. All are worthy of more extended cultivation, and should be added to every collection where bright and charming flowers are prized.

#### EGYPTIAN GARDENS.

On leaving Alexandria to take the train for Cairo from the old station of Miniet-el-Basal (great market of Alexandria), the road traverses a



Fig. 36.—*WATSONIA COCCINEA*.

varieties, as it closely resembles the type in the form of the flowers—a funnel-shaped and slightly arched corolla; but the colour, a brilliant scarlet, is much more effective than most of the others. It was grandly represented in a group shown by Messrs. J. Veitch & Sons, Chelsea, at Kensington early this season, and was greatly admired by all who saw it. From some of these our figure has been prepared, giving a fair idea of the general character of the flowers. Several other varieties, differing in shades of red and scarlet, are also grown, and some are obtainable under names.

The most beautiful and distinct of the other species are *W. humilis*, which has large rosy-crimson flowers; *W. aletroides*, dark red; *W.*

superb forest of Date Palms, which looks especially well in autumn when these trees are loaded with fruit. The Date Palms are cultivated in forests, and wave their fronds in the air about 60 or 70 feet above the ground, and with their straight stems, 6 to 9 feet in circumference, produce an astonishing effect, especially upon those who see them for the first time when arriving from Europe, where we see but small specimens of these trees in greenhouses.

The station of Miniet-el-Basal (the Onion market) is now only used for merchandise. Another station has recently been constructed nearer the town with the framework of a conservatory the size of that of the Société d'Acclimatation of Paris, and even larger, and which was ordered by the



late Saïd Pasha during his visit to Paris in 1860. This great conservatory, which remained for fifteen years in the warehouses of Alexandria, has at length been utilised, but covered with zinc instead of glass. From Alexandria to Cairo the journey by express train takes four hours and a half. At Kafr-zayat, a station situated half way to Cairo, the train stops for twenty minutes; there is an abundantly provided buffet, and a European *table-d'hôte*. At intervals on the journey the Arab children offer at every station little baskets (made of *Juncus spinosus*) filled with fruits, such as Mandarin and Blood Oranges in winter, Loquats in spring, Bananas and Figs in summer, and enormous Pomegranates in autumn, which the European travellers buy for one or two piastres. For the Arabs and the Fellahs there are Radishes and green Onions in winter, Chick Peas and Fenugreek in spring, Cucumbers and Water Melons in summer, and Dates in autumn.

The chief garden worth visiting at Cairo is the park of Ezbehieh, situated in the centre of the European quarter, and having an area of upwards of 85,000 square yards of an octagonal form, with four gates—north, south, east, and west. This garden was reconstructed in 1871 and embanked 6 feet all round, especially in its circular part. In the centre is a great basin fed with water by a cascade, falling from a reservoir, constructed above a grotto, and hidden by a rustic kiosque. There is a concert of military music given here every afternoon during the promenade hours.

The lawns are formed of *Zapania nodiflora*. The most remarkable of the old trees of this garden were carefully preserved during the alterations, especially fine specimens of *Tamarix arborea*, *Albizia Lebbex*, *Cassia fistula*, &c. All the other plantations date from 1871, and are specimens taken from the old Khédivial nursery of Ghézireh, established by us in 1868, and which was closed in 1879 on the abdication of Khédive Ismail. After the alterations the garden of Ezbekieh was thrown open to the public in 1871-72.—G. DELCHEVALERIE (in *L'Illustration Horticole*).

## WESTON-SUPER-MARE SHOW.

AUGUST 19TH.

THIS, the twelfth annual Exhibition, was generally considered by far the best that has yet been held. Plants, especially the flowering section, were remarkably fine, and Gladioli, Roses, and other cut flowers were shown well and in goodly numbers. All kinds of fruit and vegetables were well represented, the competition in every case being very keen indeed. The arrangements, under the supervision of a hard-working Committee, of which Mr. John Matthews is the respected Chairman, were all that could be desired; but we should have been better pleased if the energetic Secretary, Mr. Frampton, had seen that the names of the prizewinners and their gardeners were legibly written on the prize cards. Owing to the wretched manner in which most of the names were written our report will be an imperfect one, more especially with regard to the correctness of the gardeners' names.

OPEN CLASSES.—Four valuable prizes, ranging from £15 15s. to £3 3s., were offered for twelve stove or greenhouse plants, Orchids excepted, and this attracted five good groups. As at Taunton, Mr. Cypher was again easily beaten by Mr. G. Lock, gardener to B. W. Cleave, Esq., Crediton, who had grandly flowered specimens, upwards of 4 feet in diameter, of *Erica oblata*, *E. Marnockiana*, and *E. æmula*, large perfectly trained and flowered specimens of *Dipladenia amabilis*, *Clerodendron Balfourianum*, *Stephanotis floribunda*, *Ixora Williamsii*, *I. Fraserii*, and large plants of *Croton Disraeli*, *Areca lutescens*, *A. Verschaffeltii*, and *Kentia Fosteriana*. In Mr. Cypher's second-prize lot were good specimens of *Cycas revoluta*, *Croton Johannis*, *C. Prince of Wales*, *Allamanda nobilis*, *A. Hendersonii*, and *Erica æmula*. The third prize was awarded to Mr. W. J. Mould, Pewsey, for a good group, and C. Bloodworth, Esq., Kingswood, was a creditable fourth. With six specimens Mr. Lock was again first, his best plants being *Dipladenia hybrida*, *Ixora Prince of Orange*, *Eucharis amazonica*, and *Erica Fairriana*. Mr. Cypher followed, his group including a good specimen of *Hæmanthus magnificus*, and the third prize was awarded to Mr. Mould. Several good lots of six fine-foliaged plants were exhibited, Mr. Lock taking the lead with huge and fresh specimens of *Latania borbonica*, *Encephalartos villosus ampliatus*, *Croton Weismanni*, and *Alocasia intermedia*. Mr. Cypher had among others a good specimen of *Croton Evansianum* and was placed second, the third prize going to Mr. W. Rye, gardener to J. Derham, Esq., for a creditable group. The competition with exotic Ferns was also close and good, Mr. Lock also being invincible in this department. His first-prize group included a grand specimen, 9 feet through, of *Davallia polyantha*, and perfect examples of *Microlepia hirta cristata*, *Cyathea dealbata*, and *Nephrolepis davallioides furcans*. Mr. S. Brown, Weston-super-Mare, was a good second, his group including a good *Gleichenia rupestris*. Mr. Lock was first with six *Adiantums*, staging well-grown specimens of popular sorts; and Mr. W. Hughes, gardener to H. Pethick, Esq., Weston-super-Mare, was a very good second. *Lycopodiums* were well shown by Messrs. Lock and E. Bryant, Weston-super-Mare; *Zonal Pelargoniums* by Messrs. S. Brown and W. Bowen, Weston-super-Mare; *Fuchsias* by Messrs. S. Brown, W. Bowen, and J. P. Cassell, Esq., Weston-super-Mare; *Achimenes* by W. Hughes, and J. Pain, gardener to W. Ash, Esq., Weston-super-Mare; *Cockscombs* by J. Pain and W. Lewis, gardener to J. E. Cole, Esq., the prizes being awarded in the order named in each instance, the competition being generally close and good. A plant of the attractive *Croton Thompsonii* gained Mr. Cypher the first prize for a new or rare plant, Mr. Lock following with *Cycas siamensis*.

AMATEURS' CLASSES.—Here again Mr. Lock was the principal prizewinner. His first-prize six flowering plants included perfectly flowered specimens of *Ixoras*, *Ericas*, and *Dipladenia*; while among the second-prize lot exhibited by Mr. W. T. Mould, gardener to E. E. Bryant, Esq., Bath, were finely flowered examples of *Bougainvillea Balfourianum*, *Allamanda nobilis*, and *Erica Eweriana*. The third prize was deservedly awarded to Falkner Taylor, Esq., Weston-super-Mare. With six fine-foliaged plants Mr. Rye took the lead, included being immense healthy specimens of *Croton pictus*, *C. Weis-*

manni, *Areca sapida*, and *Cycas revoluta*. Mr. Lock was a good second, his most noteworthy plants being *Thrinax elegans*, *Croton Prince of Wales* beautifully coloured, and *Kentia Belmoreana*. Mr. Lock had the best six exotic Ferns, these including large healthy specimens of *Davallia Mooreana*, *D. Tyermannii*, and *Gleichenia rupestris*. Mr. W. J. Mould was a good second, having among others large specimens of *Dicksonia antarctica*, *Cyathea medullaris*, and *Microlepia hirta cristata*. Hardy Ferns were well shown by J. P. Cassell, Esq., and Mr. J. Pain; *Fuchsias* by Messrs. T. R. Vickery, Weston-super-Mare, F. Taylor and J. P. Cassell; *Pelargoniums* by Messrs. I. J. Sayce, Weston-super-Mare, and W. Lewis; *Double Pelargoniums* by Messrs. W. Lewis and J. Pain; *Balsams* by Mr. J. P. Hill and the Rev. J. A. Yatman; *Cockscombs* by Messrs. J. Pain and W. Lewis; *Achimenes* by Messrs. F. Taylor and H. Mogg, Clifton; *Gloxinias* by Messrs. Lock and H. Mogg; *Begonias* by Messrs. Mogg and W. Hughes, and *Coleus* by Messrs. Upman and W. Lewis; the prizes going in the order the names are given, many others also staging creditably in the various classes.

## CUT FLOWERS.

In the open classes the competition with these was close and good, and notably so in the case of the class for twenty-varieties, triplets. Mr. J. Mattock, Oxford, was eventually awarded the first prize for, considering the season, a most creditable display. The best represented varieties were E. Y. Teas, Maric Van Houtte, Reynolds Hole, A. K. Williams, Louis Van Houtte, Jean Ducher, Duke of Connaught, Madame Victor Verdier, Duke of Wellington, and Pierre Notting. Messrs. J. Cooling & Son, Bath, were a very close second, their stands including fresh and good examples of Madame Prosper Langier, Mdle. Marie Rady, Maréchal Neil, A. K. Williams, A. Colomb, Dupuy Jamain, Prince Arthur, and Marie Baumann. The third prize was awarded to Mr. W. J. Grant, Ledbury, who also had many good blooms. Mr. Mattock was also first for Teas, among these being fresh blooms of *Niphetos*, *Etoile de Lyon*, Marie Van Houtte, Madame Lambard, Souvenir de Paul Neyron, and Madame Hippolyte Jamain. Messrs. Cooling were second and W. J. Grant third, both exhibits being fresh and good. Gladioli, as shown by the Rev. J. Dobree, Wellington, Somerset, were remarkably fine, and were a great feature in the tent where displayed. Some of the best were *Pyramide*, *Ondine*, *Mabel*, *Miss Pulman*, *Camille*, *Hesperide*, *Bonnie Bairn*, *Czarewitch*, *Glory of Plymouth*, *Dolly Varden*, *Herbert*, and *Sydney Hodges*. The second prize for Gladioli was awarded to Mr. J. Brown, the third going to Mr. A. Waters, Bath. Great quantities of Dahlias were shown. With single varieties Mr. Walters was a good first, closely followed by Messrs. Cooling & Son and Mr. J. Matthews, gardener to T. T. Knyfton, Esq., Uphill Castle. Mr. C. Hill had the best twelve double Dahlias. Asters were well shown by Mrs. Kingslake, Bridgewater, and H. Hooper, Bath; French Asters by Messrs. A. Walters and H. Hooper; Hollyhocks by W. Smith, Kingswood, and A. Walters; cut flowers by Messrs. J. Lock and G. Howe, Clifton; hand bouquet by Messrs. Cypher, M. Hookings, Clifton, and S. Brown, and buttonhole bouquets by S. Brown and Cypher, who were the respective prizewinners in the order named. The amateurs also made an effective display with cut flowers. Mr. S. Dobree was again an easy first with Gladioli, the second prize going to Mr. A. J. Loveless. Roses were well shown by Mr. S. P. Budd, Bath, and Mr. W. J. Grant, Ledbury; Dahlias by Mr. H. C. Mayell and Mrs. Crowther; *Verbenas* by Messrs. A. Hawkins, Bath, and C. Knight, Yatton; Asters by Mrs. Kingslake and H. Catley, Bath; *Geraniums* by Messrs. A. George, Bristol, and J. T. Hill; cut flowers, in twelve varieties, by Messrs. Lock and W. Rye; and hand bouquets by Mrs. Prideaux, Cotham, and M. Hookings, and many others exhibited well and successfully.

FRUIT AND VEGETABLES.—In this section there was a most marked increase in the number of exhibitors, and an improvement in the quality of the exhibits. The best eight dishes of fruit was staged by Mr. W. Rye, who had good stands of Black Hamburgh and Golden Champion Grapes, a very fine Hero of Lockinge Melon, Royal George Peaches, and Pitmaston Orange Nectarines, Jargonelle Pears, Irish Peach Apples and Morello Cherries. Mr. W. Iggulden, gardener to the Earl of Cork, Frome, was a close second, but his Grapes and some other fruit having previously been shown at Taunton lacked the freshness of his principal opponents. The third prize was awarded to Mr. J. Darby, gardener to J. Carver, Esq., Chilton Polden, for a very fresh and creditable lot, and there were four other competitors entered, most of whom showed good collections. Mr. C. Bull, gardener to General Sir Robert Buller was first with a Pine Apple, having a grand fruit of Smooth Cayenne; Mr. Wadley Rogers, Hereford, being second with a good fruit of the same variety, and Mr. Iggulden third with a neat Queen. Several fairly good stands of Muscat of Alexandria were staged; Mr. J. Loosmoore, gardener to W. Cooper, Esq., Clifton, taking the lead with well-coloured bunches, the second prize going to Mr. J. Goddard, gardener to R. H. Symes, Esq., Westbury; and Mr. W. K. Wait, Clifton, was third. With any other white Grape Mr. H. Smith, gardener to Mrs. Norris, Redland, took the lead, having Foster's Seedling in good condition; Mr. W. J. Crossman, Cossington being second with the same variety. Several lots of white Grapes shown were quite unripe, and should not have been cut. There were eight exhibitors of three bunches of Black Hamburgs, Mr. Iggulden taking first prize with compact well-finished bunches, and was followed by Messrs. E. T. Hall, Westbury, and J. Pain, who also had creditable examples. About the same number staged three bunches of any other black kind; Mr. W. W. Daffurn, gardener to Mrs. Walker, Weston-super-Mare, winning with good examples of Madresfield Court. Mr. Iggulden was a close second with the same variety, and Mr. E. T. Hall third.

A considerable number of Melons were shown. In the class for green-flesh varieties Mr. J. Pain led with a good fruit of W. Tillery, the second prize going to Mr. W. Lewis. The best scarlet-fleshed fruit was shown by Mr. Iggulden, who had a fine example of Blenheim Orange, Mr. Arthur George being second with a good fruit of Webb's Hybrid. Peaches and Nectarines were extensively and well shown, the prizewinners with the former being Messrs. C. Holland, gardener to Mrs. Temperley, Weston-super-Mare, and W. Iggulden, while Messrs. C. Holland and H. O. Wills were the winners with Nectarines. Apricots were well shown by Mr. F. W. Marsh, gardener to J. Austin, Esq., Glastonbury, Mr. Howe; Figs by Messrs. J. Matthews and W. Fear; Plums by Messrs. Arthur George and W. J. Crossman; Apples by Mrs. Walker and Mr. W. Daffurn; kitchen Apples by W. Fear and J. P. Hill; Pears by Mr. W. Daffurn and Mrs. Marshall;



Cherries by Mr. W. Fear and Mrs. Prideaux, who won the prizes in the order named.

Collections of vegetables were numerous and of great excellence. Mr. T. Tilley, gardener to Col. Cotgrave, Banwell, was a good first, his basket containing very fine Sulham Prize Celery, Woodstock Kidney Potatoes, Reading Onions, Telephone Peas, Sutton's Early Six-Weeks Turnip, Telegraph Cucumbers, Intermediate Carrots, and Hathaway's Excelsior Tomatoes. Mr. G. O. Law, Banwell, was a good second, and J. Davey, gardener to J. Carver, Esq., third. Potatoes were particularly well shown, but the judging of these would scarcely please most Potato exhibitors, more regard being paid to the known quality of the sorts than the appearance of the tubers. Out of seventeen dishes of rounds the preference was given to Prince's Beauty, shown by W. Harris, gardener to Major Law, these being both pretty and clean. Mr. J. Aplin, gardener to W. M. Baker, Esq., was second. The best kidneys were shown by Mr. C. J. Simmonds, Langford, the second prize going to Mr. J. Haydon, gardener to H. Lovibond, Esq. Carrots were well shown by Mr. C. Knight, who took first prize, the second going to F. A. Glanville. The first-prize autumn-sown Giant Rocca Onions, staged by Mr. Daffurn, were some of the finest ever seen, and Mr. C. Lilley followed with Giant Lemon Rocca, only a trifle smaller. The prizewinners with Peas were Messrs. E. J. Day and W. Fear; with Kidney Beans, J. Austin and T. T. Knyfton; and with Tomatoes Messrs. J. Rose, gardener to W. C. Clarke, Esq., and J. Reed, gardener to F. H. Parsons, Esq. Probably much finer Tomatoes were never seen at any show, but we cannot say much for the judging.

### PLUMS SPORTING—STOCKS FOR PLUMS.

I HAVE many trees of a Plum called White Perdrigon, but which I believe is a seedling of the Gisborne. Some years since I grafted a Transparent Plum tree with a White Perdrigon. For several years it has borne fruit always true to sort and colour—viz., lemon-yellow. This year on all the shoots except one, a small one, comes one red-coloured Plum, shape and size the same as the yellow ones on the tree. If any of your numerous readers have ever known a somewhat similar circumstance I hope they will write to your paper and state particulars. Can anyone inform me what stock is best for Plum trees to prevent suckers being thrown up? Some of my trees never produce suckers, others send up quantities; cut them off as often as seen.—ROBERT WARNER, *Broomfield*.

### SHREWSBURY SHOW.

THE annual Exhibition of the Shropshire Horticultural Society was held on August 20th and 21st, and in every respect it was marked by the uncommon success which has so conspicuously characterised its predecessors. The place of exhibition was the "Quarry" Grounds attached to the ancient and picturesque town of Shrewsbury, and is a most enjoyable park, a beautiful place of resort with avenues—long, curving, and refreshingly shaded with finely grown Elms. There is an ornamental lake, too, in the centre, with undulating ground and walks all round, and the whole is bounded on one side by the Severn. The show-tents, spacious and numerous, were erected in convenient positions, and the interiors were adorned with many beautiful and rich specimens of the gardener's art. Financially this Society stands unique. The subscriptions in 1883 amounted to over £400; £396 worth of tickets were sold by the Secretaries before the Show day, and the gate money on the second day of the Show amounted to the handsome sum of £1055, and after making liberal donations to the town for the public benefit they finished up the year with a balance at the bank of £634. This will, no doubt, be augmented in 1884, as the weather during both Show days was very fine and the attendance large, and everything satisfactory. We were greatly struck with the systematic and business-like way in which all the details were carried out. Golden rules have been formed and have been adhered to in the management, and all who wish to excel in such matters would do well to take a leaf from the book of the two courteous and energetic Secretaries, Messrs. Adnitt and Naunton. Cheap trains were run from all the thickly populated localities in the neighbourhood. Music was supplied by the bands of the Royal Horse and Coldstream Guards. Mêlées, hot and bloodless, were executed by the county Yeomanry. Astounding acrobatic feats were performed by renowned artists, and a grand display of fireworks terminated each day's proceedings. These are minor accompaniments, and pay when managed as in this instance; but they by no means overshadow the Show in interest, and only add variety after the garden products have been inspected.

### PLANTS.

Twenty stove and greenhouse plants were first on the list of these, with prizes of £25, £20, and £15. Four competitors ventured to enter for this, and Mr. James Cypher of Cheltenham secured the "big prize;" Mr. Tudgey, Waltham Cross, was second; and Mr. C. Roberts, gardener to E. C. Glover, Esq., Highfield Hall, near Leake, was third. Mr. Cypher's plants were all good, many of them extremely so, and this applies to *Erica Austiniana*, *Croton angustifolius*, *Stephanotis floribunda* beautifully bloomed, *Cycas revoluta*, *Croton Queen Victoria* finely coloured, *Allamanda Hendersonii*, *Clerodendron Balfourianum*, *Rhododendron Duchess of Edinburgh* splendidly bloomed, and many fine Palms. Mr. Tudgey's best plants were but little inferior to the first, especially his *Ixora Williamsii*, *Cycas revoluta*, and *Erica Eweriana* *superba*, large and finely flowered. Coming from a private grower Mr. Roberts' twenty were highly creditable—*Ixora Williamsii*, *Dipladenia amabilis*, *Cycas revoluta*, *Croton majesticus*, and *C. angustifolius* were capital in his group.

The next class was for nine stove and greenhouse plants, open to Salop and Monmouthshire, with prizes of £10, £6, and £4. The first, given by Henry Roberts, Esq., M.P., was won by Messrs. Pritchard & Sons, nurserymen, Shrewsbury, who had well-grown plants, especially of *Lapageria alba*, very finely bloomed, *Kentia Forsteriana*, *Allamanda nobilis*, *Croton Queen Victoria*, *Vinca alba*, and *Bougainvillea glabra*. Mr. Thurke, gardener to J. S. Burton, Esq., Longner Hall, was second, and Mr. J. Farrant, gardener to Mrs. Juson, Abbey Foregate, was third. Mr. Thurke had splendid plants of *Anthurium regale* and *Alocasia metallica*; and Mr. Farrant had the best *Ixora Williamsii* in the Show in his nine.

In the amateurs' class for six stove and greenhouse plants good specimens were shown by Mr. H. Owen, The Cedars, Shrewsbury, and Mr. Burd, Newport House, Dogpole. Heaths were largely shown and very attractive. Mr. Cypher was first for six plants, his best being *E. Marnockiana* and *E. Fairriana*. Mr. Tudgey was second, his *E. Eweriana* *superba* being a particular good plant. Mr. C. Roberts came third with well-bloomed but smaller plants.

In the class for nine exotic Ferns Mr. Cypher was again first with fine healthy specimens, including grand ones of *Davallia Mooreana*, *Gleichenia flabellata*, *Adiantum cardiochlaena*, and *Aglaomorpha Meycriana*, very fine. Mr. Thurke was a good second with *Adiantum formosum*, *Goniophlebium appendiculatum*, and others.

Mr. Farrant was first for six exotic Ferns, his *Davallia Mooreana* and *Cyathea medullaris* being very good. Mr. J. Lambert, gardener to Col. Wingfield, Onslow Hall, the President of the Society for 1884, was second; and Messrs. Pritchard & Sons third. For Palms Mr. Cypher was foremost with tall well-furnished specimens, which embellished the centre of the largest tent, as did also those from Mr. Tudgey and Mr. Roberts. *Dracaenas* were fine, the best coming from Mr. Lambert, Mr. Roberts, and the Misses Bannerman, Roden Hall. *Caladiums* were splendid, the plants being large and the foliage beautifully coloured. Messrs. Pritchard & Sons and Mr. Farrant were the chief exhibitors. *Coleus* were large enough, but deficient in colour and dull against good foliage plants; *Fuchsias* were fresh and healthy, but not very well bloomed; hardy Ferns were good from Mr. Murivance and Mr. Burr, Shrewsbury.

*Liliums* in pots were not very attractive. Tuberous *Begonias* were bright, and evidently the Misses Bannerman and the Rev. J. H. E. Charter of Severn Villa know how to cultivate them. Double and single *Pelargoniums* in pots were grand from Messrs. Oldroyd, nurserymen, Shrewsbury, and Messrs. Pritchard & Sons. *Achimenes* were past their best; but the *Gloxinias* from Mr. H. Owen and Mr. E. George, Column Villa, Shrewsbury, were splendidly bloomed and of good sorts. *Balsams* and *Petunias* were not of uncommon merit, but the table plants from Messrs. Pritchard were useful.

A specially interesting feature in the large tent were the groups occupying 100 square feet and arranged for effect. Messrs. Pritchard were both first and second in this, and they well deserved their positions, as they were exceedingly well arranged, the undergrowth being principally Maiden-hair Ferns, with graceful plants springing from it, and no sudden falls occurred in the bank, which was not the case in the third-prize arrangement of Messrs. Jones of Shrewsbury.

### CUT FLOWERS.

These were attractive and beautiful. The boxes of bunches of blooms contained many choice flowers and Orchids. *Phloxes* were very showy; *Dahlias* were numerous and in the finest possible condition. This refers to the large double blooms; single ones were very poor and far from making a good impression. *Verbenas* were withered before they were long staged. *African Marigolds* were grand contrasts to them; other border flowers were in good condition. *Roses*, considering the time of the season, were remarkably good. Messrs. Perkins, Lymington; Messrs. F. & A. Dickson, Chester; and several local growers had fine stands of bright well-formed blooms. Hand and bridal bouquets and buttonhole flowers were beautifully done, especially by Messrs. Perkins, Messrs. Cypher, and Messrs. Jones and Sons.

### FRUIT.

Grapes, Peaches, Nectarines, and all fruits now ripe were largely shown, and in the majority of instances the quality was high. The exhibits were staged in the cut-flower tent, and as soon as judging was over wire netting was put up in front as protection. Black Grapes headed the list in this section, and prizes of £5, £4, and £2 were offered for six bunches of three varieties. Here Mr. J. Wallis, gardener to the Rev. W. Sneyd, Keele Hall, was first with good bunches of Muscat Hamburg, but deficient in colour, Black Hamburg, and fine Black Alicante. Mr. R. Milner, gardener to the Rev. J. D. Corbett, Sundorne Castle, was second with smaller bunches of the same varieties. For three bunches of black Grapes, open to Salop and Montgomery, Mr. J. Lambert was first with really fine Black Hamburgs. Mr. S. Bernmell, gardener to J. Beattie, Esq., was second with Gros Guillaume, fine bunches, small berries. Mr. H. Purser, gardener to J. Watson, Esq., was third with small Black Hamburgs. Viscount Boyne was first for four bunches of white Grapes with capital Muscat of Alexandria and Foster's Seedling. Mr. Wallis was second with Duke of Buccleuch, fine bunches, large in berry, and spotless, and Muscat of Alexandria. Mr. Milner was third with Buckland Sweet-water and Muscat of Alexandria, both small in bunch. The amateurs' black and white Grapes from Mr. H. B. Phillips, Mr. E. Lea, Mr. Humphreys, and Mr. G. Burr did credit to their cultivators.

Unaccountably there were no entries for the largest collection of fruit, but some fine samples were staged for a collection of nine dishes. Here Mr. Purser was awarded the first prize, having very fine Muscat of Alexandria, Black Hamburgs, Melon, Cherries, Apricots, Green Gages, Plums, and Nectarines. Mr. Lambert was a close second, and but for his deficiency in Muscats might have been first. They were of a bad colour, but the Black Hamburgs were good, and here was the finest dish of the Speedwell Gooseberry we have seen for some time. They were immense fruits, like *Victoria* Plums. La Grosse Sucrée Strawberry was also well shown in this collection. Mr. H. E. Kennedy, gardener to Sir C. R. Boughton, Downton Hall, was third with small neat dishes, his *Noblesse* Peaches being splendid. Many fine dishes of Peaches were shown. The first prize for a dish of six fruits was secured by Mr. H. West, gardener to E. Wright, Esq., Halston Hall, with Barrington. Mr. Wallis was second with Galande. In Nectarines, Mr. C. Davies, gardener to F. B. Sladen, Esq., Sleighton Hall, was first with capital Lord Napier; second Mr. Wallis with *Victoria*. Plums were deficient, and in flavour the Melons were not first-rate. Cherries were shown extensively and in good condition.

### VEGETABLES.

Many good collections and dishes of these were staged. For a collection of twelve sorts Mr. Lambert was first with a splendid assortment, including first-rate Trophy Tomatoes, Porter's Excelsior Potatoes, Snowball Turnip, Brussels Sprouts, Brown Globe Onion, and Autumn Giant Cauliflower.



Potatoes were splendidly shown, and Mr. Milner was awarded the first prize for six varieties with clear tubers of Adirondack, Magnet, Prize-taker, Cosmopolitan, Lady Truscott, and Vicar of Laleham. The single dishes were very good, but several of them were wrongly named, as, for instance, Schoolmaster is a perfect round Potato, and not a long one like Magnum Bonum. Several dishes of Tomatoes were extra good, as were the Onions, Carrots, and Turnips.

The cottagers had a large tent all to themselves, and it was not the least in attraction, as the quantity of the exhibits was amazing. In small fruits and vegetables they quite surpassed the professional section. Currants, Gooseberries, and Apples were their main fruits, but we were rather astonished not to find any Lord Suffield Apples shown, as it is the best of all Apples for a cottager at this season. Altogether the cottagers' exhibits must have numbered some thousands of dishes, and the Committee may be congratulated on making such excellent provision in this department and having such a hearty response.

#### MISCELLANEOUS EXHIBITS.

These were numerous and of a very interesting character. Messrs. Webb & Son, Wordsley, Stourbridge, were the only exhibitors of the necessary and useful culinary productions, and they staged large quantities of Potatoes, Peas, Onions, Carrots, Cabbage, Lettuce, Beans, &c., of great merit. All the best things were their own special varieties, for which this rising firm has of late been justly celebrated, and as special exhibitions at shows are so often confined to plants and cut flowers, frequently of little value, a vegetable show like the one in question would no doubt be much appreciated. Mr. T. Laxton of Bedford exhibited several of his specialities, the best of which was the Girtford Giant Runner Bean. This received a certificate of merit from the Judges, and it deserved it, as it is very distinct, and a fine variety. The pods were about 12 inches in length, perfectly green, and very handsome. Sandy Prize Onion and Evolution Pea were also good and attractive from the same grower. Messrs. James Dickson & Son, Chester, exhibited an extensive table of well-grown stove and greenhouse plants, and a group of the same description also came from Messrs. F. & A. Dickson, Chester. Messrs. Myres, Sutton Lane Nurseries, Messrs. Pritchard & Sons, and Messrs. Jones, all of Shrewsbury, were also extensive exhibitors of choice small plants.

#### CRAIG-Y-NOS (ROCK OF NIGHT) CASTLE.

##### THE WELSH SEAT OF MADAME PATTI.

THE gardens are comparatively speaking new, having been laid out a few years ago by Mr. Barron, landscape gardener, of Sketty. The glass houses also were designed by him, and constructed by Mr. Joseph Gwyn, builder, of Sketty. The machinery for ventilation is simple, easy, and excellent in working, the materials used being of the best description. The Thames Bank Company's system of heating is adopted. The winter-garden building is a splendid glass house, and contains a good variety of tropical plants, which cost several hundred pounds. They are doing well, and in a fine state of growth under the care of Mr. George Tylor, head gardener to Madame Patti. There are many specimen plants, and a good selection of trained plants and climbers—viz., Abutilons, Tacsonias, Passifloras, Lapagerias, &c. A plant of Lapageria alba, covering a large space on the back wall just commenced flowering, also a plant of Abutilon vexillarium occupies much room. There is a fine plant of Clematis indivisa, which has a beautiful effect in early spring with its lovely bunches of white flowers, and should be in every collection. Some good specimen Palms are arranged in pairs of the following: *Chamaerops excelsa*, *C. humilis*, *Kentia Fosteriana*, *Phoenix dactylifera*, and *Seafortia elegans*. Also some noble specimens of Tree Ferns—a pair of *Dracana lineata* and a pair of *D. australis*, from 12 to 14 feet high, are close to the roof. Several handsome plants of Camellias produce immense quantities of flowers. Everything appears to have made rapid growth since the collection was planted three years ago. The building is evidently too low for many of the specimen trees and Tree Ferns, and it would be well to raise the roof to preserve the collection from further mutilation. A fine plant of *Araucaria excelsa* having reached the roof, has had its leader cut away; a pair of *Eucalyptus* have also been served in like manner. The collection is unique. The winter garden is connected with the conservatory by a long glass corridor, and there is thus a passage from the drawing-room to conservatory and to the winter garden under cover at all seasons of the year. In the conservatory the pillars and bearings are covered and festooned with Passifloras, *Cobæa scandens*, and the variegated variety, which has a very pretty effect. The conservatory is used now as a dining-room, and the electric lamps have just been fixed there, also in the winter garden, have a fine effect by night. The machinery for this occupies one of the sheds in the forcing department, and was fixed by Messrs. Paterson & Cooper, of Little Britain, Aldersgate Street, London, under the directions of Mr. Legge, gasfitter, Swansea. The gasworks, which have been in use some few years here, will be utilised for working the electric light. The stoves, which are well filled, are in four divisions, the roof of one house being nearly covered by a beautiful plant of *Allamanda Schottii*, now in full bloom. The second is used as a Melon house, some beautiful fruits being grown of Blenheim Orange and Hero of Lockinge, about 4½ lbs. weight each—a useful size for table. Large quantities of Tomatoes are grown in one house, while another is nearly filled with many varieties of Coleus, which are used to a great extent for decorating the conservatory. There was also a most lovely plant of *Bougainvillea glabra* in full bloom.

The vineries are in good condition. In the early house the Vines were growing too strongly, and Mr. Tylor has had some difficulty in colouring the fruit of late. During the past winter he had the Vines lifted, and now the wood is of medium growth. The bunches of Grapes were cut off as soon as they appeared, with the exception of a few, which appear

to be colouring well. The variety is Black Hamburg. In the second house is a splendid crop of Grapes, rather too heavy, but Mr. Tylor has allowed this through sacrificing the crop in the early house. The sort grown in this house is chiefly Muscat of Alexandria, with the addition of a few Vines of Madresfield Court and Foster's Seedling. The forcing department and houses generally are well managed by Mr. Jones, the foreman, of whom Mr. Tylor speaks very highly. In the frames were a large quantity of *Campanula pyramidalis*, forming good specimen plants, which are very effective for furnishing.

The kitchen garden is sand reclaimed from the foot of the Cribeth Mountains, where, during the rainy season, the waters gathered and descended, flooding the hillside and washing away the soil, leaving the land bare and sterile. The water is now conducted through a large culvert. As a consequence manure has to be bought in quantities from farmers in the neighbourhood. Mr. Tylor finds great difficulty in growing Asparagus, having made new beds and replanted successively, and still it dies. This spring he had ground prepared and Asparagus seed sown, now the young plants are growing and looking healthy.

Craig-y-Nos Castle is beautifully situated and secluded at the top of the Swansea Valley; the Cribeth Mountains are behind, the river Tawe flowing at the foot of the pleasure grounds in front, with woods and preserves on rising ground beyond. The Coniferae and Rhododendrons are making good growth, although some of the Rhododendrons are looking sickly where planted on the sterile banks. Mr. Tylor is placed at a great disadvantage, as his house is a mile from the gardens. The house built at one angle of the kitchen garden, intended for the gardener, is now occupied by the gamekeeper.—C. J.

#### WORCESTER HORTICULTURAL SOCIETY.

AUGUST 13TH AND 14TH.

THE annual summer Exhibition of this popular Society was held at Perdiswell Park, the residence of Henry Walker, Esq., the beautiful well-kept grounds and flower garden being also kindly thrown open to the visitors. These attractions, in addition to a very excellent display in the tents, all served to make the Show a most decided success in every respect, and doubtless resulted in a satisfactory balance in favour of the Society. The Committee, with their courteous Honorary Secretary, Mr. J. H. White, all worked hard, and the arrangements on the whole left nothing to be desired.

GROUPS OF PLANTS.—These are always the principal feature at the Worcester Shows, and we think rightly so, and if other societies made good provision for these there would be less need of the aid of professional exhibitors from a distance. Nearly every good gardener could furnish a pretty group of plants, while on the other hand there are few who are in a position to grow and exhibit large specimens. At Worcester the principal prize for a group occupying a space 30 yards square was awarded to Mr. Cowan, gardener to H. Walker, Esq., whose arrangement and quality of plants employed—these including many Palms, Ferns, Crotons, Dracaenas, Lilliums, Tuberoses, and Begonias—was extremely good. Equal second prizes were awarded to Mr. J. Green, gardener to Captain Castle, and Mr. A. Edwards, gardener to J. S. Isaac, Esq., who arranged more showy groups, but they were lacking in quality and lightness, being in fact overdone with Zonal Pelargoniums, Gladioli, &c. Groups occupying spaces of 15 square yards were most tastefully arranged by Mr. T. Lawley, gardener to T. C. Quarrel, Esq., and Mr. J. Vicarage, gardener to Mrs. Allies, who were rightly awarded the prizes in the order named.

STOVE AND GREENHOUSE PLANTS.—Collections of six plants in bloom were well shown by Messrs. Vicarage, T. Lawley, and G. Holman, gardener to H. Bramwell, Esq.; Ferns by Messrs. D. Ballard, gardener to Mrs. Taylor, J. Green, and G. Holman; fine-foliaged plants by Messrs. G. Holman and A. Edwards; Fuchsias by Messrs. T. Lawley, A. Edwards, and J. Gardener; British Ferns by Messrs. J. Vicarage, J. Baskell, and Norman, gardener to A. W. Knott, Esq.; Coleus by Messrs. J. Green, T. Lawley, and G. Holman; plants for table decoration by Messrs. Cowan, A. Edwards, and J. Haskell; Tuberoses-rooted Begonias by Messrs. Hewitt and Co., Birmingham, J. Green, and A. Edwards; Gloxinias by Messrs. J. Haskell and J. Gardener; Cockscombs by Messrs. T. Lawley and W. Williams, the prizes being awarded in the order named for praiseworthy exhibits in each instance.

CUT FLOWERS.—The most successful exhibitors of twenty-four Roses were Mr. W. J. Grant, Messrs. J. Lewis & Son, and Mr. Cowan; of twelve cut Roses, Messrs. W. J. Grant, J. Davies, gardener to the Rev. H. Arkwright, and Messrs. Lewis & Son; Dahlias, Messrs. G. Maylett, W. Shaw, and G. Fortey; single Dahlias, Messrs. J. S. Haywood, G. James, and W. Shaw; vases of flowers for table, Messrs. W. Shaw and Gardener (equal firsts); and Gladioli, Messrs. G. S. Haywood, J. Lewis & Son, and W. Shaw.

FRUIT.—The competition in the various fruit classes was remarkably good, and all, with the exception of Plums and Melons, were of superior quality. With a collection of six dishes exclusive of Pine Apples Mr. Barker, gardener to Sir Henry Allsopp, was easily first, having large well-finished bunches of Madresfield Court and Muscat of Alexandria Grapes; a good Blenheim Orange Melon and fine Royal George Peaches, Lord Napier Nectarines and Brown Turkey Figs. Mr. W. Gould was second, his collection including very fine Lord Napier Nectarines, Grosse Mignonne Peaches, and good Black Hamburg Grapes; while in the third-prize lot staged by Mr. W. Child, gardener to the Earl of Coventry, were good though small bunches of Black Hamburg and Muscat of Alexandria Grapes. The first-prize bunches of Black Hamburg Grapes shown by Mr. Barker were perfect in every respect, and not much fault could be found with those staged by Messrs. J. Green and W. Gould, which respectively gained the second and third prizes. Mr. Barker took the first prize in the class for any other black variety with Madresfield Court, beautifully finished, and was followed by Mr. G. Holman. Mr. Barker was also first with Muscat of Alexandria, and was closely followed by the Rev. H. W. Coventry and Mr. G. Holman, all having very creditable examples. With any other white variety Mr. Child was a good first, and was followed by Messrs. J. Green and A.



Barker. The latter was first with two Pine Apples, the remaining prizes going to Mr. G. Holman. Mr. Barker had the first prize in the class for Peaches, staging Noblesse in good condition, Mr. Edwards following with good Royal George, and Mr. W. Gould was third with Grosse Mignonne. In the class for Nectarines Mr. Barker took the lead with a good dish of Lord Napier. Messrs. Edwards and J. Green followed with Pine Apple, large and well coloured. The successful exhibitors of Apricots were Messrs. G. Holman, J. Aston, gardener to the Rev. W. E. Berkeley, and Cowan; of Plums, Messrs. J. Cosnett and G. Holman; Figs, Messrs. Barker and W. Gould; Melon, scarlet-flesh, Mr. J. Aston, Rev. H. W. Coventry, and G. Holman; Melon, green-flesh, Messrs. Barker, G. James, and Cowan; Culinary Apples, Messrs. Cowan, Barker, and Haynes, gardener to Mrs. Bell; Dessert Apples, Messrs. Barker, G. Holman, and W. H. Jones; Pears, Messrs. Barker, W. Gould, and A. Edwards; Currants, Mrs. Abell and Messrs. W. Shaw and T. Lawley; and Gooseberries, Mrs. Abell and Messrs. J. Cosnett and W. Shaw, who in each case were deservedly awarded the prizes in the order in which named.

**VEGETABLES.**—These are invariably well and extensively shown at the Worcester Shows, the only perceptible falling-off in numbers or quality being in the classes for Peas and Cauliflowers. The best collection, consisting of good Green Globe Artichokes, Veitch's Autumn Giant Cauliflowers, Veitch's Ashleaf Potatoes, Dr. McLean Peas, Red Italian Tripoli Onions, and Canadian Wonder Beans, was staged by Mr. Barker, this exhibitor being also remarkably successful in the various classes for single dishes of vegetables. The second-prize collection was staged by G. Holman, and the third by Mr. W. N. Hughes, gardener to R. A. D. Gresley, Esq., both having good dishes of vegetables in season. Other successful exhibitors of single dishes of vegetables were Messrs. T. Lawley, G. Fortey, Cowan, G. Maylett, T. C. Need, W. H. Jones, Freeman, gardener to E. H. Hill, Esq., J. H. White, Lord Hampton, Mrs. Abell, and the Rev. H. Arkwright. In the amateurs' plant classes the most successful were Messrs. W. Knott, A. W. Knott, A. J. Beauchamp, G. H. Latty, G. Maylett, Hadley, Hughes, and Mrs. Maylett; while the principal prizewinners with fruit were Messrs. Maylett, W. Knott, A. J. Beauchamp, Pritchard, W. C. Phillips, Brindley, F. T. Firkins, and E. Yeates.

Messrs. Smith & Co., the well-known Worcester nurserymen, staged a collection of cut Roses and herbaceous plants, but not for competition; and Messrs. Rowe & Co. and Mr. Haywood also lent a number of plants; while from Messrs. Cranston & Co., Hereford, came several boxes of fine cut Roses, including a magnificent stand of Maréchal Niel, and Messrs. T. Hewett and Co., Solihull, fine Tuberous Begonias, all of which materially contributed to the success of the meeting.

### FOREST CULTURE.

**TREE-PLANTING**, says a daily paper, has, perhaps, ceased to be a branch of British agriculture. Of the old woods which once covered so much of England only a few patches remain. Private forests are few—the so-called deer forests are for the most part treeless mountain wilds—and in general confined to the ornamental timber in the vicinity of parks and private residences. The State has still, as in Hampshire, a few well-wooded tracts from which some revenue is derived, and of late years several enthusiasts have planted a considerable acreage with Larch, Lombardy Poplar, and the numerous ornamental Coniferae of North-West America, Japan, and the Caucasus. But timber as a crop does not pay. To plant for another generation to reap, is what Washington Irving calls "heroic culture," and even the spendthrift squire who in the plays is always selling the family Oaks, finds in the stern reality of everyday life that it takes a great many of the gnarled trunks to get clear of the Jews. But even from a commercial point of view, as the recent proposal to afforest Ireland shows, timber-planting ought to prove profitable in certain parts of the country, while the amelioration of the climate and the improvement of the public health render its encouragement a question of national interest.

On the Continent, however, there are still many great public and private forests, the preservation and regulation of which are the business of a department of State. As fuel and material for railway construction, and for various farming purposes, the forests are of no small value, while charcoal for the powder mills, tar and turpentine for the manufactories and the ship-yards, and wild beasts for the hunting parties, which, in France and Germany, have not ceased to be grave "functions," render the selection and planting of trees matters of scientific moment, even in an age when "the wooden walls" of the poet are built of iron plates. Thus forty-two per cent. of the surface of Russia, notwithstanding the vast steppes of the south, is covered with forest of some kind, thirty-three per cent. of it being land bearing marketable trees. Austria, again, has twenty-nine per cent. of her area forest; Germany twenty-six per cent.; France nineteen per cent.; Italy eighteen per cent.; and Turkey fourteen per cent., though the valuable Box and other woods of the Ottoman Empire are being recklessly plundered, destroyed, or injured by reason of mismanagement, or lack of management, on the part of the authorities.

A large portion of America—though by no means so large as is generally supposed—is still clothed with primeval forest. Canada, popularly believed to be one vast forest without interruption or limit, has scarcely one-tenth of its surface under timber. The Saskatchewan Valley—equal to thirteen States of the size of New York—is chiefly prairie; and most of British Columbia, east of the Cascade Mountains, is only sparsely timbered, though the West and Vancouver Island are for the most part one dense Fir forest. The Oak still exported from Quebec Dr. Lyons, in the recent reports presented to Parliament, declares to be from the forests of Michigan and Ohio, and the Walnut and White Wood come mainly from Indiana, Ohio, and some other Western States. The provinces of Ontario, Quebec, New Brunswick, and Nova Scotia have been

so heavily put under contribution for Pine and Spruce that unless replanting is undertaken a century will see the supply at an end. The timbered lands are still counted by millions of acres. But both in the States and Canada unknown quantities of coppice and scrub exist, the timber of which will not pay its own transport to the most moderate distance, while millions of acres still counted as forest in the statistical returns are strewn with the charred remnants of forests or impassable by reason of windfalls levelled by the wild storms of former years, which have made mile upon mile of wood utterly useless. The recklessness of the backwoodsman and the hunter is almost incredible to those who have lived all their life around the park-like woods of England. A camp fire is never extinguished; a magnificent Cedar will be utilised for a backlog, or a tree will be set on fire to act as a beacon to a stray companion, with the consequence of acres of fine timber being destroyed before the blaze dies out. It is even affirmed that a fire has been ignited merely to show the grandeur of the scene, and allowed to burn out without even a thought of rescue after the curiosity of the perpetrators was satisfied with gazing at the tremendous ravages thus wantonly produced. It is, therefore, a delusion to picture North America—and under this conclusion we must embrace Mexico, which is suffering terribly from the improvident destruction of its timber—as ready to furnish inexhaustible supplies of wood. The vast area drained by the Mississippi—which includes more than half the area of the United States—is mostly treeless, patches of Michigan, Wisconsin, and Minnesota being the principal exceptions to this rule. Most of the New England and Middle States containing, until comparatively recently, dense groves of the best Pine, are now almost wholly stripped of their timber; and if we exclude Maine, which has still some forest, they are wasting what remains, Canada and Michigan receiving every year large sums for the wood which they can no longer obtain within their own bounds. With the exception of the western part of Virginia, scarcely one of the Southern States has any White Pine, a loss which cannot be compensated for by an abundance of Cyprus and Pitch Pine. Finally, California and Nevada have—the last-mentioned State especially—barely enough to supply their own wants. Altogether there is only about 380,000,000 acres of forest land in America, while in Europe there is 661,000,000 acres, of which Russia represents about 469,500,000, with a consumption from firewood alone of probably 1,000,000 cubic feet per annum.

England stands pre-eminent as the greatest importer of timber—290,000,000 cubic feet entering our ports every year—while we have only 2,174,083 acres of forest, and of this Scotland alone furnishes one-half. No country is, therefore, so deeply interested in the forest economy of other lands, for in payment for timber and the great forest products—such as barks, paper, tar, pitch, wood oils, resin, gum, &c.—we send abroad something like £20,000,000 per annum; and if other nations on whom we are dependent for these articles so essential to our maritime supremacy, and consequently position as a first-class power, do not manage to multiply, and therefore cheapen, their supplies, we must make up our minds to disburse much more than we are doing. Timber, indeed, is one of the articles which have never decreased in value. It is regularly advancing, the price to-day being about 300 per cent. more than it was sixty years ago. In the United States quotations rose 100 per cent. in the eight years prior to 1882; a similar advance was observed in Russia; and in Sweden and Norway in thirty-five years the rise has amounted to from 150 to 200 per cent., according to the kind of wood. Strenuous efforts accordingly are being made to re-afforest the denuded tracts, either by private or public efforts; by sumptuary laws like those in Japan, which ordain that no person is to cut down a tree without putting another in its place, on the principle of the Laird of Dumbledykes, who enjoined his son "aye to be stickin' a tree—it grows while you are sleeping;" by bounties or during festivities, such as "Arbor-day," when the people voluntarily try to make up for the shortcomings of themselves and their ancestors. Nor is this foresight taken one day too soon. Various regions are suffering from drought, as nearly every country in the world which has been improvident enough to sweep away its timber without thinking of the future has. The gradual desiccation of those once green and fertile islands of the West Indies, Santa Cruz, and St. Thomas, is the result of the destruction of their ancient jungles. The little island of Curagoa, where rich plantations, beautiful villas, and terraced gardens have given place to aridity and desolation owing to its injudicious export of valuable timber, is a striking illustration of the same mischief wrought along the entire coast of the Mediterranean, where a blight has fallen on the land by reason of the denudation of forest acres. The report to which we refer is full of such instances. The soil once protected by the umbrageous foliage gets parched, and the rain, instead of sinking into the ground, rushes off in uncontrolled and ruinous torrents.

In most of the German States foresters are trained for the due conservation and regulation of the public and private wooded areas, and colleges for this purpose are established in Scandinavia, Russia, France, and the United States, which is now so earnestly looking to the cultivation of arboricultural science as one of the future sources of national wealth. In this country we have no establishment of the same character, and, considering the small extent of our forests and their almost exclusively ornamental nature, it would not be advisable merely to gratify an interested outcry, that the students selected for the Indian and Colonial forestry services should be kept at home instead of being sent to France and Germany, where an infinitely more practical instruction can be afforded them than in Scotland, skilful though the woodmen of the north unquestionably are. The regulations affecting these forests vary in almost every country, though in none are the cutting down of even private woods in season and out of season entirely ignored by the State, as the various abstracts furnished by the diplomatic



agents show. Neither in France nor Germany is any land allowed to lie waste. It must be planted with something, if it is capable of bearing any crop. Hence, forest culture is generally practised, albeit the outcry among the timber merchants is loud for "protection" against the influx of foreign timber, which reduces their profits. In 1811, about the time when Adam Smith's doctrines were replacing the mediæval dicta about the right of the State to interfere with the "free mobilisation of capital," Prussia, and, following her lead, most of the other German States, relinquished all control over private forests. The result was disastrous. The highlands of Saxony were bared. The plains of the Baltic, once covered with Pines, were converted into desolate heaths. Anhalt was denuded of trees. Oaks became extinct everywhere, and no woods of deciduous-leaved trees remained. Even the Pine vanished, and only the Larch survived. In 1846 scarcely an Oak was left in Mecklenburg, and the high grounds of Schleswig-Holstein, which, prior to 1811, were clothed with Birch woods and Oak coppice, are now in their barrenness monuments of the folly of the course then adopted. In South Germany, however, the restraining hand was never withdrawn, and so Nassau, Hesse-Cassel, Hesse-Homburg, Hesse-Darmstadt, and Baden have never been compelled to buy and plant land as Prussia has, owing to the recklessness with which her woods were destroyed for the sake of immediate profit. In Switzerland, though cantonal interference has been often resented and sometimes resisted, the Governments insist on controlling the cutting of timber. So do Austria and Bavaria. Whole districts in the Eifel have been rendered valueless owing to carelessness on the part of the peasants, and are being slowly recovered, at great cost and labour, by the adoption of the very measures the neglect of which brought all the trouble on the people. In the Westerwald Oats and Barley once grew on land 150 to 200 feet above the present corn line. But the wood on the mountain tops was cut down, and the icy storms from the north-west have, in consequence, as Mr. Baring Gould tells us, driven cultivation further into the valleys.

Woods protect orchards and fields, and arrest in sandy regions the advance of the drifting particles. The impecunious Polish nobles cleared off their forests and then sold the land by raffle. The result is that many of their estates are now covered with sand, which in some districts marches inland at the rate of 30 feet in the twelve months. In Prussian Saxony, the town of Düben celebrates with music and beer-drinking the replanting of the woods which stopped the progress of the sand that was rapidly overwhelming gardens and corn fields, the forests which had previously prevented the inroads having been hewn down for the sake of pelf. "Vegetables became scarce, pasture for cattle rare, and the most serious results were feared, when the forester of the district offered to oppose the devastating invasion. Fifty years have elapsed since then. Now rich woods of Robinias, Birch, and Pine wave over the sandy hills, and with their fine network of rootlets hold the restless sand in its place, and compel it to quiescence." Even as Mr. Howitz demonstrated to the recent Fishery Conferences, the destruction of trees bordering streams and lakes, by decreasing the number of branchlets, twigs, and decaying vegetation, and the numberless grubs, caterpillars, beetles, flies, and other insects which live on trees, lessen the number of fish. The farmer hates trees around his fields and in his hedgerows, under the idea that they harbour birds and deprive the crops of sunshine. To a certain extent they do, especially if Ash is ignorantly planted, as it frequently is. But birds keep down insects, and on the whole a moderate amount of trees not only impart a charm to the landscape, but benefit the tiller. Tree culture is, however, not so popular as it was when an Earl of Seafield planted 30,000,000 saplings and a Countess of Haddington, reversing the usual routine, sold her jewels to plant a wood of 1000 acres. In our damp isles we are not likely to feel the failure of rainfall due to lack of woods as at Payta, south of Panama, where, for this very reason, the cultivation of the soil is at an end, or in Ascension, where rain is rare, owing to the recklessness with which the trees were cut off what is now a mere cinder heap. But the pleasure of taking our ease when the sun is strained through green leaves we can all enjoy, even though with the sea always near, we may not, like the Germans of whom Riehl writes, "need the forest as man needs wine."

#### THE TAUNTON DEANE HORTICULTURAL SOCIETY.

YOUR correspondent "D., Deal," as usual has given a very glowing description of the late Exhibition of this Society, and, as usual, entirely omitted all mention of the extensive exhibits in the fruit and vegetable tents, the departments where the Taunton Show proves so much superior to all others held in the west of England; and I speak from experience when I state that not only do the many exhibitors consider this omission a slight on them, but also that your correspondent neglects the most generally interesting portion of the Exhibition. We must have specimen plants, or at any rate large groups of plants at flower shows, but without fruit and vegetables these would prove but poor attraction to innumerable visitors. As I am enabled to forward you a list of some of the prizewinners in the neglected classes, with a few remarks, I shall be glad if you will find room for them.

There were three classes provided for collections of vegetables. In that for ten dishes Mr. W. Iggulden, gardener to the Earl of Cork, Frome, took the lead, and was followed by Mr. W. J. Crossman, gardener to J. Brutton, Esq., and Mr. A. Miller, gardener to W. H. Long, Esq., Rood Ashton, all having superior fruit. With eight dishes Mr. Crossman was first and F. J. C. Parsons, Esq., second. With four dishes the competition was close and good; Mr. Walker was first, W. Iggulden, second, and T. Frost, Esq., third. Mr. C. Brooke had the best two Pine Apples, very fine Cayennes, and was closely followed by Mr. C. Nicholas, gardener to Earl Fortescue,

with the same variety, this exhibitor also staging a number of fine Smooth Cayennes not for competition. The best Black Hamburgh Grapes were staged by Messrs. C. Collard and G. Lock, gardener to B. W. Cleave, Esq.; and any other black variety by Messrs. Crossman and G. Lock, the former having fairly good Black Alicante, and the latter immense bunches of Madresfield Court. Messrs. Crossman and Lock were also the prizewinners with Muscat of Alexandria. With any other white Grapes the winners were Messrs. J. Westcott and C. Collard. Mr. Iggulden had the best Melon, and was followed by Mr. T. Paul. Apricots were very fine, Messrs. R. Huxtable and G. Lock being the winners with these. Mr. Walker had the best Peaches, and was followed by Mr. R. Nicholas, the latter also taking first prize with Nectarines. Apples were very fine, the favourite culinary sort being Lord Suffield, and Bath Seedling the best dessert sort. The former were well shown by Mr. T. Lidbury, and the latter by Mr. J. Rawle. The vegetables shown were remarkably fine, and would be hard to surpass anywhere. Mr. T. Frost took the lead both with ten dishes and six dishes, Mr. Hill being second in the former, and Mr. J. Carver second in the latter. Other successful exhibitors of vegetables were Messrs. W. Greedy, E. G. Hardy, C. R. Rodwell, L. Patton, J. Dommett, C. Colgrave, H. F. Manley, C. Collard, and C. Vile.—VISITOR.

ERRATA.—In the account of Taunton Deane Show on page 175 the winner in Geraniums, &c., should be Godding, not Gidding, and in Dahlias, &c., Nation, not Newton.—D., Deal.

[We are not at all certain that the exhibitors' names in the supplementary report sent by a "Visitor" are correct. Correspondents will greatly oblige by writing the names of individuals as plainly as possible. If names of plants, fruits, &c., are only half written we can supply the deficiency, but it is obviously impossible for us to do so in the case of the names of exhibitors.]

#### ROYAL HORTICULTURAL SOCIETY. FRUIT AND VEGETABLE SHOW.

AUGUST 26TH.

AN admirable display of fruits was again provided in the conservatory at South Kensington on Tuesday last, and though the competition was not so keen in some of the classes as might have been desired, yet in the majority the entries were numerous. Plums, Peaches, and Nectarines were particularly abundant, and the collections were most praiseworthy in all respects. Of the other classes those for Tomatoes and Potatoes were the most strongly represented, and the quality of the exhibits throughout were highly creditable to the growers. This was the fifth of the series of eight shows so liberally provided by the Health Exhibition Committee, the remaining three being fixed for September 23rd and 24th, October 14th, 15th, and 16th, and October 28th, 29th, and 30th.

COLLECTIONS OF FRUITS.—In the value of the prizes offered—namely, £8, £6, and £4, for ten kinds of fruits, and the merit of the exhibits, this was the principal class in the Show, exciting much interest amongst the horticulturists present. Four competitors entered, but the Judges had little difficulty in determining which was entitled to premier honours, for the collection from J. H. Rolls, Esq., M.P., The Hendre, Monmouth (gardener, Mr. T. Coomber), was of extraordinary quality in all respects, and easily gained the first position. Every dish was good, and several experienced growers did not hesitate to denominate the collection the best they had seen this season, an opinion with which we fully concur. The fruits represented were as follows:—The Grapes were Alnwick Seedling, large bunches and berries of wonderful colour, the bloom densely covering the berries; and Muscat of Alexandria, large even bunches of a fine, clear, handsome colour. A Smooth Cayenne Pine Apple weighing 8½ lbs., grandly proportioned, with large pips, and superbly ripened; Hendre Seedling Melon, a large globular fruit of 6½ lbs., and beautifully netted; Pitmaston Orange Nectarines, large and of fine colour; Stump the World Peaches, very large; Negro Largo Figs, well ripened; Hemskirk Apricots, handsomely ripened; Reine Claude Violette Plums, beautiful and good; Williams' Bon Chrétien Pears. The second place was accorded to Lady Henry Somerset, Eastnor Castle, Ledbury (gardener, Mr. W. Coleman), who, though several points behind the first collection, had some fine fruits, which rendered Mr. Coomber's victory the more commendable. The Ledbury dishes were Gros Maroc Grapes, large even bunches and berries, bearing a dense boom, that was, however, very slightly rubbed in one or two parts of the bunches. The Muscat of Alexandria Grapes were well ripened, but not quite so large as those in the preceding collection; Smooth Cayenne Pine was large and handsome, the other sorts being Moorpark Apricots, Pitmaston Orange Nectarines, Brown Turkey Figs, Royal Kensington Peaches, very large; Kirke's Plums, and Morello Cherries. The third place was secured by Messrs. Rothschild, Gunnersbury, Acton (gardener, Mr. J. Roberts), who had fine Foster's Seedling and Gros Maroc Grapes, and handsome Victoria Nectarines. These three collections formed a fine display of well-grown, clean, handsome fruits, which were much admired during the afternoon by the numerous visitors.

PINE APPLES.—There were not a large number of these shown, but several very fine fruits were contributed. The best pair were from H. J. Atkinson, Esq., Gunnersbury House, Acton (gardener, Mr. J. Hudson), two superb examples of Smooth Cayenne, weighing 7½ and 6½ lbs. respectively, beautifully proportioned, and well coloured. Mr. Coomber had to be content with the second place in this class for rather smaller fruits, but finely ripened. The third prize was adjudged to Mr. J. C. Mundell, Moorpark Gardens, Rickmansworth, for rather small but well ripened fruits of Black Jamaica and Queen.

MORELLO CHERRIES.—The competition was extremely keen in the class for a dish of Morello Cherries, no less than eleven entering. Mr. Coleman took the lead with handsome fruits like small Plums, being closely followed by the Earl of Harrington, Elvaston Castle, Derby (gardener, Mr. J. H. Goodacre), and Egerton Hubbard, Esq., Leonards Lee, Hastings (gardener, Mr. S. Ford), all staging good fruits, but slightly smaller than those in the first place.

Figs were poorly shown as regards numbers, the only two dishes being from Charles Eyre, Esq., Welford Park Newbury (gardener, Mr. C. Ross),



who was awarded premier honours for fine fruits of Brunswick and smaller examples of White Marseilles.

**PLUMS.**—An important portion of the display was formed by the entries in the four classes devoted to Plums, and the majority were marked by more than usual merit, though some were a little deficient in ripeness. For a collection of varieties, the number not restricted, there were four lots, or a total of fifty-four dishes. Roger Leigh, Esq., M.P., Barham Court, Maidstone (gardener, Mr. Haycock), won the leading position with a splendid collection of nineteen varieties, mostly of great size and finely ripened. The sorts represented were as follows:—Bryanstone Gage, White Magnum Bonum, handsome; Victoria, large; Transparent Gage, Prince of Wales, Old Gage, Jodoigne Gage, Kirke's, Jefferson, fine; Black Diamond, very large; Autumn Compôte, Reine Claude de Bavay, Belgian Purple, Bradley's Gage, Boddaert's Gage, Coe's Golden Drop, Pond's Seedling, handsome; and Prince Englebert. Mr. Goodacre was placed second with smaller but good fruits, represented by twenty-one dishes, of which the best were Pond's Seedling, Victoria, Prince Englebert, Washington, Kirke's, and white Magnum Bonum. T. Somers Cocks, Esq., Thames Bank, Marlow (gardener, Mr. A. G. Bridgeman), was third with fourteen dishes, mostly fine fruits, especially notable being Washington, Nectarine, and Cox's Emperor, which were of considerable size. Two lots of six dishes, dessert varieties, were staged. E. M. Welson, Esq., Hanger Hill House (gardener, Mr. E. Chadwick), being first with clean, well-ripened fruits of moderate size of Green Gage, Kirke's, Jefferson, Prince of Wales, Washington, and Bryanston Gage. Mr. Bridgeman had the second collection, Washington, Jefferson, and Kirke's being handsome. In the class for six culinary varieties, the last-named exhibitor took the lead with Magnum Bonum, Nectarine, Washington, Diamond, Jefferson, and Victoria, all fine fruits. The Earl of Normanton, Somerley House, Ringwood (gardener, Mr. J. H. Richards), was third, having Denyer's Victoria, Washington, and Diamond in good condition. The class for three varieties evidently snited a greater number of exhibitors, for six entered, Mr. Bridgeman being again to the fore with Washington, Jefferson, and Kirke's, beautiful samples of these varieties. Mr. Coleman followed closely, showing Green Gage in place of Washington, the other varieties being the same as those in Mr. Bridgeman's collection. Mr. Chadwick was third, his best dish being Washington. There were also seven entries with one dish of the highest flavoured Plum, Mr. Chadwick taking the first place, followed by Mr. Bridgeman, and J. Norris, Esq., Castle Hill, Bletchingley (gardener, Mr. Holliday), all showing Green Gages, well ripened.

**PEACHES.**—Some remarkably fine Peaches were contributed by the eight exhibitors in the class for three varieties, six fruits of each, and Mr. Haycock easily won the principal prize with grand examples of Barrington, Walburton Admirable, and Early Louise, large handsome fruits. Mr. Roberts secured the second prize with Belle Bauce, Grosse Mignonne, and Prince of Wales, not quite so large as the preceding, but well coloured. Mrs. Vivian, Singleton, Swansea (gardener, Mr. J. Harris), followed with highly coloured fruits of Early Louise, Dr. Hogg, and Bellegarde. There was the same number of entries with one dish, Mr. Haycock again leading with extraordinary fruits of Barrington over 4 inches in diameter. Mr. Coleman was second with a dish of finely coloured Bellegarde, and Mr. Harris took the third place with the same variety in similar condition, but slightly smaller.

**NECTARINES.**—The competition was keen in the two classes for Nectarines, seven collections of three varieties being entered, all very near in merit. Mr. Roberts was placed first with Lord Napier, Pine Apple, and Victoria, all handsome fruits. Mr. Coleman was adjudged the second place for Pitmaston Orange, Stanwick Elruge, and Albert Victor, very few points behind the others. G. Butler, Esq., Warren Wood, Hatfield (gardener, Mr. Aslett) was third with Stanwick Elruge and Humboldt, fine; and an extra prize was awarded to Mr. Goodacre for small but ripe fruits. In the one variety class there were nine exhibitors, Mr. Aslett securing the chief position with beautifully ripened fruits of Pine Apple; Mr. Holliday following with the same variety, the third-prize dish being Lord Napier, but we did not obtain the exhibitor's name.

**APPLES AND PEARS.**—A class was provided for Apples, three early varieties, six fruits of each, and the prizes were well contested, no less than ten lots being staged. Mr. Haycock was awarded the leading prize for neat examples of Devonshire Quarrenden, Emperor Napoleon, and Duchess of Oldenburgh. Mr. Ross was second with smaller fruits of Red Astrachan, Mr. Gladstone, and Early Harvest. Mr. Ford was third with Red Astrachan, Worcester Pearmain, and Red Hawthornden. Pears were not so numerous, only six dishes being entered, Mr. Goldsmith leading with Williams's Bon Chrétien, well ripened; Mr. Roberts and Mr. Goodacre following with the same variety nearly as good.

**MISCELLANEOUS FRUITS.**—In previous schedules the class for miscellaneous fruits has been restricted to those not specially provided for in other classes, but on this occasion there was no such restriction, and in consequence there appeared to be some misunderstanding as to what was required. Premier honours were adjudged to Mr. Ford for a collection of Melons, including Scarlet Premier, Little Heath, Bellamore Hybrid, and a seedling, the last-named being beautifully netted. Mr. Coleman was second with a dish of fine Nonpareil Citrons; Mr. Goldsmith third with finely coloured Viard Apricots, and an extra prize was awarded to Mr. Chadwick for a really miscellaneous collection of Figs, Peaches, Plums, Pears, Currants, &c. Only one dish of Strawberries was exhibited—namely, the small conical but highly coloured Quatre Saisons from Mr. Roberts.

**TOMATOES.**—In addition to the classes enumerated in the schedule two special classes were provided for Tomatoes, so that collectively the display was extensive, and the exhibits generally were of considerable merit. A dozen competitors entered the class for a dish of twelve Tomatoes, the principal award being secured by Dr. Baber, The Deodars, Meopham, Kent (gardener Mr. R. Phillips), who had magnificent fruits of Phillips' Perfection, large, even, and bright scarlet in colour. Closely following was the Earl of Radnor, Longford Castle, Salisbury (gardener Mr. H. W. Ward) who had Hathaway's Excelsior in admirable condition, and Mr. Ross was third with Hackwood Prolific, even, and of fine colour.

Messrs. J. Carter & Co., Holborn, offered three prizes for six dishes of Tomatoes, to include Dedham Favourite, Carter's Green Gage, and Vick's Criterion. Mr. R. Phillips took the lead with a most creditable collection of

handsome fruits, representing Green Gage, Dedham Favourite, Vick's Criterion, Phillips' Perfection, Trophy, and Large Red. Mr. John Gilmour, Seacox Heath, Hawkhurst, Kent, was second with handsome Stamfordian, Wheeler's Prolific, Glamorgan, and the other varieties named in the class. Mr. Stephen Castle, West Lynn Vineyard, Norfolk, was third with smaller fruits, having in addition to the stipulated sorts Hathaway's Excelsior, Old Red, and a seedling. Messrs. J. C. Wheeler & Sons, Gloucester, offered two prizes for a dish of Wheeler's Prolific Tomato, and the first was gained by Mr. Stephen Castle with good fruits, slightly corrugated, but of fine colour; and Mr. Gilmour was second with less even samples.

**POTATOES.**—There was a capital display of Potatoes in the one class devoted to them, nine collections of twelve varieties being staged, all clean even tubers. The leading position was accorded to Mr. C. Herrin, The Gardens, Chalfont Park, Gerrard's Cross, who had most praiseworthy samples of Magnum Bonum, Reading Russet, Snowdrop, Vicar of Laleham, Prime Minister, Cardinal, Beauty of Hebron, Radstock Beauty, Sunrise, Cosmopolitan, The Dean, and Veitch's Ashleaf. Mr. Ross took the second place with a collection very slightly inferior to the first, and had especially good dishes of Reading Russet, Magnet, Red Emperor, Productive, Aspirant, M.P., Prizetaker, First and Best, and Lifeguardsman. Mr. Ford was a good third, having Purple King, Lady Truscott, and Sutton's Early Regent, very fine. Several smaller classes were unrepresented, but there were seven exhibitors of half a peck of Onions for pickling, Mr. C. F. Prangnell, Kensington and Chelsea Schools, Banstead, being first with Silver Ball, neat and regular. Mr. Ross was second with Silver Skin, and Mr. C. Osman, South Metropolitan Schools, Sutton, was third with the same variety. There were also three exhibitors of six Vegetable Marrows, Col. W. P. Talbot, Glenhurst, Esher (gardener, Mr. C. J. Waite), being first with Moore's Vegetable Cream, Long White, and Prince Albert, all fine samples. Mr. Osman was second with Custard Marrow, Muir's Prolific Hybrid, and Green Striped. Mr. Mundell was third with older fruits. Capsicums, Gherkins, and Salads were not shown in competition.

#### COMMITTEES.

Gladioluses and Dahlias again constituted the most prominent attractions of the groups of plants and flowers exhibited before the Floral Committee. The extensive collections of these handsome flowers from Langport and Slough were exceedingly bright and beautiful in both cases, representing a large number of choice varieties. The Fruit Committee's duties were not very heavy, as a few Melons and Messrs. Carter's Tomatoes were the principal exhibits.

**FRUIT COMMITTEE.**—Present: John E. Lane, Esq., in the chair, and Messrs. Philip Crowley, Charles Ross, G. Goldsmith, G. Bunyard, Sidney Ford, A. Howcroft, J. C. Mundell, R. D. Blackmore, S. Lyons, and Arthur W. Sutton.

Messrs. J. Carter & Co., High Holborn, exhibited a large number of Tomatoes in 10-inch pots, and the majority of the plants were well fruited, meriting the cultural commendation awarded for the collection. The varieties chiefly shown were Dedham Favourite, which was in excellent condition, Green Gage, Criterion, Holborn Coral, and Holborn Gem, the last named a new variety with small round fruits produced very abundantly in bunches of five or six each. Of the ornamental small-fruited clustered sorts, Coral Pear, Red Currant, and Grape Shot were noteworthy for their long racemes of brightly coloured fruits, and several promising seedlings were also represented. New Melons were shown by Mr. Ross, Welford Park Gardens, Newbury; Mr. J. Gash, Swainston, Newport, Isle of Wight, and others; but none of them was considered sufficiently meritorious for a special award, though votes of thanks were accorded to the exhibitors. Mr. James, Castle Nursery, Lower Norwood, sent fruits of a "seedling" Apple which was determined to be Astrachan. Mr. Thomas Bowie, Chillingham Castle Gardens, showed some samples of a new Red Currant named New Defiance, very large in berry and apparently prolific, but so damaged in transit that no opinion could be expressed concerning its merits. Mr. H. Clarke, Blenheim Palace Gardens, sent a dish of a seedling Potato named Clarke's Beauty, a neat kidney variety, white with purple eyes. A vote of thanks was accorded to Mr. S. Ford, Leonardslee Gardens, for highly coloured specimens of Siberian Crab, and some fruits of an Australian Runner Bean, which is very prolific, having narrow pods more like a Dwarf Kidney Bean. Messrs. J. E. Lane & Sons, Great Berkhamstead, exhibited fifteen dishes of Apples of good quality, for which a vote of thanks was passed. T. W. Boord, Esq., Ockenden, Duckfield (gardener, Mr. M'George), sent fruits of a finely flavoured Fig said to be a seedling and to have been grown out of doors. It was much in the way of Brunswick, and the Committee requested that be shown again with its own foliage.

A first-class certificate was awarded for

*Cucumber Purley Park Hero.*—This fine Cucumber is the result of a cross between Model and Sutton's Improved Telegraph, and has been shown on several occasions in good condition, its character being now well fixed. It is neat in form, slender and well proportioned, with a few scattered spines, and a slight bloom. It is also extremely prolific and of good constitution.

**FLORAL COMMITTEE.**—Present: Section A.—Mr. James O'Brien in the chair, and Messrs. J. Dominy, J. Hudson, H. Herbst, and J. Laing. Section B.—Shirley Hibberd, Esq., in the chair, and Messrs. G. F. Wilson, W. Bealby, G. Duffield, J. James, H. Turner, S. Ford, A. Howcroft, J. Douglas, H. Bennett, and H. Cannell.

The Gladioluses from Messrs. Kelway & Son, Langport, Somerset, were extremely fine, and, as at the previous meeting, a great number of varieties were represented, about 150 spikes being staged. A selection was then made, and they need not be repeated now; suffice it that the silver-gilt medal awarded was well deserved. Messrs. J. Carter & Co. had an extensive and beautiful group of Asters in pots, about 150 plants in 5-inch pots being shown and honoured with a bronze medal. The plants varied in height from 2 feet in the pyramidal varieties to about 6 inches in the dwarf Chrysanthemum-flowered forms, the latter being extremely pretty in pots with large rose, purple, red, lilac blush, white, and crimson flowers. An intermediate strain is afforded by the Pöony-flowered varieties, which are not so tall as the pyramidal, nor so dwarf as the last named. All were flowering freely,



and their value for decorative purposes could not be over-estimated at this time of year.

Mr. C. Turner, Slough, had some stands of Show and Fancy Dahlia blooms, about ninety being staged of many varieties, their merit being recognised by the award of a bronze medal. Some of the most notable varieties were the following—Mrs. Douglas, scarlet; Prince of Denmark, maroon; Mrs. Gladstone, blush; Mr. Harris, dark scarlet; Royal Queen, white tipped with purple; Seraph, blush; Lucia, white with a purple tinge; Cecilia, yellow; Mr. Foreman, bright purple; Charles Lidgard, orange tipped with red; Juliet, white with purple tint; and Loadstar, dark crimson. A plant of *Lilium auratum rubro-vittatum* was also shown by Mr. Turner, and a vote of thanks was accorded for it. The petals are narrow and widely spreading, with a dark red central band in each, which gives the flower a most distinct appearance.

Mr. T. S. Ware, Hale Farm, Tottenham, contributed a beautiful collection of choice single Dahlias, selections from a large number of trials, and distinguished by their bright, pure, and rich colours, and the excellent form. Especially fine were the following:—Mrs. Bowman, warm purple; Christine, rich pink; Mrs. Castle, distinct dark crimson scarlet; White Queen, pure white; Mrs. Cullingford, yellow; Indian Yellow; Lucy Ireland, rich crimson; Negress, deep maroon; and *Lutea grandiflora*, pale yellow. Bouquet or Pompon varieties were represented by some neat blooms. A box of a scarlet bedding variety, something in the way of a small Juarez, was shown under the name of General Gordon; it was very bright and effective. A group of *Pancratium maritimum* flowers, with the orange scarlet *Montbretia crocosmæflora*, the pale yellow *Lilium neilgherrense*, the orange red *Lilium superbum*, and the pure white *Milla biflora* was very attractive from the same firm.

Messrs. H. Cannell & Sons, Swanley, showed a pretty collection of single star-shaped Dahlias, very graceful and bright, particularly good being Mr. Moore, maroon; Midget Improved, scarlet; Sunset, yellow and red; Roundity, scarlet; and Curiosity, buff. A neat bouquet variety named Golden Gem, of a bright clear yellow hue, was also very pretty. Flowers of *Abutilon Thompsoni* plenum, with well-developed double flowers, will no doubt prove an acquisition, and may probably lead to a new race of *Abutilons*. Some handsome seedling *Gloxinia* flowers, large, finely formed, and varied in colours, were also shown, together with several enormous double Sunflowers, for which a vote of thanks was awarded. Messrs. Rawlings Bros., Romford, sent a box of Show Dahlia blooms, large, well-shaped, and of good colour. G. F. Wilson, Esq., Weybridge, exhibited stems of *Lilium tigrinum* fl.-pl., 8 feet high, bearing numerous large double flowers, and of *L. tigrinum jucundum* 7 feet high, also with several flowers. Messrs. Lane & Son sent flowers and fruits of the Japanese Rose, *Rosa rugosa* and *rugosa alba*. Mr. Aslett, Warren Wood, showed a plant of a large double pink seedling *Tuberous Begonia*, of good habit and free. Mr. R. H. Munday sent a collection of double and single *Zinnia* blooms, very fine and bright; and Mr. Bealby, Roehampton, sent some fine double *Begonias*.

First-class certificates were awarded for the following:—

*Dahlia Mrs. Douglas* (Turner).—A beautiful Show variety, very neat and well-proportioned, of a bright clear scarlet colour.

*Dipladenia Elliotti* (Lucombe, Pince & Co.).—Flowers of great size, of a soft yet bright rose tint. Very handsome and apparently floriferous.

*Besseria elegans* (Ware).—A pretty bulbous plant with rush-like foliage, and terminal clusters of eight or nine flowers each, 1½ inch in diameter, with narrow spreading petals, scarlet on the outer surface, buff on the upper side of the petals, with a central and two marginal scarlet lines on each.

*Gladiolus St. Gatien* (Kelway).—An effective variety, with massive spikes and large flowers of a peculiar crimson-scarlet hue, with a narrow white line in the centre of the petals and a broader one in the lowermost petal. The portion of the spike bearing expanded flowers was over 18 inches in length.

*Begonia Souvenir de W. Saunders* (Laing).—A double scarlet *Tuberous* variety, with very full globular brightly coloured flowers. It is of good habit, compact and free.

*Begonia Queen of the Bedders* (Cannell).—This was shown with another variety named King of the Bedders, as being especially suited for bedding purposes; dwarf, strong, very floriferous, with bright flowers of moderate size, standing strongly above the foliage, and not drooping as in many of the large-flowered varieties. The one certificated is of a beautiful rose shade, very clear and bright, and it well merited the honour accorded it. The other is scarlet, equally free, but with slightly smaller flowers. They will no doubt form a type most useful for bedding purposes.



#### KITCHEN GARDEN.

*Cauliflowers*.—Early spring Cauliflowers are much valued by many, and to have them as early as possible the seed must be sown the preceding autumn. Now is a suitable time to sow the seed, and the old Early London variety is still a good one. The seed should be sown on a south border, and when the plants are large enough they can be transferred to their winter quarters. We sow our seed in drills, and avoid crowding, as only dwarf robust plants will stand the winter well. A pinch of Veitch's Autumn Giant seed should also be put in now, as the plants from this will head immediately after the Londons, and come in earlier than by sowing in spring.

*Endive*.—A good and last batch of this should be sown for an all-the-winter supply. The Broad-leaved Batavian is the best of all. It produces splendid heads of the highest quality, and they are uncommonly hardy. Sow the seed thinly on good ground, and when the plants are ready for transplanting thin them out, and allow enough to stand in the seed beds to form a crop, and dibble the others in on any vacant spots. We prefer a dry sunny place for our winter Endive, as in such a position it does not suffer much from damp or slight frost.

*Lettuces for Winter*.—These may be treated in all respects like the Endive. Bath Cos, Hammersmith, and Moor Park are suitable varieties. There is another, too, which may be noted here for the first time, and that is Jefferies' Little Queen, the smallest-growing of all the Cos family, dwarf and most convenient for putting in frames, very hardy in constitution, and superb in quality.

*Radishes*.—The China Rose is a splendid winter sort, the best in my opinion. We sow it largely now on one of our borders to give a supply from October until March, and it never fails to do this.

*Cabbages*.—More seed may be sown, and as the young plants from the first sowing have now half a dozen or more leaves, the largest may be drawn up and dibbled-in to their bearing quarters. The latter should be deep well-manured ground, and the plants be put in about 18 inches apart each way. Spring Cabbages are an important crop, and it is best to sow two or three times at intervals, and plant out under the same rule to meet the vagaries of the winter.

*Peas*.—Late ones just coming into bloom are very apt to become dry at the root at this season, and if they do mildew will soon follow, and further, the crop will be severely checked; but care should be taken that nothing of the kind occurs, as it is always easy to prevent evils of this sort by timely and copious watering. Midseason Peas are now nearly over, and we are clearing away our crops fast, but before throwing away the straw we pick off all the seed and put it away in a dry shed until a wet day, when it will be cleaned. The warm weather of June, July, and August has suited Pea seed admirably, and we never had a better sample. Of late we have gathered about thirty bushels of seed pods, and this all from our surplus stock. Webb's Wordsley Wonder, Paragon, and Duke of Albany have proved excellent Peas with us this season, and the same may be said of some of Messrs. Carter's varieties, especially Telegraph.

*Vegetable Marrows*.—Many of these which were not wanted for the kitchen have become yellow and ripe, and few young ones will form so long as they remain on the plants, but by cutting all the yellow ones off a large and fresh hatch of fruit will soon form and be most useful in the autumn.

*Winter Spinach*.—A large patch of the Prickly-seeded Winter Spinach should be sown at once, as it is important that the plants be robust and the leaves well developed before winter. Put it in a piece of land which was well manured for some spring crop. Sow thinly in drills 18 inches apart, and try and sow as much as possible, as this is one of the most delicious and useful of all winter vegetables. Hoe all weedy surfaces, and take the chance so long as the sun is powerful of killing these by this means. Keep all winter greens free from shading of every description. Where they are growing between Potatoes turn the tops of these to one side where they are inclined to run over and smother up the greens.

#### FRUIT FORCING.

*PEACHES AND NECTARINES*.—*Early House*.—The trees will by this time have completed their growth and the buds plump. The months of September and October may be considered their resting period, and in order to give them the full benefit of the few weeks that remain before they are again excited into growth means should be adopted to keep them as cool as possible. If they are trained under fixed roofs all the ventilators and doors may be kept constantly open, and in the event of the flower buds becoming very prominent some of the squares in the roof should be removed, so as to increase the current of air and reduce the temperature of the house. When the roof lights are moveable, as they ought to be, they may be taken off, as exposure to dew and autumnal rains will benefit the roots and foliage, when the trees may be finally pruned—i.e., after the leaves fall, but the weak and useless wood having been cut away immediately after the fruit was gathered, very little, if any, autumn pruning will be required. The soil of the borders must not be allowed to become dry, as many trees are permanently injured by want of water, and it is owing to this cause mainly that the buds drop in the spring when they should be advancing. If properly drained no danger need be apprehended from overwatering, and the mulching should remain on until the time arrives for replacing it with the annual top-dressing of rich compost. In badly drained borders Peach trees send their roots down in quest of moisture, and persist in throwing up breast-wood and watery growth when the trees should be at rest. To remedy this evil carefully lift the roots and relay them in fresh soil resting on good drainage, and this should be done when the foliage shows signs of ripening, but before it falls from the trees.

*Late Houses*.—The roots of trees in late houses having the run of external borders, and now swelling their crops, will, if the weather be dry, derive much benefit from supplies of diluted liquid manure and an additional mulching of manure, especially when the trees are carrying heavy crops. When the fruits have all been gathered, treatment the reverse of that advised for the early house may be necessary to insure the proper maturation of the wood. If the house is heated it will be advantageous, gentle fire heat with a free circulation of air being of great



advantage to late varieties, as Walburton Admirable, Princess of Wales, &c., but midseason varieties, unless the weather be very unfavourable, will ripen their wood without such aid.

**FIGS.—Early-forced Trees in Pots.**—The second crop of fruit having been gathered the trees will need cooler and drier treatment to secure thorough maturation of the wood, especially the points of the young shoots that will produce ripe Figs next April and May. If the foliage has become infested with spider or other insects to which the Fig becomes a ready prey when ripening off a second crop, their destruction must be rendered complete by the free use of the syringe or garden engine, and the application of insecticides when scale has obtained a footing on the trees. It is imperative that this matter be attended to so as to have the trees in a clean healthy condition and the foliage ripened in good condition. The season has been so favourable for forcing operations that the wood is in capital condition; hence the roof lights may be removed, which is preferable to taking out the trees, or, where the roof lights are fixed, the trees may be stood outdoors as advised in a former calendar.

**Succession Houses.**—Those houses in which the second crop is ripening will now require careful attention. The fruit as it approaches maturity will be greatly improved in colour and quality by full exposure to light and a free circulation of dry warm air by night and day, but a check to the flow of the sap must be avoided by a due supply of moisture to the roots, feeding weakly trees with tepid liquid manure. This should be supplied on fine mornings when external conditions will admit of full ventilation, as condensed moisture is at all times, but particularly in late summer, unfavourable to the ripe fruit. As shoots that have reached the full extremity of the trellis become clear of fruit, and successional require the space, they may be cut out to let in light and air to those retained, but the points of the latter must neither be stopped nor drawn down from the glass.

**CHERRY HOUSE.**—The roof lights should be removed so as to admit of the trees being wholly exposed to atmospheric influences. If, however, this be impracticable the house should be opened fully, and kept so constantly, and in this case neglect not to give the necessary syringing to keep the foliage clean and healthy, and on no account must there be any deficiency of moisture at the roots. Until the buds are well developed and the leaves naturally assume a mature state, keep the roots well moistened and the foliage as clean as possible. Trees in pots will be stood outside in a sunny position, and have the pots protected from the direct rays of the sun, duly supplying with water, and syringing occasionally so as to keep the foliage clean and healthy.

#### PLANT HOUSES.

**Clerodendron fallax.**—This is one of the most beautiful stove or intermediate house plants that can be grown, for its large heads of bright scarlet flowers can be had during every month in the year. This can be accomplished by sowing a little seed every two months, and growing half the plants under stove and the remainder in an intermediate temperature for a time, so that they will come into flower successionally. At no season are they so valuable as during the autumn, winter, and spring months, for their bright flowers at that season are very striking. Plants that have been raised for this purpose will now be ready for 5-inch pots. Employ as compost good loam, one-seventh of manure and sand. The soil should be pressed firmly into the pots, so as to induce a sturdy dwarf growth. If any of the plants are inclined to flower too early to be of service, pinch out the point, and compel them to break again into growth and flower some weeks later. This should be avoided if possible, for the heads of bloom are never so large. When the pots are full of roots feed liberally, in order to sustain the health and vigour of the plants. This plant is much more serviceable and easier to manage when grown from seed than cuttings. If seed is sown at the present time and the plants grown on afterwards in brisk heat, they will come into flower at a time when they will be most valuable.

**Clerodendron Balfourianum.**—Plants that are intended for forcing early into flower will, by this time, have produced good firm wood. They should be grown fully exposed to the sun, and in a somewhat cooler and drier atmosphere than that maintained in the stove. When the wood is thoroughly ripe water should be gradually withheld from the roots, so as to induce them to rest early, which is the secret of success in early forcing. Plants that have been grown from cuttings and are now in 6-inch pots, especially for spring flowering, will scarcely be so well ripened as those from which the cuttings were taken. These should be assisted in every possible way by feeding, and the shoots of the plants must be close to the glass, fully exposed to the sun, for unless the wood is firm and well matured a good crop of flowers cannot be expected. A batch of the pure white double sweet-scented *C. fragrans* will come in useful if rooted at once in 3-inch pots and allowed to flower in them. This plant is very shy-flowering, and will persist in flowering unless very much confined at the root.

**Greenhouse Rhododendrons.**—These are very useful plants, but not so well or generally cultivated as they deserve to be. To keep them in the greenhouse the whole year round is a great mistake, for when free and healthy they are liable under such treatment to burst again into growth instead of forming flower buds. As soon as growth is completed they should be gradually hardened and placed outside, in a shady position at first, or the sun will brown and disfigure the foliage. It is a wise plan as growth approaches completion to harden and expose them gradually to more light and air, until they can be finally placed outside to set their flower buds and to ripen and mature their growth. By this means a greater number of flowers will be produced, and dwarf compact plants in

comparison to what they would be if kept inside the whole year. The shoots that fail to flower generally become straggling, and in time have to be cut hard back. As soon as it can be perceived which shoots will not flower they should be shortened to firm wood, and they soon burst four or five growth buds, which can afterwards be readily regulated by pinching, so that the shoots which flower will have a chance of starting freely away. Most of the varieties break freely if the shoots are twisted or bent backwards, especially those of which Princess Alice is a type. This is one of the sweetest and most useful of Rhododendrons, and will bear gentle forcing to bring it into flower during early spring. Those having plants that are not outside should harden them and place them outside for the next two months, or until the approach of frost. These remarks apply to young vigorous plants, for old plants that have firm hard wood and confined at the roots usually make short sturdy growth and flower freely.

**Gladiolus Colvillii alba.**—The Bride, as it is now known, is a charming variety for cultivation in pots either for cutting or conservatory decoration. Bulbs that flowered early in pots, if they have been taken care of, should now be potted, and will flower again as freely as newly purchased bulbs. A number of bulbs should be placed in each pot in any good moderately rich soil. After potting cover them with 2 or 3 inches of ashes outside or in a frame to prevent watering until they commence to grow and root. Late batches should be potted as soon as the roots can be obtained and plunged in ashes outside, where they can remain if needed through the winter. If not covered too deeply and the growths issue through the ashes frost will do them no injury, for they are perfectly hardy, for when wanted for late flowering the bulbs are better outside during the winter unless a frame can be devoted to them, but this is not necessary when they are wanted only to precede those in the outside borders.

## THE BEE-KEEPER.

### THE BEST HIVE.

#### A CHAPTER FOR BEGINNERS.

THE numerous queries on bees and which is the best hive is evidence that many people are perplexed in this matter, and to aid them I will state a few facts. The first thing to decide upon is what sort of bee should be kept. In consequence of so much foreign blood being imported, and the difficulty to preserve the purity of any variety, it will be wise not to select any particular sort until some experience is gained with the variety common in the district. Afterwards a trial of others may be made, and may be found an improvement if care is taken to introduce queens of the new variety to all stocks, these queens to be raised from original queen under the most natural circumstances possible. The bee-keeper must now forget all that has been said for or against these varieties and test them for himself. I have just come home from a moor where there are upwards of 400 hives. The best in every respect is one of the Ligurian queens supplied by Messrs. Neighbour last autumn and mentioned by me in a previous letter. They refute the opinions that they do not store surplus honey nor work upon Heather, for there they were doing both, and if I could believe my own eyes to a far greater extent than any other, which were working well from every conceivable shape and form of hive.

Were I only beginning bee-keeping instead of being compelled to almost discontinue it, and with the knowledge I possess, notwithstanding all that is said in favour of frame hives and against straw ones, I would be content with a large percentage of straw and Stewarton hives. Frame hives I would have, but not to the exclusion of straw hives nor to the overwhelming of the Stewarton that has been proven so long to be the best for quantity and quality of honey, hence has yet to be surpassed. During the past two weeks I have during my peregrinations examined several thousand frame, straw, and Stewarton hives. If the results are to be taken as a criterion as to which are the best hives, then to the two latter does the palm belong. In one moor I saw straw hives tiered to 5 feet in height, including the supers, which are now nearly completed. The weight of the whole, unknown to me, must be great. Stewartons were there too, seemingly, as aspiring as the more rustic straw ones. All, if this weather continue for ten days more, will tell a tale. In private apiaries, where the Stewarton is the favourite, the breeding boxes were surmounted with supers containing from 50 to 200 lbs. of the finest quality, which is always the case where supers are well raised above the brood nest, and that of sufficient size to obviate the necessity of excluder zinc, or queen being crowded out of brood nest, stimulative feeding, or the use of the extractor at any time. While it is yet premature to give the weights of hives now at the moors I may be permitted to quote one instance out of many in 1879. A bee-keeper started the season with four straw hives; by the month of September he sold £28 worth of honey, selling it at 1s. per lb., and had a large quantity for home use, besides increasing his stocks, which were left very heavy. Two of his top swarms were in doubled



hives 21 inches wide by 14 inches deep, and weighed, after the honey-gathering had ceased a considerable time, 186 lbs.

The beginner will now observe that great results are only to be obtained when suitable hives are obtained. If anything like success is wanted he must have large hives and much larger than the recognised standard one, and of proper form, so that the greatest progress will be made with the least loss. Again I repeat, Avoid stimulative feeding, particularly after August. Depend upon it that honey naturally gathered is the best food for bees. Feeding bees, unless during a scarcity in the summer months, is at the best a questionable proceeding, leading often to the deposition of the queen at a time the loss is irreparable. I have just been examining a hive with a pretty fertilised queen, but from some reason or other did not commence laying until five weeks after fertilisation. The bees seemed alike indolent, as doubtless an active queen makes active bees. They seemed, however, conscious of the inability or inactivity of the queen, and were busy raising numerous queen cells, which, had they had eggs, would doubtless have raised queens and deposed the now prolific and laying one. This is but one instance of hundreds which I could quote, but sufficient to warn the beginner never to do anything that is likely to induce inactivity in the queen during the spring months, and which stimulative feeding in the autumn is one of the worst things to do, promoting the queen's early deposition.

When the beginner is perplexed through conflicting advice he must then use his own judgment, but in such a way that he does not launch into expenses nor entirely ignore experience, remembering that the more bees (when room is given) the more honey, no matter whether the district is a good or inferior one. Hives managed properly have never a paucity of bees in autumn. In such hives as the Stewarton or the large straw hives referred to, the bees do not require to be induced to breed late in autumn, because there is always sufficient brood in the proper season to keep up any loss that may be sustained. Then from the very fact of the superior winter arrangements they are in a good position to start under favourable circumstances in spring without either feeding or that other questionable proceeding of spreading the brood.

The Stewarton hive is not only superior in many respects to other hives, but is decidedly the cheapest and most easily managed and the best for supering purposes. Your correspondent "P. H. P.," from his remarks on page 83, seems unfamiliar with the working of the Stewarton hive. Each super comb is moveable with its bar, and if ends are attached to the bar, as is often done, can be lifted from the super without the slightest cutting as easy as is the best devised frame, and is so commonly sold both in Edinburgh and Glasgow Italian warehouses. The entire super thus forms, as it were, a crate of sections of different length and weights, so far from being a disadvantage, is surely a manifest gain, permitting the customer a better choice of the quantity he would like to acquire. The great advantage of a Stewarton super once filled is in it being cheaply and easily packed for transmission either to a customer or to the honey merchant, who also finds in them a security from being crushed by the fingers and freedom from bleeding and dust, as is the case with sections so troublesome to pack and keep clean, while supers are more readily taken to by the bees and are more rapidly built and filled than sections.

Again, the non-interchangeability of the bars, saving to a like position of a similar hive, is as much in keeping with the laws of Nature as is the spherical form of the Stewarton. Who but the merest tyro would ever think of transferring a wide end honeycomb from its natural position to that of the centre of the brood nest? There are some who waste their time and ruin their hives by such questionable proceedings as spreading the brood, and, instead of attributing their failure to undue intermeddling, shift the blame to their hives or the foreign races of bees.—A LANARKSHIRE BEE-KEEPER.

**BEES IN A CHURCH.**—A correspondent writes: "An extraordinary discovery has just been made in the parish church of Stourmouth, near Wingham, Kent, a nest of bees being uncovered in the roof of the chancel. Its existence was known to the officials, but no idea seems to have been formed as to its size. The living has been held for many years by the Rev. Mr. Drake. Some time ago it came to his knowledge that a swarm had settled in the sacred building, but he would never allow their retreat to be disturbed. A few months ago, however, the Vicar died, and as the church had to undergo general repair, the bees no longer were allowed to remain in possession of their quarters. They were destroyed by fumigation, and on the honey being taken there was found to be nearly 2 cwt. of it. It is stated that during hot weather the honey used to drop down on the floor."

#### TRADE CATALOGUES RECEIVED.

De Smet Frères, Ledeberg-lez-Gand, Belgium.—*List of Palms.*  
W. Dobbie, 62, Preston Street, Faversham.—*List of Geraniums and Fuchsias.*

James Veitch & Sons, Chelsea.—*Illustrated Catalogue of Hyacinths and other Bulbous Roots.*

Dickson & Robinson, 12, Old Millgate, Manchester.—*Catalogue of Hyacinths and other Bulbs.*

Carter, Page & Co., 53, London Wall, City, E.C.—*Lists of Roses, Bulbs, and Fruit Trees.*

Edmund Philip Dixon, Hull.—*Catalogue of Bulbs, Vines, and Strawberries.*  
Dobbie & Mason, 66, Deansgate, and 22, Oak Street, Manchester.—*Catalogue of Bulbs.*

Emil Liebig, Dresden.—*Catalogue of Azaleas, Camellias, Rhododendrons, Ericas, and Roses.*

James Dickson & Son, 108, Eastgate Street, Chester.—*Catalogue of Bulbs, 1884.*

James Carter & Co., 237, High Holborn, London.—*Illustrated Catalogue of Bulbs and Winter and Spring Flowers.*

James Don, 20, Chapel Bar, Nottingham.—*Catalogue of Bulbs and Flowers.*



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Chrysanthemums (T. O.).**—If there is no stipulation in the schedule as to the length of the stems it does not matter how short they are, so that one stem only is seen rising from the soil. Dwarf plants as well as standards are limited to single stems, but in the case of the latter it is usually stated that they must be of a certain height, which is named in the schedule.

**Trimming Yew Hedges (Sussex).**—There is no better time for clipping Yew hedges than completing the work towards the end of August. Nearly all the finest hedges in the country are trimmed at that time; and as the practice has in many cases been adopted for upwards of a century, and the hedges are still in admirable condition, it is clear that they have not been trimmed at the wrong period of the year. To leave them till spring the hedges would have a rough appearance all through the winter, and no corresponding advantage whatever would be gained by the delay.

**Rabbit Traps (Derby, S.).**—We have made inquiries of the publisher and he has no record of any such traps as those to which you allude having been advertised in the Journal. Are you sure you have not made a mistake? We will readily aid you if you can give us more precise information that will lead to the identity of what is wanted.

**Cluster Pea (Dr. Stewart).**—The specimen sent is a variety of the Crown or Cluster Pea, the original of which is reported to have been brought from Egypt in tombs, and hence became known as the Mummy Pea. Your Pea is not, we think, the original kind, but a varietal form with rather smaller pale pink flowers. The Cluster Pea is still grown in some cottage gardens as an early Pea. It is, however, not very early, and the pods are small.

**Water Cistern (Irish Subscriber).**—As you find galvanised cisterns too expensive for collecting the water from your conservatory we scarcely know what to recommend. Stout wood cisterns lined with zinc would perhaps be cheaper; but the cheapest of all receptacles for the purpose are large petroleum casks that may be had from oilmen. They are very strong, and being saturated with the oil last for a lifetime. If one is not large enough two or more can be connected with pipes. We have them in use, and they answer their purpose admirably.

**Extirpating Horseradish (J. H. C.).**—We are sorry we know of no ready way of destroying this. It is one of the most difficult of plants to eradicate. Every particle will grow, and strong growths force their way through the hardest gravel walks. It will grow through your lawn with the greatest freedom. We have seen it force its way through asphalt paths and macadamised roads. We can only advise you to dig out all you can, and allow no subsequent growths to extend more than half an inch above the surface. By sedulously watching for these and cutting them promptly they will get weaker and weaker until they will give little further trouble. Probably if a few drops of sulphuric acid are poured on from where the tops are cut further growth will be arrested, but not, at the first dressing, prevented. The point to aim at is preventing any leaf-development, and then in time the roots will die.

**Heating Melon Pit (Journal).**—It would be best to take a pipe from the stove flow pipe along the front of the Melon pit, taking it to the end of the pit, and then bring it back as a return beneath the flow pipe, connecting it with the return pipe of the stove. We should make a sort of open flue wherein to have the pipes, the sides of which would keep up the soil of the



bed and keep the pipes clear. This would be the best disposition of the pipes for top heat; and for bottom heat, of which you say nothing, two rows of 4-inch pipes would be needed, surrounded and covered about 6 inches deep with rubble, above which you will need a foot of soil 12 to 15 inches distance from the glass for the growth of the plants, so that you will need to regulate the level of the pipes accordingly. The pipes should have a slight rise from the stove pipe to that point where the return is made, where should be an air pipe to let out the air and allow of the pipes filling with water, having a small tap, which can be shut when the pipes are filled with water, opening as needed to let out the air.

**Greenhouse Heaths** (*Idem*).—*Ericas Cavendishiana*, *ventricosa Bothwelliana*, *ventricosa alba*, *ventricosa magnifica*, *retorta major*, *inflata alta*, *inflata rubra*, *tricolor elegans*, *tricolor profusa*, *perspicua rosea*, *Shannoni glabra*, and *Fairrieana*.

**Cucumbers Failing** (*J. T. S.*).—Your Cucumbers are at a disadvantage in being shaded by the Melons, and it is just possible that the pollen has not got sufficiently dry for distribution, and consequently fertilisation has been defective. Apart from that, however, we consider the soil too light, while in all probability sufficient water has not been given to the roots. You say they have been watered "when dry," but when Cucumbers are growing freely, and especially in such light compost as turf soil and road scrapings, they must be watered before the roots are dry, or there is sure to be a collapse of either the foliage or fruit, or both. Mix some rough turfy loam and decayed manure together in equal parts, spread an inch or two of it on the bed, keeping this—indeed the entire mass of soil—constantly and decidedly moist; surface roots will then be produced, which can be again covered, and the plants will be invigorated.

**Watering Vines** (*Idem*).—The "watery" character of the varieties you name as compared with the Muscats is not the result of too much water having been given to the border, but because they are not highly flavoured Muscat Grapes. It is impossible for us to say whether you have unduly restricted the supply of water, as this can only be determined by a knowledge of the nature of the border, the condition of the Vines, and character of the weather in your district; you may safely however, we think, continue to give the same quantity, at least during bright weather, until the leaves show signs of changing in the autumn, maintaining at all times a healthy buoyant atmosphere. Do not place the muslin bags on the Grapes until they can no longer be left off without the fruit sustaining injury from wasps or flies.

**Exhibiting Fruit** (*J. E. W.*).—We have received the schedule. The wording of Class 31, "Collection of small fruit, six varieties, including red and white Gooseberries," we consider unsatisfactorily indefinite. From such a class Grapes and Melons at least should be excluded: if they are not, anything, even Pines, are admissible provided they be small." Most persons are aware that there are "small" Grapes and "small" Melons, but it is not customary to offer prizes for them; yet if those fruits are permitted in the class quoted the prizes should go to the smallest examples, as "large" ones would not be in accordance with the stipulations. This shows the unsatisfactory wording of the class in question. You will find sufficient has been said on the other subject this week.

**Removing Rose Trees** (*John Hopper*).—In accordance with your request we print your question and append our reply:—A rents a house and garden from B, and plants a quantity of dwarf Rose bushes. After a time A gives notice of his intention to quit. In the meantime B dies, and his executors intimate to A that he will not be permitted to remove his Roses at the expiration of his tenancy. A has no written agreement. Can A defy the executors and remove the Roses? Answer: If A is not a nurseryman he has no legal claim to the Roses; they are the property of the executors or representatives of the late owner of the garden, B.

**Gardenias and Eucharises** (*S. F.*).—So much depends on the condition of the Gardenias, and especially the state of the roots, that it is not easy to say whether your plants should be repotted or not. Assuming, however, that they will receive careful attention in watering, they may be safely transferred to pots just large enough to enable the fingers of the workman to pass freely round the balls of soil when in the fresh pots. A larger shift must be avoided. The soil, two-thirds turfy loam and one-third peat, with a little sand, must be pressed quite as firmly round the roots as the soil is in the present pots; and both that soil and the soil to be used must be in a pleasantly moist state, neither very wet on the one hand or dry on the other. The growths must not be shortened. Let water be applied with judgment and the plants be syringed twice a day in bright weather. A shelf near the glass in a stove will be a suitable position for them, as they need sun to harden the growth; yet a little shade must be afforded if needed to prevent flagging or scorching. In October they may be placed in the Cucumber house, and if they have been well managed they will flower in the winter. If there is any fear of mistakes being made in watering after potting, it would be safer to let the plants remain in their present pots plunged in others to prevent the roots drying. Assuming your Eucharises are strong and the pots filled with roots, keep them in the stove and well watered until the beginning of September, then remove them to a drier house, such as a vinery, reducing the supply of water—in fact, only giving sufficient to keep the foliage fresh. After five or six weeks of healthy rest place them in the Cucumber house or where they can have a night temperature of 65°, keeping the roots decidedly moist, and flowers will be produced in winter, always provided the plants are strong enough for flowering, and healthy. Bottom heat will be of assistance in promoting them flowering after the resting period.

**Mealy Bug on Vines** (*J. L.*).—There is no quick and easy method of extirpating this pest. A heavy washing with petroleum and water after cutting the crop would destroy many insects. A wineglass of the oil to two or three gallons of water is safe when incorporated by violent and constant agitation during use, provided it is applied towards evening, and the Vines are shaded the next day if the weather is bright. A mere sprinkling, as if played with the syringe, is of no use; it must be a forcible and a thorough drenching to be efficacious. The first matter to attend to in the autumn is to gather the leaves just as they are ready to fall from the Vines and burn them. This is far better than allowing the leaves to fall and scattering the insects in thousands, and providing for a future supply. After the Vines

are pruned, not the rods only, but every portion of the house must be thoroughly washed, and the surface soil removed from the border and fresh added. The rods should also be dressed with either a mixture of clay and tar or Murray's Vine composition, the efficacy of both these applications having been testified to by gardeners in our columns. It would not injure the Vines, assuming the wood is hard and ripe, to throw the house open to the frost in winter, unless the weather should be unusually severe. Nor would this be a certain method of banishing the insects.

**Mushrooms Failing** (*W. G.*).—The position under the platform in your heated house is an admirable place for Mushrooms in the winter, or at any time when the heat of the house averages from 50° to 60°, a few degrees more or less occasionally not being material. The beds can be prevented drying by coverings of litter shaken from stable manure. Relative to the production of Mushroom spawn in the manure heap, you must remember that the excessive heat did not prevail through the entire mass, but was only in the centre, and over the heated part a layer would rest that was of the right temperature for the germination of spores and the spread of the mycelium. The Mushrooms in the field were black because they were old when you found them; had you discovered them a fortnight sooner they would have been of a different and much lighter colour. The cave to which you refer must be an excellent place for Mushrooms in the summer, or at any time when the temperature is not much below 55°. The failure you mention we do not attribute to the fungus but to the bed. It is clear the spawn has only spread near the surface, either because the bed is too cold below or because the material may have been unsuitable; also there is the chance that the spawn was inserted when the heat was still rising in the bed, and the mass became too hot except near the surface. Spawn should never be inserted until the heat has reached its maximum and commences to decline; and a bed, if the material is good and there is plenty of it, can generally be prevented from getting too cold by coverings of straw or hay. We have not seen any Mushroom beds made entirely of cocoa-nut fibre refuse, but good crops have been had with a portion of it mixed with suitable manure.

**Galvanised Wire Injurious** (*A Well-Wisher*).—Galvanised wire under certain conditions and circumstances is undoubtedly injurious. Some wire is saturated with muriatic acid for cleansing it before being coated with zinc, and this acid escaping, as it will do through the zinc covering, injures the shoots that rest on the wire. Again, in districts where there is much sulphuric acid in the air this combines with the zinc and forms white vitriol (sulphate of zinc), which is undoubtedly injurious, and is sure to corrode the wood that it touches. It is to one of those two causes that the injury to your trees is due. The remedy is either giving the wires three coats of paint, or taking care that in tying the shoots that a twist is given to the ligature, so that this, and not the shoot itself, rests on the wire. We have no recollection of receiving a letter from you on the subject before, and suspect the one you posted failed to reach its proper destination.

**Early White Grape** (*W. J.*).—As an early white Grape "other than Foster's Seedling, Duke of Buccleuch, and Muscats" for exhibiting in July, we doubt if you will find a better than the Buckland Sweetwater. Well grown it produces large bunches with fine berries, and these well finished are worthy of being staged with the others in non-Muscat classes. The Duke of Buccleuch shown in its best condition is unrivalled as an early white Grape, but first-rate "Bucklands" are more frequently seen than first-rate "Dukes;" and second-class examples of this Grape we have often seen placed behind first-class bunches of the older favourite. Buckland Sweetwater ripens with the Black Hamburgh under similar treatment, or perhaps a few days earlier; and the longer it hangs after being ripe the more flavourless the fruit becomes. Golden Queen requires nearly or quite as much time as Muscats to finish, and then too often there is a dark stain in the fruit that is not agreeable. The best growers of this Grape we know are Mr. Wallis, Kcele Hall, and Mr. Allis, Old Warden. We are sorry to learn of the accident to the Duke, which was promising so well. Why not try it again, with a Vine of the Buckland also? The former, as we have said, is the finer, the latter the more certain to grow and bear well.

**Names of Fruit** (*Reader*).—Your Apple is the Irish Peach, one of the best of the early varieties. (*R. Boulton*).—The name of the Plum you have sent is the Lombard or Bleekers Scarlet. You may possibly obtain trees under the former name.

**Names of Plants** (*Ashford*).—Not every week but on occasions innumerable we have stated that we do not undertake to name varieties of florist's flowers, but only species of plants. The Petunia and Carnation sent are not species, but merely varieties that have been obtained from seed, and if they ever had any names they can only be obtained from the florist who supplied the plants. (*Lady King*).—*Boykinia major*. (*W. W.*).—1, *Adiantum cardiolobum*; 2, *Tradescantia zebrina*; 3, *Clematis Flammula*; 4, *Selaginella Kraussiana*; 5, *Selaginella serpens*; 6, *Kniphofia (Tritoma) Uvaria*.

**Various** (*Apiarian*).—You had better feed gently, as by feeding rapidly the bees may simply store the syrup. You cannot do better than apply to Messrs. Neighbour, 127, High Holborn, for a smoker. The salicylic acid solution will keep for a considerable time.

#### COVENT GARDEN MARKET.—AUGUST 27TH.

OUR market is now getting quieter, though large consignments are reaching us from the continent. Prices have been well maintained.

##### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. .. .	½ sieve	2 6 to 4 6	Oranges .. .. .	100	0 0 to 10 0
Cherries .. .. .	½ sieve	0 0 0 0	Peaches .. .. .	per doz.	2 0 10 0
Chestnuts .. .. .	bushel	0 0 0 0	Pears, kitchen ..	dozen	0 0 0 0
Currents, Red ..	½ sieve	0 0 0 0	" dessert ..	dozen	1 0 3 0
" Black .. ..	½ sieve	0 0 0 0	Pine Apples English ..	lb.	2 0 3 6
Figs .. .. .	dozen	1 0 2 0	Plums .. .. .	½ sieve	4 0 7 0
Grapes .. .. .	lb.	1 0 2 6	Strawberries .. ..	lb.	0 0 0 0
Lemons .. .. .	case	15 0 21 0	St. Michael Pines ..	each	2 0



## VEGETABLES

	s. d.	s. d.		s. d.	s. d.
Artichokes .. .. dozen	2 0	to 4 0	Lettuce .. .. dozen	1 0	to 1 6
Beans, Kidney .. .. lb.	0 3	0 0	Mushrooms .. .. punnet	0 0	1 6
Beet, Red .. .. dozen	1 0	2 0	Mustard and Cress .. .. punnet	0 2	0 0
Broccoli .. .. bundle	0 9	1 0	Onions .. .. bushel	2 6	3 0
Brussels Sprouts .. .. ½ sieve	0 0	0 0	Parsley .. .. dozen bunches	2 0	3 0
Cabbage .. .. dozen	0 6	1 0	Parsnips .. .. dozen	1 0	2 0
Capecums .. .. 100	1 6	2 0	Potatoes .. .. cwt.	4 0	5 0
Carrots .. .. bunch	0 3	0 4	"    Kidney .. .. cwt.	4 0	5 0
Cauliflowers .. .. dozen	2 0	3 0	Rhubarb .. .. bundle	0 4	0 0
Celery .. .. bundle	1 6	2 0	Salsafy .. .. bundle	1 0	0 6
Coleworts .. .. doz. bunches	2 0	4 0	Scorzonera .. .. bundle	1 6	0 6
Cucumbers .. .. each	0 3	0 6	Shallots .. .. lb.	0 3	0 0
En live .. .. dozen	1 0	2 0	Spinach .. .. bushel	1 0	2 0
Herbs .. .. bunch	0 2	0 0	Tomatoes .. .. lb.	0 4	0 0
Leeks .. .. bunch	0 3	0 4	Turnips .. .. bunch	0 4	0 0



## LAND TILLAGE AFTER HARVEST.

CLEAN land, thorough drainage, fertility, mechanical division of the soil, timely culture, clean seed, no bare fallows—these are the watchwords at the present time of earnest, thoughtful, teachable farmers whose minds are open to the healthy influence of true progress, and whom a happy combination of good sense, caution, shrewdness, and energy has enabled to bear the brunt of hard times, and as a means to that end every real improvement in culture and practice has been eagerly adopted by them.

The speedy in-gathering of the corn and the near conclusion of harvest time, bringing us face to face with the work of preparation for another season, has given rise to the thought which we have thus recorded, and we now turn to the consideration of cleaning the stubbles as a matter pressing upon us for immediate attention. As soon as horses and men can be spared not a day should be lost in setting about this work, so that as much as possible may be done while the weather is so favourable. First of all let all stubble straw be got off the land and carted to the cattle yards. The soil is so dry and hard that harrowing will not do this thoroughly, and a horse hoe, cultivator, or broad share will have to be used. Then each field must be treated according to its condition. We have found one field which despite its foulness has yielded a full crop of Oats, where the plough, scarifier, and harrows, as well as men with steel forks, will be required to get rid of as much as possible of the couch grass and other weeds infesting it. If the weather continues fine no time will be wasted in carting off rubbish, but burning will be resorted to, and where the land is heavy clods of it containing weed roots will be heaped upon the fires and burnt. The advantages of such fires are many, the most important being the fertility derived from the ashes of all vegetable matter, the mechanical division imparted by burnt soil, and the thorough eradication of weeds, roots, and seeds.

On all sides one hears the expression that this is one of the finest harvests we have had in the present generation. A special effort should therefore be made to push the process of land-cleaning as far as possible. Not only should we do all we may upon the stubbles, but land under exhausted seeds, and any required from pastures or waste land for arable culture, should also be taken in hand at once. That weeds follow seeds is notorious, but that is an inevitable outcome of ploughing after seeds. Set the paring plough to work at once upon exhausted seeds, and make a point of following so closely with fires that each day's parings if not actually burnt then are heaped upon strong fires overnight, so as to destroy noxious insects as much as possible before they have time to escape, as well as to burn up seeds and roots laying near the surface. Turf-paring is of equal importance, and by way of trial in bringing some waste land into cultivation two years ago part was pared and burnt, and part only ploughed deeply with four horses. The result was remarkable. Upon the burnt part the crop of Oats in both straw and grain was quite double that upon the unburnt turf, notwithstanding that the entire field had a spring dressing of artificial manure, so that the crops clearly paid for the extra outlay involved in the paring and burning, in addition to the advantage of getting rid of the roots of Gorse, Broom, and Heather.

Clay-burning as a means of imparting mechanical division to the soil should also be proceeded with as soon as possible. The

very best dressing for this purpose upon heavy land is coal ashes and lime, the coal ashes being really of permanent use. It is time that cultivators of heavy land made a special effort so to alter its condition as to be able to plough and sow in good time even in a wet season; and failing the coal ashes, which are certainly not easily to be had in sufficient quantity for the work, clay-burning is a sound detail of practice which should obtain ready adoption by the home farmer, who ought to set a reasonable example of high and profitable farming to the tenantry of the estate. By so doing he would not only be able eventually to show a good paying balance sheet, but would enable the landlord to have that best of all answers to complaints of hard times—a farm that pays its way.

(To be continued.)

## WORK ON THE HOME FARM.

*Horse and Hand Labour.*—In the southern and home counties the harvest is fast approaching conclusion, and cleaning the land is following as fast as possible. This fine season we feel able once more to venture upon leaving the ricks a few days to settle down, but then thatching should be proceeded with without further delay. We get our thatching done well with due attention to neatness and finish at the rate of 1s. 2d. per square of 100 square feet. Trifolium incarnatum should be sown as advised last week upon clean but unploughed stubbles. The value has been proved of a green crop upon land in winter to preserve and store up nitric acid and prevent its waste by being washed into the drains by the heavy rains of autumn and winter. Farmers of heavy land may well hesitate to adopt the plan, but for light friable soil it is certainly advisable. Therefore when the land is clean, sow Rye, or Italian Rye-grass, to be ploughed-in in spring for Peas, Oats or Barley. To those who hesitate upon the score of cost of seed and extra labour, we say Give the plan a trial upon a moderate scale, so as to test it fairly, by watching its effect upon the corn crop next year. Let grass around the boundaries of corn fields be cut and saved for litter, and where Bracken can be had it should be cut, dried, and stacked at once, as it makes capital soft bedding litter for horses and cattle, enabling us to turn the straw to better account. If farmyard manure is used for Wheat the carting should be pushed on as opportunity offers, for there are so many demands upon the horse power on the home farm for general estate work as renders it frequently a difficult matter to keep abreast of seasonable work. Coal and wood-carting, timber-drawing, general carting for carriage drives, as well as for the repairing of farm roads, carting for the gardens where no horse is kept for that department, all have to be done, often, too, at times when one is much pressed on the farm. Well is it, therefore, to take every spare day for bringing up arrears of estate work. Hedges should now be clipped and made trim, so that the clippings may be burnt upon the nearest land bare of a crop.

*Live Stock.*—All yards and enclosures for live stock should now be put into thorough repair; fences and gates made sound and strong; drains and gutters cleaned; any hollow places likely to retain much water filled up; the lodges made snug and thoroughly cleansed with limewash, and the water supply rearranged if necessary, so that every yard has a regular supply of fresh water. It is our custom to have a stack of dry litter made close by each yard, and if the yards are large enough a big heap or two of litter inside is much liked by the cattle. Sheep require looking closely after to guard against and apply prompt remedies to cases of fly-striking, to which the hot weather renders them liable.

## METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.


DATE.		9 A.M.					IN THE DAY.					Rain
1884. August.		Barome- ter at 32° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp.-of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass.		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday .....	17	30.026	69.9	62.8	N.E.	66.1	84.6	53.6	121.6	48.8	—	
Monday .....	18	29.952	67.2	60.9	N.W.	66.4	80.9	54.7	119.6	48.4	—	
Tuesday .....	19	29.920	65.7	58.0	S.E.	66.5	72.6	52.3	104.9	46.8	0.017	
Wednesday ..	20	30.051	63.4	57.3	N.E.	65.0	75.4	49.8	115.4	44.4	—	
Thursday ....	21	30.217	67.4	60.9	E.	65.6	78.0	53.5	101.2	47.6	—	
Friday.....	22	30.202	68.0	58.2	E.	65.3	80.7	52.6	113.1	47.6	—	
Saturday ....	23	30.146	68.1	64.2	N.E.	65.7	82.6	53.8	122.4	48.2	—	
		30.073	67.1	60.3		65.8	79.3	52.9	114.0	47.4	0.017	

## REMARKS.

- 17th.—Hazy morning; hot and rather oppressive day.  
 18th.—A fine pleasant day, the sunshine tempered by occasional cloud.  
 19th.—Fine morning; cloudy afternoon; rain in evening; fine night with lightning.  
 20th.—Fine, cool, and pleasant.  
 21st.—Fine, but occasionally cloudy.  
 22nd.—Bright and pleasant.  
 23rd.—Fog early; fine, bright, hot day.

The fine summer weather which had prevailed since the beginning of the month lasted through this week, but it was not quite so hot, the temperature being about 3° below that of the preceding week, though still considerably above the average. The rainfall is again almost inappreciable, so that in this locality the drought has now lasted for twenty-five days.—G. J. SYMONS.





## COMING EVENTS

4	TH	
5	F	Crystal Palace Fruit and Dahlia Show (two days).
6	S	
7	SUN	13TH SUNDAY AFTER TRINITY.
8	M	
9	TU	Royal Horticultural Society's Fruit and Floral Committees at 11 A.M.
10	W	

### THE CULTURE OF THE PINE APPLE.

**T**HE Pine Apple has for a long period—nearly 200 years—been looked upon in this country as the “king” of hothouse fruits, and so long as such magnificent fruits are grown as those staged at South Kensington on the 22nd of July last by Mr. Nicholas, Earl Fortescue's able gardener—and who, it may be remarked, has more accommodation at Castle Hill, South Molton, for the production of Pines than falls to the lot of many gardeners—they are likely to maintain that distinguished position. Before proceeding farther I may as well state that it is not my intention to write an exhaustive article on the culture of the Pine Apple, but briefly to state the cultural details which, if followed, will, I trust, lead to satisfactory results.

As at the present time our plants are being arranged for the autumn and winter months, I think it may be as well to take the plants which are to fruit next summer instead of the suckers first, and simply treat the subject in the order in which the work is being done. The suckers have already been removed from the plants which have been fruiting during the past summer and placed in a corner of the potting shed out of the way of potting operations. The old stools, except those varieties—such as Providence and Charlotte Rothschild—which are shy in producing suckers, have been committed to the rubbish heap, the soil in which they were growing to the waste-soil heap, the crocks saved for future use, and the pots washed for the reception of next year's fruiters, with the top-dressing and potting of which we shall at once proceed, the beds of spent tan or leaves having in the meantime been removed, and fresh plunging material supplied; the brick and plaster work of the interior of the Pine houses and pits washed with hot lime, and the wood-work and glass with warm water. Many of the strongest-growing plants were put into their fruiting pots last April, and afterwards plunged in the ordinary way in the succession house, some of which will be fruiting now. These plants should be taken out of their summer quarters and have between 1 and 2 inches of the surface soil and a few of the bottom leaves removed, the former with the assistance of a pointed oak stick, working it rather deeper round the edge of the pots; then remove carefully any suckers that may be attached to the plants and top-dress with rough sandy loam which has been cut and stacked at least twelve months. Ram the same well together with a wooden rammer about 2 inches in diameter as the work proceeds. The next step to be taken is the selecting and potting in their fruiting (12-inch) pots the necessary number of plants to fill the house with plants for fruiting next summer, autumn, and winter.

*Potting.*—Before proceeding with this operation it will be necessary to make a few remarks as to how the pots should be crocked and the character of the soil. As regards the former a few barrowfuls of potsherds should be put down in

a convenient place to the Pine pits outside, whither the potting bench should also be taken for the time being, as the process of potting can be performed more expeditiously there. The crocks should be broken with a large hammer (reserving a few large pieces) and passed through three or four sized sieves, varying from a 2-inch sieve on the top to a quarter-inch one in the bottom. The contents of these respectively may be put into large pots or boxes in readiness for placing layers 2 to 3 inches deep in each pot, beginning with the largest size and finishing with the smallest size ones. Over all give a good dusting of new soot, which will keep the worms from getting into the pots, and a few thin pieces of turves, grass side down. Thus crocked there need be no apprehension on the score of the pots becoming water-logged or the plants suffering through imperfect drainage. In the matter of soil, all good Pine-growers give a preference to a fibry sandy loam, which, as already stated, had been stacked for twelve months and chopped down with the spade as required for use. To this should be added crushed bones, new soot, and small charcoal at the rate of a 10-inch potful of each ingredient to a barrowful of the loam, and the whole well mixed. The plants must be examined a few days before beginning the process of potting, and water given to any that require it. The plants should be turned carefully out of the pots, the drainage and a few of the lower leaves removed, and the surface and sides of the ball of earth and roots loosened slightly with a pointed stick, and any soil not permeated with roots removed. They should be let down to the bottom leaves in potting, the soil rammed firmly round the roots with flat and round rammers as the space admits, taking care that the plants are made firm about the collar. Over-potting should be avoided; but I consider a space of 1 or 2 inches between the ball of the plant and the pot not too much, but quite sufficient shift for all healthy plants in their several shifts from the sucker to the fruiting pot. In potting suckers I need scarcely observe that it will be necessary to remove a few of the bottom leaves, so that the roots coiled round the stem under the leaves may push more readily into the soil, and that about half an inch of the base of each sucker should be cut clean off with a sharp knife before being potted.

*Plunging the Pots.*—Before proceeding with this operation it will be necessary to consider the probable number of inches which the new tan or leaves—particularly the latter—in the bed in which the plants are to be plunged is likely to subside through decomposition during the interval between then and April, and in order to render the subsidence as little as possible during that period the tan or leaves should be trodden firmly together when being put into the plunging pit, making due allowance for the beds sinking 6 or 8 inches. The heads of the plants should be kept within an inch or two of the glass in plunging them to the rim of the pots in the bed. It is hardly necessary to say that if the Pine house be a lean-to facing due south the largest plants should be put in the back, and each succeeding row downwards. If the house is a span with a bed in the middle running north and south with hot-water pipes for supplying bottom heat, which is the most suitable structure for the production of Pine Apples, the tallest and the most robust-growing plants should occupy the central position, the next size being placed in rows on each side. Fruiting plants should be allowed a space of from 2 to 2½ feet from centre to centre, and the smaller plants space in proportion to their size.

*Watering and Shading the Plants.*—As soon as the plants have been plunged they must be supplied at the roots with clear tepid water and afterwards shaded from bright sunshine, putting the roller blinds on earlier in the morning and leaving them on later in the afternoon than was customary before the plants had their roots disturbed. When the roots have pushed into the new soil the shading can be dispensed altogether during the remainder of the season, and water must be applied sparingly, especially to the roots



of plants recently shifted. Winter fruiteders should, where there is not a separate house set apart for the swelling and ripening of the fruit, be kept in the warmest end of the warmest house, and when dry at the roots have liberal supplies of diluted tepid liquid manure. In order to maintain the fruit in an upright position two sticks, one on each side of the plant, should be placed firmly in the soil and the fruit secured thereto by two sets of ties of strong string fastened above and below the fruit, the top ties being fixed in a downward notch in the sticks at an angle of about  $30^\circ$  from the top of the fruit to admit of the latter growing erect without being hampered. The plants which are to produce fruit next summer should have completed their growth by the end of September, or at the latest by the middle of October. From that date until January next the pit must be ventilated freely on all favourable occasions, so as to thoroughly rest the plants prior to their being "started" about the new year.

*Atmospheric Moisture and Temperature.*—Damp between the plants and slightly overhead with tepid water from the syringe at closing time every bright afternoon up to the end of September, when it should be gradually reduced to twice a week—the plunging material being only then damped—to the end of October; then the distribution of moisture, except for the purpose of preventing an arid atmosphere in the event of the weather rendering severe firing necessary, must be discontinued until the end of February. At that time, according to weather and other circumstances, the syringe may be brought gradually into use again as the days increase in length. Evaporating troughs placed on the pipes must be filled with liquid manure at all times, except when the fruit is approaching maturity. A few canfuls of the same liquid thrown over the floor a few times a week at closing time, or just before dark during the growing season, is also beneficial. During the interval from October to January a night temperature of from  $55^\circ$  to  $60^\circ$  as the weather is mild or cold will be sufficient for plants in every stage of growth, except, of course, those that are swelling their fruits, which, if in a house to themselves, should have a minimum temperature of  $65^\circ$  or  $70^\circ$ , with a rise of  $10^\circ$  by day and a bottom heat of  $75^\circ$ . When sun heat, which generally follows frosty nights, raises the temperature above  $65^\circ$  a little air should be admitted. This may be increased progressively with the internal rise of the temperature, and reduced gradually as the sun decreases in power.

*Starting the Plants.*—About the end of the old or the beginning of the new year will be a good time to treat plants with a view to starting them into fruit, and with this object in view the night temperature should be increased to  $65^\circ$  and the day to  $70^\circ$  without sun heat, or  $10^\circ$  higher with sun; and the bottom heat from  $75^\circ$  to  $85^\circ$  or  $90^\circ$ . This can be done, if the pits are old-fashioned pigeon-holed ones, by making up the linings at short intervals with fermenting material, or turning on the hot water in the bottom-heat pipes. The soil in which the plants are growing must be kept rather dry, also the atmosphere of the house should be in order to prevent the plants making growth instead of starting into fruit as desired. The day and night temperature can be raised  $5^\circ$  higher in February. As soon as the young fruits can be discerned emerging from the centre of the plants sufficient liquid manure must be given to thoroughly moisten the soil. Atmospheric moisture must be applied sparingly while the fruit is in flower, and air admitted more freely during that interesting stage of the plants' growth, so that every pip of the fruit may be properly developed, after which a liberal supply of atmospheric moisture should be distributed over the plunging material and the paths, about the collars of the plants, and slightly overhead the latter at closing time on bright afternoons. In doing so avoid as much as possible letting water from the syringe or otherwise into the "crowns," as that would cause them to become too large, and thereby detract from the size and appearance of the fruit. It is hard to lay down rules as

to the time Pine houses should be closed in the afternoon, as so much depends upon the character of the weather and of the structures in which the plants are growing. Assuming, however, that the weather is bright and that the Pine houses are moderately built and air-tight, I should recommend closing from the end of April to the middle of May at from three o'clock to half-past three, and from the middle of May to the end of June from 3.30 to 4 P.M. Vary the time of closing half an hour during the months of July and August, and always, except when the fruits are approaching maturity, using plenty of atmospheric moisture at closing time, when the temperature may be run up to  $100^\circ$ .

In watering the plants—successional as well as fruiting—it will be advisable to pour some of the liquid manure or guano water into the axils of the plants for the nourishment of the young roots coiled round the stem at their base. I prefer guano water made at the rate of a 6-inch potful of guano to thirty-six gallons of water, as this, in my opinion, imparts not only a darker green and better texture to the leaves, but also a brighter and richer colour to the fruit. Shading being more or less necessary for the well-doing of the plants—providing it be light—from the middle of April to the middle of September, during the prevalence of bright sunshine, I prefer using for that purpose Messrs. B. Eddy's No. 5 shading attached to rollers, so that it can be easily put on and easily taken off. This should be put on at ten to eleven o'clock in the morning, according to circumstances, and removed at half-past two to half-past three in the afternoon. As soon as gills appear at the base of the fruit they should be removed.

In the matter of potting I may remark that the soil should only be sufficiently dry to prevent its adhering to the rammers. If the plants are infested with brown or white scale they should be well washed with softsoapy water and petroleum at the rate of two wine-glassfuls to the gallon of warm water, into which 8 ozs. of softsoap has been dissolved, as the petroleum is soluble in this, though it will be advisable to stir the insecticide occasionally as the washing is proceeded with. Shade the plants so washed earlier than usual the following and two succeeding days in the event of bright sunshine ensuing, as the plants are then very susceptible to injury.—H. W. WARD, *Longford Castle*.

#### GARDENERS' TORMENTORS.

I WILL begin with personal tormentors first; acutely agonising, torturing plagues, and those are corns! "Oh, come, 'H. Notts,' we don't want a chiropodical article in the *Journal of Horticulture*; that's too, too much; we cannot pass this." Stay a bit, please Mr. Editor. If corns are not horticultural matters, are they not matters (and very serious matters too) to horticulturists? Have we not seen good horticulturists hobbling about their gardens, treading as lightly, as gingerly as if they were walking on hot bricks, and every now and then, on a twist of the foot, or a touch of a pebble on the bottom of the foot or a stone at the side, putting their faces into horrible contortions? Have we not seen this many a time? nay, have we not gone through the experience personally and practically? "Oh, dear! my corns; they're just as if they were red-hot to-day; I'm sure something's going to happen. There'll be a change in the weather soon." Are not these and such like the speeches we have heard from sufferers from these gardeners' tormentors, corns? Shall we not notice them in the gardener's own personal paper, the *Journal of Horticulture*? I say, Yes, we will; for they are important horticultural matters. They are hindrances to horticulture in that they impede the progress of the gardeners so tormented from doing the best they can in their work, and are therefore real stumbling blocks in the way of their success. Well, now, I have a remedy better than all the advertised corn cures that ever were lied about in the most glowing and praiseful advertisement. That remedy is aromatic vinegar. Let any gardener tormented with corns get from the chemist a small quantity of this, say three or sixpennyworth, and a small camel-hair brush, and every night before going to bed dress his corns with the aromatic vinegar, taking great care to put it only on the corn itself and the hard skin surrounding it. As the corn and skin is killed by the vinegar it must be peeled off by the thumb-



nail or penknife, and this process must go on with systematic regularity until the corn is worked down to the root, and the root comes away clear; then that corn is done away with, and easy sensible boots or shoes must hereafter be the rule of wear. The boots and shoes must be made to fit the feet, not the head, as is too often the case when we are young, and smooth and comfortable hose, either cotton or wool, must be worn in addition. The secret of cure is regular applications of the vinegar, and easy well-fitting boots afterwards.

The other tormentors are strictly professional ones, and they are moles. Moles in a garden are a nuisance and a torment in any portion of it. They are specially a source of worry and annoyance to the gardener when they get into a seed bed, but this spring I found them the greatest trouble and vexation in my tennis ground. This ground abuts on to the park, there being only an iron fence between them, and the moles appear to delight in coming my way, and have often teased me by their persistent attempts to come on to the tennis ground. This spring one or two attempts were made, and so perseveringly made, too, that I got desperate, and, failing to entice them into traps, I was almost at my wit's end. Having, however, read somewhere that petroleum poured into their runs would drive them away, I did so, and gave a good dressing to every run, with the result that not another mole movement have I had on the ground since. Here, then, are two remedies for two garden tormentors. I give them for what they are worth. They are not original discoveries of mine; I never found out anything but I learnt afterwards that somebody had known it for ages. I have tried and proved both these, and can therefore recommend them.—H., *Notts.*

### ORCHID NOTES.

**SHADING DENDROBIUMS.**—It is only by experience and observation that it can be determined what shading should be applied to some Orchids. To subject the whole to the same treatment as regards shade is sure to end in disappointment. It is clearly evident that some need what may be termed dense shade while making their growth if their pseudo-bulbs are to lengthen out as is natural, while others require more light. The beautiful and now popular *D. Wardianum* requires what may be termed dense shade until its growth is completed. The conditions of a vinery filled with Black Hamburgh Grapes, where the foliage covers the roof completely, as is necessary to colour the fruit of that variety, will afford the shade necessary for this *Dendrobium*. When the roof is well covered strong light is necessarily excluded, and similar conditions should be given whether grown in the stove, Orchid house, or any other structure. The rays of the sun bring the growth of this variety to a standstill prematurely. The foliage, instead of being deep green, assumes a yellow sickly appearance; the points of the leaves commence dying, and half the foliage is gone by the time a short stunted growth is completed. The pseudo-bulbs of plants grown in the light are short and poor in comparison to those grown in a more shaded position, and they fail to produce so many fine flowers, simply because the pseudo-bulbs are considerably less. The whole of the foliage should be retained by the plant in a healthy condition until growth is completed, when the plants should be gradually exposed to more light and air to properly ripen and mature them. The plants must by no means be exposed all at once to the sun, for this operation requires to be carefully performed, or they will ripen prematurely instead of slowly and surely.

*D. primulinum* also requires a very shady place in which to make its growth; in fact, it will do well in a similar position to *D. Wardianum*. Up to this year we had grown our plants in the darkest end of the stove. This position suited them admirably until the small terminal leaf made its appearance, when they were gradually exposed to more light and air. This year we thought of having finer and larger pseudo-bulbs, and in consequence gave the plants a much lighter position, and the result has been sickly foliage all the season, and growths of about half the size of previous ones. They will be returned to their old position to make their growth another year, and we doubt not with more satisfactory results than have been attained by giving them too much light.

*Dendrobium crassinode* and *D. heterocarpum* have improved wonderfully since they have been exposed to every ray of light possible. The joints of the former are closer together and very much stouter, while they are equally as long; in fact, in every way display a marked improvement on the growths made during previous years. The pseudo-bulbs of the latter, although not so long, are more than twice as thick as when grown in the shade, and are evidently in the best possible condition for flowering

well. We have generally observed that firm, sturdy, stout pseudo-bulbs of this species always flower with greater profusion than those of slender growth and greater length. To produce thick sturdy growth abundance of light is needed. In order to cultivate a number of *Dendrobiums* well it is clear that the conditions suitable for each must be considered and provided for as far as possible.

**PRUNING DENDROBIUMS.**—From time to time much has been written on this subject both for and against the system. I have now tried it, and find that plants of *Dendrobium crassinode* do as well when cut over after flowering the same as an herbaceous *Phlox* as what they do when a number of exhausted and half-dead stems are allowed to remain upon the plant. The system of pruning so long condemned, generally by those who have never practised it, should commend itself to all growers of *Dendrobiums* who love to have their plants neat in appearance, for those pruned are much neater than those that are not. When the growths made are as fine, if not superior, to those on unpruned plants—to say nothing of the neatness of the one compared with the other—prejudice must give place to facts, and the system before long will find favour with the majority and become popular. Experiments have not been conducted with this variety only, for *D. Wardianum* and *D. heterocarpum* have been subjected to the same treatment, the only difference being that the last-named has two sets of pseudo-bulbs—those made this year and the last season's growths from which flowers will be produced. At one time I disbelieved in the pruning of *Dendrobiums*, but my ideas were based entirely upon theory; but practical experience has convinced me, since I have had an opportunity of testing the matter, that these plants may with advantage be annually pruned.

**CALANTHES.**—These plants are now very popular and find a place in the majority of gardens, and in many are wonderfully well grown. It has not, I think, been pointed out that when fine pseudo-bulbs are required, in preference to increasing the stock that they may be disbudded; strong pseudo-bulbs produce two growths, and neither of them at the end of the season is quite so large as the parent from which they have sprung. If the weakest, if there is any difference, is removed and only one left, it will attain a much larger size than if the two be allowed to remain; in fact, it will develop to a larger size than the pseudo-bulb that supported it in its early stages.—*SCIENTIA.*

### THOUGHTS ON CURRENT TOPICS.

WHEN "An Old Gardener" wrote a few weeks ago on overcrowding, and suggested a number of wrongs, I was emboldened to think somewhat freely in respect of his communication, which, however, was a useful one. I do not feel competent to take any similar liberties with his article last week. The subject on which he writes is a serious one—namely, the prospective scarcity of staple crops, and the inconvenience and discomfort that may follow by possible forgetfulness of the cause of the breakdown if it occurs next spring in the vegetable supply.

CULTIVATORS will not be likely to forget the impediments of the present season, nor the anxiety they experienced as they waited day after day for the rain that did not come, but which was absolutely essential for enabling them to ensure an abundant successional supply of garden produce; but though gardeners will not forget that they could neither sow nor plant at the proper time, will the owners of gardens remember the obstacles encountered when cooks complain of the scarcity of certain articles, which it is only reasonable to suppose will be felt sooner or later? That is a question of no small moment, affecting, as it must do so intimately, the position of men who have struggled through a memorable and trying season in endeavouring to meet to the utmost extent of their power prospective wants.

I THOUGHT when I read your correspondent's remarks on this aspect of the question that he had experienced something that he feared might be in store for others—namely, censure undeserved by want of the necessary thought to enable the whole particulars of a difficulty to be fully comprehended; and as half the misunderstandings that occur arise from the circumstances that lead to them being inadequately understood, I also thought he did well to register the events of the present that are calculated to have such a direct influence on contingent failures in the future, and of which it is not always easy to offer a satisfactory explanation at the time they occur.

I do not think either that anyone else should think that such reminders should be regarded in any way as an apology in advance for a temporary collapse that the experienced cultivator foresees,



but rather as an element of justice to the man who works and the master who pays; for it can never be right for the latter to be allowed to overlook anything that is necessary to enable him to form a sound opinion and arrive at a just decision on any matter affecting the reputation of another, in whatever capacity he may serve.

AFTER this tolerably long "think," but not too long, perhaps, considering the wide scope and important nature of the subject, I will indulge in a moment's reflection on another matter which is led up to by the use of two old-fashioned words in the previous paragraph—"master" and "man."

WHEN I read the "soft sawder" contribution of "A. F. M." on page 187 I thought if there was not much of it there was a good deal in it. I thought that he must be "one of the old school," and withal a "good old sort," as not a few of them are, into the bargain. I thought he recognised both the vanity and the frailties of rich humanity, and the pride, vanity, and want of tact of their toiling br—s. I had almost written brethren, but as that would perhaps savour too much of equality, I will say dependents, for "all men are brethren," it would seem, only applies when they are in church, not in the world.

I ALMOST dare venture to think, too, that our friend—for his letter is clearly a most friendly one—does not believe in lady helps, kitchen artists, and garden superintendents, but prefers the ancient denomination servants. And why should anyone who serves object to that honourable designation? for no greater honour can attach to a person than to serve loyally and faithfully.

THEN the term "employer" is too pedantic for "A. F. M." But is not a man—I mean gentleman who employs another man (I am right this time) strictly an employer? I think he is; but if it would please the distinguished individual whom I have the pleasure to serve to refer to him as master I would do so with pleasure, because he is a good one, but I do not believe he would thank me for it if I did. I know very well he is my master, because he pays me my salary—no, wages; and if I were to say "Thank you, master," and he were to respond, "You are welcome, servant," I think we should both of us feel a little queer, to say the least.

It is not often I look into the dictionary (it would, perhaps, be better if I did), but I have been impelled to see if I could find this sentimental problem solved there. What do I find? Simply that a master is just a man. Here are the exact words: "Master—a man who rules, governs, or directs either men or business." Very good. Now, I turn to another page and read: "Employer—one who employs, or one who engages or keeps in service." Good again; but how very enlightening! The truth about this matter seems to be expressed in the hypocritical sentiment embodied in the term "soft sawder." If, to speak from the dictionary, a man who is master likes "soft sawder," and pays for it, I think the man who is a servant would not be that master's servant long if he did not supply the solatium. The moral is evident. Let each one judge for himself, and act accordingly.

JUST a thought on the terms of remuneration for services rendered. Clergymen have stipends, lawyers fees, shopmen salaries, soldiers pay, and servants wages. This is, to say the least, curious, for all are servants who serve and receive in return money, under whatever term it may be conveyed. There is not anything particularly extravagant, then, in a gardener receiving a salary; but I for one would prefer good wages to a poor salary any day, and so I think would most men, at least I have never known a gardener who would not, whatever may be the preferences of others who would teach the craft common sense and humility.

ON another subject broached by "A. F. M." there cannot be two opinions by persons who think the matter out. Nothing that grows in a garden is the property of the gardener who grows it and is paid for his skill for doing so. Even if the gardener raises a Brown's Wonder Cabbage or a Green's Triumph Onion in his employment—no, master's garden, they are the property of the master, and not of the servant; but I should think very little of the master who begrudged either Brown or Green the credit of their work; and, on the other hand, I should think a gardener extremely foolish if he did not allow the owner his just due in those matters when to do otherwise would be displeasing to him, for I know of few things more gratifying than to see the owner of a garden take a deep and active interest in it, and I cannot help thinking that more would do so if gardeners would at times be a little less conceited and unbending. Your correspondent

has opened a wide subject for thought, but it is somebody else's turn to think about it now, and I come to a full stop.

I MEANT thinking about lifting Peach trees last week. I did, in fact, think about the subject, as suggested by the article of "W. B." on page 164, but had not time to put my thoughts on paper. When I read that article I thought the trees referred to were in a highly tractable state, and in condition to be lifted with about the same impunity as a plant is shifted out of one pot into another. It is quite clear that when trees are in that state, with a mat-like mass of fibrous roots, that large borders are superfluous; but then I cannot help thinking after all that the borders referred to are either too large or too rich, or receive too much water, or the trees would not fail because just one year passed without transplanting.

TIME was, I thought, when crops of Peaches, and good crops and fine fruit too, could be insured with the regularity of clockwork under glass without the trouble of lifting annually. I can think of trees which never failed to bear the best of fruit without any disturbance of the roots for years together, but the borders were not rich. They were firm, contained plenty of calcareous matter, and the annual op-dressings induced a network of roots near the surface.

I CANNOT help thinking that there is something wrong about borders when trees have to be lifted every year to check over-luxuriance, and if I had such borders I should work in a quantity of chalk if I could get it, and if not I should get lime and make chalk, and also should contrive to make wood ashes; then with thin training the growths and regulating the water supply according to circumstances, should expect to have hard medium-sized wood and bold buds that would "stick on," and with even one pollen-bearing tree and a hive of bees not far off should expect much more fruit than the trees could perfect without so much lifting. No doubt your correspondent does quite right in lifting his trees, but I think there is something in the soil at his command that is not good for them, and something out of it too, that they need—in a word, it is too rich in nitrogenous and proportionately deficient in calcareous and phosphatic matter. Let him think about that aspect of the subject, and he will, if he acts accordingly, perhaps have less wood and more Peaches, with less lifting of the trees into the bargain.

By the way, I thought Mr. Elwes' report of the International Exhibition and Botanical Congress at St. Petersburg a model in its way. There appeared to be little or nothing to "report," and he said so; but I thought he very adroitly took advantage of his opportunity in suggesting to the Science and Art Department that horticulture and its interests may possibly be worth some slight official recognition, and that "if anything like the same consideration and assistance were given by the Government to the Fisheries and Health Exhibition there would be something to 'report.'" There would be something, I think, that would astonish the world and benefit its commerce, that would reveal the magnitude of the horticultural industry, and show that it is greater in England than in any nation on the face of the earth, and yet it is practically unrecognised. I cannot think any further on this subject now, and conclude with "Well done, Mr. Elwes."

"C. W." appears to have satisfied himself by experiments that aerial roots on Vines are induced more by a humid atmosphere than sluggish action of the roots in the soil. I think he is right; at any rate I have seen aerial roots hanging from Vines in remarkable profusion when the border was a veritable network of active roots, and I never saw finer Black Hamburg Grapes than were produced under the steaming treatment that was accorded when the fruit was swelling; but I have seen Vines innumerable with not half the feeding roots in the border, yet quite without aerial roots when a comparatively dry atmosphere has been maintained; and I do not think that roots from the stems do any harm whatever, nor indicate exhausted Vines, but rather the contrary.

MR. ABBEY derives comfort from the dry weather, inasmuch as it will conduce to the fruitfulness of trees. I think it can hardly be otherwise; and I think also that "Non-Believer" may possibly have the pleasure of seeing plenty of Apple and Pear blossom next spring on the growths of the present summer. I know I shall if I live, for I can see the fruit buds forming now; and, in passing, may I say that I hardly think Mr. Waiting shows his authority as a judge and lecturer on "style" in writing in his letter on page 184? Perhaps neither he, nor I, nor "Non-Believer" would be any the worse if we could remember those stinging lines of Burns: "Oh wad some power the giftie gie us, to see oursels as ithers see us," for I think we all need polishing.



I THINK we ought to know the name of the Society which offers prizes for "small fruit," and permits Grapes and Melons being included in the collections. I think anything more absurd it would be difficult to imagine than the logical interpretation of a class like that referred to on page 205. It is quite original, and the Society ought to have the credit of its remarkable production.

BUT there is one more curiosity. A correspondent desires to know what I think of the judging of bouquets of annuals to which he directed attention last week. I think if the case was exactly as stated that the Judges were duffers; and I think also if the writer of the letter to the Journal took no other steps in the matter—entered no protest—was frightened of offending the "big guns," that he was very nearly a duffer too. If he did enter a protest on the grounds stated, and ventured timidly to suggest that Celery is not exactly an annual, and not exactly adapted for finishing-off bouquets, and still the Committee took no notice, I should be strongly inclined to think that they were the greatest duffers of all. It is just possible, however, I think, that there has been some mistake in the matter—some ambiguity in the schedule, for it is scarcely conceivable that any body of intelligent men, not to say intelligent gardeners, would stultify themselves in the manner indicated by "Second Class." If they have let us hope they have managed their last show.

FORTY-SIX varieties of Orchids must make a right Royal bouquet, that number being enumerated on page 192 as presented by Dr. Paterson to the Princess of Wales, surrounded appropriately with sprays of Prince Albert's Pine. My first thought on reading the note referred to was that the loyal Doctor must have a rich and extensive collection of the aristocratic flowers, and my second one of wonder as to who the individual could be who was able to institute a comparison between *Stenia fimbriata* and *Mephistopheles*. I am free to confess I have never seen either of them. I should like very well to make the acquaintance of *Stenia*, but as to the "other party" I shall be content to remain in ignorance of his peculiar appearance.—A THINKER.

### CHOICE ALPINE PLANTS.

*NIEREMBERGIA RIVULARIS*.—This, as the specific name implies, is a water-loving species, and of quite a distinct habit of growth from the other members of its genus. Among hardy and dwarf alpinists generally it holds a first-class position, and should in consequence be among the most prominent in all good collections of hardy plants. Under cultivation it seldom attains more than 3 inches in height, its slender stems creeping quite closely to the ground and forming a dense carpet with its abundant foliage, and from this mass of leaves its large, erect, creamy white flowers spring. These are usually some 2 inches across, with yellow centres, and may sometimes be seen faintly shaded with rose. When in good condition its flowers almost hide from view the carpet from which they spring, and it is, in short, one of the most effective of summer-flowering plants. It is of easy culture; indeed, once planted in the right spot it will take care of itself provided it be not overrun by something else of rampant growth. It delights in moisture—not, however, a wet position, since this sometimes proves fatal to it. Peaty soil, or loam and peat in equal parts, suit it well. Choose for its companions such plants as *Trilliums*, *Rhexia*, *Spigelia*, and the like, all of which will be at home alike in the same soil and situation. It is also well adapted to form carpets where *Cypripediums* are planted, which will suggest the desirability of a partial shady position. On damp grassy slopes it may also be placed, for in such is it found on the banks of the Plate River. It may be grown equally well in pots, which should be placed in shallow pans kept full of water till late in the autumn, when they may be removed in early spring. Never let it suffer for the want of water. It is a charming plant for the rock garden and deserves every encouragement. It is by no means an everyday occurrence even in choice collections of hardy plants, which to me is an unaccountable fact, seeing that its free growth and general excellence favours its extensive cultivation. It is readily increased by division.

*LITHOSPERMUM PROSTRATUM*.—Few are the plants which we possess with brilliant blue flowers, the *Gentians* excepted, that are truly hardy. This well-known favourite (fig. 37), however, possesses all these qualities. It is peculiarly adapted for planting on rockwork owing to its prostrate habit and great profusion of lovely rich blue flowers, which bear favourable comparison to the rich hues of the majority of the *Gentians*. From a variety of causes it is generally seen in a straggling almost miserable condition—a condition which fails to recommend it to lovers of plants, though all admit it to be one of the most charming in respect of colour. It is easily managed, and by following the simple method which I have for years adopted in its cultivation compact tufts may easily be obtained. It will be

seen at a glance that it is not of the usual character of alpinists in respect to habit, and which generally form themselves into more or less compact cushions. This, however, is quite distinct, and is in reality a suffrutescent evergreen. In planting choose for it a sunny position on the rock, in deep, rich, light sandy loam. It will soon form compact tufts. Not so, however, when planted in stiff, clayey, or cold soils; in these it invariably grows slowly and in the end only makes straggling growths, which are mostly blackened half their length. In this lingering and unhappy condition it is anything but pleasing. Let those who desire to see this plant in luxuriant spreading masses obtain fresh stock and make a fresh start. When the flowering is over prune them closely with the knife, say to within a radius of 3 inches (this is, of course, only intended for newly planted ones), which will induce them to break up numerous from the centre, and in sufficient time to get well-ripened wood before winter. This plan may be adopted till the plants have made really good tufts, when they may be allowed to ramble at will. It is propagated by cuttings: those best suited to form roots quickly are the young shoots, which should be stripped off with a heel attached and inserted under handlights in very sandy soil. Inserting considerably more than may be required will be the quickest means of soon forming good patches, pruning them till they form such as above described. When once established it is most impatient of removal, and old plants can seldom



Fig. 37.—*Lithospermum prostratum*.

be removed; therefore it is most important that a good position should be selected at first, where it may remain undisturbed. It comes from the south of Europe, where it is said to become a foot high. Such, however, is the experience of but few of even the best cultivators in England, where it assumes a strictly prostrate habit of growth. *L. fruticosum* is often given as synonymous, though I believe erroneously, and has been known to cultivators upwards of two centuries, and attains a height of 2 feet, while the lovely little plant under consideration came to us in the early part of the present century.

*EPIGÆA REPENS*.—A trailing evergreen from North America, where it is abundant in many parts and a real beauty, for though from the rich flora of North America we have an almost endless number of rare and lovely plants possessing qualities not easily surpassed, yet this little trailing shrub ranks among the best. Singularly enough, as with many other choice plants, it is only known to a few, that limited few known as enthusiasts, and in this unique circle it is much admired. The conditions under which it luxuriates in its native home, though apparently of a commonplace character, are not usually sufficiently imitated in English gardens to suit it. Like many other plants having the reputation of being fastidious it will require time ere it will become a popular plant. Still it is to be hoped that many more will make an attempt to grow it successfully, as it well repays the labour bestowed upon it. The primary cause of failure is



choosing the wrong position for it at planting time, some fixing it in a sunny position, others in a wet and shady bog. In either of these it is sure to be unhappy. In the former position its leaves will soon present a brown and blistered appearance, and in the latter its roots will not long survive. At the outset those unacquainted with it should try to ascertain the conditions under which it exists in its native habitat, after which it will be found among the easiest to manage. It inhabits the Pine woods of North America from Canada to Carolina, invariably in rocky or sandy soils. In such as these it seems to delight, and often importations of it may be found with particles of hard granitic rock clinging tightly to its woody fibres. Midst the Pine woods it is afforded ample shade and shelter, conditions at all times essential to its well-being. It delights in peat and leaf soil in about equal quantity, to which, beside a fair proportion of sharp sand, add a liberal quantity of broken brick rubbish about the size of hazel nuts. This forms an excellent substitute for granite, and can always be had. Its small clusters of delicate rose-coloured flowers, which are produced in profusion in early summer, emit a delightfully spicy fragrance. In a cut state it is seen to great advantage and lasts a considerable time. The unfolding buds somewhat resemble at a side view the flowers of President Garfield Bouvardia, and are of a similar colour. It does not root readily from cuttings, though it may be easily rooted by twisting the shoots and pegging them down in sandy peat after the manner of layers. If not required in quantity it may be thus layered, as thereby fresh roots are formed, which gives increased vigour to the plants.

**DRYAS OCTOPETALA** (Mountain Avens).—An extremely hardy alpine of dense prostrate habit, indigenous to many parts of the globe. It occurs throughout the mountain regions of Europe, Asia, and North America, plentiful in Scotland, and more sparsely distributed, I believe, in a few spots in North Wales. Inhabiting such a wide geographical area as this, it is only natural to suppose that it must encounter considerable variations of soil, altitude, and position. When we consider these points carefully it would seem to be one of those plants which under ordinary conditions would not fail to give satisfaction; and though it grows with such freedom in so many places and even within the limits of our own little isle in luxuriance, it is not an everyday occurrence to find good patches under cultivation. In alpine and even arctic regions the mountains are mantled with its abundant foliage, from which issue its creamy flowers about an inch across, furnished with yellow stamens, which render it more conspicuous. It is strictly evergreen, and being neat and compact in habit as well as handsome in foliage and flower, it is deserving a good position on the rockery. It should be placed in such a position that it may overhang some projecting ledge of rock, and where it forms a most pleasing and interesting feature. It delights in moist sandy peat, and is easily increased by division, by cuttings, or seeds. I remember seeing some years ago fine patches of this plant in Messrs. Backhouse's richly stored rockery at York, and happy indeed they were. It prefers rock or broken bricks mixed with the soil, and a position not having the full sun. Of other species not so well known as the preceding may be mentioned *D. Drummondii* with yellow flowers, a telling plant for the rock garden, enjoying a deep bed of peat in a moist half-shady position; and *D. tenella*, an extremely rare plant from Labrador, forming dense little tufts of very minute leaves and large creamy white Anemone-like flowers. There is only one other form with which I am acquainted, known as *D. intermedia*. This, however, I do not consider a true species, but probably a minor form of *D. octopetala*. It is identical with the type in its bright shining leaves above and serice beneath, but is smaller in all its parts.—J. H. E.

### NOTES ON APPLES.

**BUDDING.**—For the last few years I have at this time budded a few stocks with varieties which have proved worthy of our best attention. Apple trees are so cheap that it may be thought hardly worth while to propagate them at home; but it happened in our case, as I have no doubt it will with others, that some of our most reliable kinds were without name, and the only means I had of multiplying these was therefore to propagate them myself. Some gardeners prefer grafting in spring to budding in autumn. I am inclined to believe that budding is incomparably superior to grafting for young stocks, and I have no hesitation in recommending budding very strongly to other gardeners. The end of this month is the best time for the work, both stock and scion being then in the best condition. My first attempt was a failure, and the reason for that, so far as I can make out, was brought about by leaving the leaf attached to the bud. A noted pomologist kindly gave me a hint on the matter, and since the leaves have been detached I have succeeded perfectly.

**YOUNG VERSUS OLD TREES.**—Old trees are popularly considered to be better fruit-producers than young ones. Well,

they are in good Apple seasons, but in a year like the present, when Apples are extremely scarce, the young trees have it all their own way. If all our trees had been young it would have been a fairly good Apple year with us, as most of these have a fair crop and some a heavy one; but on the old trees—and the older they are the worse—the crop is almost nothing. Now there must be some reason for this. We all blame frost for the scarcity, but frost is not likely to be particularly discriminating as regards the age of trees. I imagine what it does discriminate in the quality of the bloom. Strong well-developed bloom has all the chances as opposed to the ill-nurtured blossom of old worn-out trees. It is also worth notice that on strong young growths which have been left on old trees the most fruits are to be found. An overflowing season like 1883 had its lessons in not being too greedy with old trees, and the present year should teach us to chiefly depend, in gardens on healthy young trees.

The other week I saw a note on the question of pruning. It is impossible to lay any set rule down as to the pruning of Apple trees, varying so much as they do in habit. I do not, of course, want to say anything arbitrary as regards their behaviour with other people who find them amenable to the same treatment as that reserved for forest trees. In our climate Apples develop very marked peculiarities. Fearn's Pippin, for example, requires very close pruning; Gloria Mundi also requires cutting pretty hard back. The Codlins, on the other hand, can hardly have enough wood left; Manx Codlin and Stirling Castle never grow enough and hardly require pruning, while Ecklinville, Warner's King, Beauty of Kent, Kentish Fillbasket, Wellington, and many others are best left with plenty of firm wood. These do not refuse to form fruit buds on a length of 2 or 3 feet.

Although the planting season is as yet somewhat in the future, it may nevertheless be not altogether amiss to call attention to what has so very often been pointed out during the past few years, and that is the unwisdom of planting many sorts for the purpose of deriving a supply of Apples. It can hardly be too often reiterated that a few reliable sorts multiplied according to need is the only safe way of keeping up a supply. Even in extra bad seasons some kinds never fail. Of these never-fail sorts I would note Lord Suffield, Stirling Castle, Ecklinville, Northern Greening, Warner's King, Alfriston, Mère de Ménage, Kentish Fillbasket as being about the best. Some really good kinds, such as Hawthornden and Wellington, are so subject to canker that I hardly care to recommend them. The only dessert varieties I find worth growing are one or two early ones, such as Irish Peach and Red Quarrenden. The finer and later sorts seem to require a wall; King of the Pippins is the only latish variety that can be depended on.

Another matter worth attention as regards planting is that of the age of the trees. I would most unhesitatingly recommend strong maidens. I have never failed with these, but have often known failures with older plants. Properly managed older plants should do equally well, but they are often sent with too few roots, and in consequence feel the bad treatment so much that maidens in the end distance them entirely. People who manage their own gardens are very apt to err in getting largish trees, and when planting them they very kindly bury some dung among the roots, hoping they will reciprocate their kindness by quickly yielding much fruit. Unfortunately for them most plants do not prefer raw dung to good soil, and the Apple is not one of the few that do. The place to put the dung is on the surface of the soil after the planting is finished. If the dung is fresh and good there is no fear of the roots failing to reap the benefit. All young trees should also be securely staked for the first few years, and if lifted biennially it is much to their benefit. An annual surfacing of dung should not be neglected.

I may add that at present we are thinning out useless spurs and branches from trees which are carrying short crops. This is much better done now than in winter.—R. P. B.

### SHRUB-GROUPING.

(Continued from page 162.)

OF other summer-blooming shrubs there are several varieties of *Hibiscus syriacus* quite worthy of the rich soil which they require to answer well. Hydrangeas, too, make a great display of pink, white, and blue flowers throughout August, but they must be planted carefully in deep soil. I have some fine specimens of *H. hortensis* 10 feet in diameter laden with hundreds of deep blue flowers planted in deep yet poor soil much impregnated with oxide of iron; many others planted at the same time in poor thin silicious soil made very little growth and were comparative failures. *H. paniculata grandiflora* is thriving in deep rich soil abounding in potash and lime, and I have no doubt that



*H. hortensis* would thrive in this soil, too, but its flowers would retain the normal pink colour.

*Rubus flore albo pleno* and *R. roseo pleno* are both lovely, with double white and pink flowers in August and September. The Chinese Bramble (*Rubus phanicolasius*) is also ornamental, with handsome foliage, dark green on the upper and white on the lower side. The fruit is enveloped in a long downy reddish-brown calyx as it grows after the flowers fade. In this guise it is attractive, and when the segments of the calyx turn back and display the glossy scarlet fruit which comes in bold symmetrical clusters, the effect is bright and pleasing in a very high degree. I have some plants of it which were raised from seed two years ago, and find the fruit ripens at the same time as that of the common Bramble, so that it is at its best from the last week of August onwards through September. *Escallonia macrantha* becomes so handsome a shrub in the southern counties, and gives flowers so early and late in summer, that it must certainly have a prominent place wherever it is found to answer. There is nothing gaudy or even brilliant about it, yet its effect is decidedly rich, quiet, and refined. Its growth is so dense that large specimens are literally mounds of deep glossy evergreen foliage, charmingly studded with spikes of bright pink flowers in summer.

*Hypericum patulum* is one of our best dwarf shrubs for the front rank of a group. When 2 to 3 feet high and as much in diameter it is by no means inconspicuous, for it is so full of pretty yellow flowers in August and September as to be very attractive. *Æsculus laciniatum*, the summer-flowering dwarf Horse Chestnut, has handsome foliage, each shoot being crowned with a spike of its pretty white flowers now, and in autumn the leaves change to a rich yellow. *Desfontainia spinosa* is another August-flowering shrub with evergreen foliage very much like that of the common Holly, with handsome orange tubular flowers. It grows to a height of about 6 feet, and is then remarkable for its distinct and striking appearance. Another shrub seldom met with is *Hypericum oblongifolium*, which is at its best just now. The finest specimen I know of is at Carelew. When I saw it a few years ago at the end of August it was 6 feet high, and a perfect mass of yellow flowers. Nice plants of both it and *H. patulum* can now be had for 1s. 6d. each. Both are to be regarded as indispensable among summer-flowering shrubs, and I strongly commend them to the notice of those who have a list in course of preparation for next planting season.

Another native shrub, though not so brilliant as the Mountain Ash, but quite worth planting, is the common Guelder Rose. It grows into a shapely rounded bush some 10 feet high and as much in diameter, its pure white flowers being followed by clusters of glossy purplish-crimson berries, which continue ornamental till winter, for the birds will not touch them, as they do the more brilliant berries of the Mountain Ash, which are now being eaten so fast that none will be left in another fortnight. Autumn may certainly claim the Guelder Rose for its berries, and for the crimson hue of its foliage then if there be much oxide of iron in the soil in which it grows. The Liquidamber *styraciflua* is then especially brilliant with its rich crimson leaves, affording a striking contrast to the silvery plumes of the Pampas Grass. It does not answer well in a poor thin soil, but is quite worthy of one's best care in providing stations for it. *Pyrus prunifolia* is highly ornamental with its brilliant-coloured fruit, of which it has an abundant crop this year. So, too, has our own wild Crab, and there is no sight more attractive in autumn than a tree of it laden with the pretty high-coloured clusters of yellow and crimson fruit. Like the Mountain Ash and Guelder Rose it abounds in the woods here, giving us blossom in spring, and fruit that is even more attractive in the autumn.

I decidedly object to Apple trees in shrubberies, but the Crab is a miniature form that is not offensive, its growth having a certain air of wild beauty that is agreeable; but a grafted Apple tree as it becomes old gradually develops a squat spreading head that is the reverse of ornamental. I was once standing on a terrace in front of a noble pile of buildings in the full enjoyment of a scene rich in all the elaborate details of a first-class terrace garden. Looking onwards I saw fine timber fringed with handsome shrub groups, soft undulating turf—all was in accord, till farther on the eye fell upon the tops of some old standard Apple trees, and there was at once an involuntary sense of incongruity, of the presence of a feature that clashed with all that was graceful, stately, and symmetrical around it. I revert to this incident now, because occasionally an advocate of novelty puts forward a plea for the introduction of Apple trees in shrubberies. Lovely as Apple blossom undoubtedly is, we can only

accord the trees due admiration in the right place, which undoubtedly is in the orchard, or hard by some quaint old farmhouse. Certainly our store of autumn-flowering shrubs is not extensive, but then we hardly look for fresh young flowers that time of year, and are prepared to admire soft rich mellow tints on dying foliage, and the bright colours of ripening berries that tell of the swift approach of winter. Golden Queen Holly then comes more fully into notice than it did in summer, and we have a picture of varied and delightful contrasts, rich in harmony, without one jarring note, if near it we see a Liquidamber, a *Rhus laciniata*, some of the Japanese Maples, *Cornus brachypoda*, a Pampas Grass, some of the hardy Azaleas, a *Berberis japonica*, of which I have seen a specimen 12 feet high, with a sprightly fresh green Conifer or two. Conceive the effect of the rich leaf tints if for foil we have a background of the lively green foliage of *Pinus insignis*, with perhaps a white-stemmed Birch or two for relief, with the long pendant flexile branches still dotted with foliage that has taken its dying tinge of yellow. Not easy is it to plant such a picture, but it is worth while trying, and though failures may occur, the work of alteration and improvement will certainly be anything but unpleasant.—EDWARD LUCKHURST.

(To be continued.)

### THE CELERY MAGGOT AND MEALY BUG.

**THE CELERY MAGGOT.**—Last year our Celery crop suffered severely from the attacks of this maggot, and after trying various remedies to no purpose, we had to resort to hand-picking the infested parts of the leaves, which, as a matter of course, checked the progress of the plants, in consequence of which our crop of Celery was rather a light one. The Parsley crop also came in for a share of its attentions, much to its detriment.

We were visited this year rather earlier than last, as the maggots attacked the plants while yet in frames. I determined to try the effects of tobacco juice on them, so a pail was procured in which we diluted Corry and Soper's "London" tobacco juice with water, one part of the former to ten of the latter; the plants were then carefully lifted with earth attached, and each one dipped in the mixture up to the collar and then laid on their side to drip for a few minutes, after which they were finally planted in the prepared trenches. Next day on examining the leaves which were infected we found the maggots all dead, and I am happy to say that we have been quite free from them up to the present; but should they make their appearance again we shall treat them to the same dose applied through the syringe, which I have no doubt will have the desired effect.

**THE MEALY BUG.**—It has been for years a wonder to me how such a slow-going insect could spread so rapidly over plants, till of late I have satisfied myself that there is no wonder in the matter, as the full-grown female which lays the eggs is quite different in appearance and in powers of locomotion from the others, being a small grey insect with wings, generally to be found in the folds on the under side of the leaves, and when disturbed will show its paces in pretty quick style. When sponging plants infected with mealy bug this harmless-looking female bug should be carefully hunted for and destroyed.—H. HENDERSON.

[Is not the winged insect the male?]

### HYDRAULIC RAMS.

AN effective advertisement in the Journal reminds me of the great value of an hydraulic ram in a garden in one of the driest districts in England. Without the aid of this simple but most effective appliance for raising water from a distant stream to a tank at the top of a mansion, and from thence conducted to the garden through inch pipes, there would have been a total collapse in the crops not only this year but on several previous occasions. I mention that the water was conveyed to the top of the mansion for the reason of showing that it answers all ordinary purposes there, and that an adjacent hill, as shown in the figure on the back page of the Journal last week, is by no means a necessity for the effectiveness of the system. When such a hill exists it is highly desirable to take advantage of it, because then the pressure of water is so great that when it passes through small pipes it is driven to a great height and with corresponding force in the case of an outbreak of fire at the top of a building; and in the absence of fire, what is far better, a fountain can be kept in play whenever it may be desired. Do not, however, let the absence of a mountain deter anyone from fixing an hydraulic ram where there is a stream of water for working it and for distribution where it may be wanted in mansion, offices, and garden.

In two establishments in which I have served the water supply is obtained from a lower level by the aid of water-wheels and pumps—the wheels working the pumps and forcing the water a distance of half a mile or so. The supply seldom failed, still it was not constant. The cost must have been considerable in procuring all the necessaries for the working of the system, and constant attention must be given to oiling the parts liable to friction, or a break in the supply of water speedily occurs. In a third establishment I found an hydraulic ram, and this ram was certainly one of the best friends I ever had. I was astonished by its simplicity and gratified by its efficiency. It was always at work night and day, need-



ing neither oiling nor any other attention whatever for months together; indeed it has worked for a year without intermission or examination. The cost of providing this invaluable article must have been trifling in comparison with that of the wheel and pumps; and the ram has beyond doubt paid for itself over and over again in the saving of labour in watering and the great increase in the produce of the garden that was the outcome of its aid.

It was at first fixed exactly as shown in the engraving referred to—that is, about 5 feet below the water level of the supplying stream, and about 15 feet from it. Though it worked like that for some years, yet the action of the valve was too violent—the pulsation, as it were, too rapid—that it now and then shook itself out of order. The supply pipe from the stream was then lengthened, and entered the stream at the point where it widens in the figure referred to, or instead of the pipe being 15 feet long it was about six times that length, and the “fall” was thus correspondingly lessened. The effect was magical. There was no more clashing of the valve and scarcely any noise, but it worked with the greatest ease and smoothness, the supply of water being unfailing and uninterrupted.

I remember Mr. Luckhurst, who appears to have had much experience with hydraulic rams, stating in the Journal that a 2-inch supply pipe should be 100 feet long, and my experience certainly proved that his statement was correct, though he recommended that the ram should be 10 feet below the stream. He was probably quite right; for though the one under notice was perfectly satisfactory, inasmuch as it supplied all the water that was required, yet its action was rather slow, and no doubt with a deeper bed it would have worked quickly and forced considerably more if it were needed.

The depth, however, depends on the size of the ram. Mr. Luckhurst has recorded that he has one fixed only 13 inches below the source of supply, only needing a few quarts of water per minute, which it forces to a height of 34 feet. That being so, it is evident that there are hundreds of streams in the country where a ram might be fixed, and hundreds of gardens parched and gardeners exhausted that might be refreshed at a trifling cost to the owners of those gardens.

When I see, as I often have seen, a constantly running stream within a few hundred yards, and even much less, from a garden and the gardener struggling to keep his plants in health and his crops moving, and, moreover, failing in spite of his efforts, I always think the owner of the garden is ignorant of the little cost and great value of the hydraulic ram, or that he cares very little about his garden. Wherever a garden is to be in an enjoyable state and productive, water must be provided. It is the most important of all requisites, and often unfortunately the last to be thought about—or at least to be supplied, for some persons “think” about doing something for years, but cannot make up their minds to act and finish the work in a week.

The exhausting period through which we have recently passed, and the great inconveniences that have been experienced in keeping things alive; the labour that has been expended and strength wasted in carrying water, that with a little foresight and slight outlay might have been ready to hand, will, it is hoped, be the means of directing the attention of owners of gardens to the great want that exists, and to the remedy that so many of them can so easily procure and apply—the hydraulic ram.—EXPERIENTIA DOCT.

#### JUDGING SPRING-SOWN ONIONS.

In July and August there are many spring-sown Onions shown at all exhibitions of any importance, and the judging of these frequently gives much dissatisfaction to exhibitors. Many judges seem to think that these Onions should be quite dried up in the necks and bottoms before they are placed before them if they are to be worthy of a prize, and I would like to ask how anyone can expect spring Onions to be in this mature condition at the times named? Times without number I have seen spring bulbs not more than 7 inches and 8 inches in circumference gained a first prize before others 12 inches and 14 inches round, and all because the former were dried up, while the latter were green and fresh. Anybody can dry Onions. It is one of the most simple operations connected with their culture, but everybody cannot grow a spring Onion to be 12 inches or 14 inches round in July or early in August, and it is in this the credit lies which deserves reward. If prize lists would only state that the prizes would be awarded to the best-dried Onions, then exhibitors would understand what to do, but as it is the prizes are not generally awarded to the finest grown. Half-grown specimens, no matter how much they were dried, would never receive favour from me in the summer season, as the prizes would be awarded to seasonable productions, and above all to the best developed. I do not know when this common looking-out-for-the-ripest system originated, but in my opinion it is wrong, and should be stamped out. For instance, just now the best of our spring Onions, Webb's Banbury, 14 inches round, are not dried up as if it was Christmas, but they are plump finely developed bulbs of the highest usefulness, and should anybody show such at this time I say they should be placed before all those taken up and dried off before they are half grown. Of late many exhibitors have complained to me of this, and I think they have just cause to grumble.—J. MUIR, *Margam*.

WASPS.—DAHLIA CONSTANCE.—In your last issue “J. B. R., *West Essex*,” wishes to know how people in other parts of the country are faring respecting wasps. From August 4th to 29th we have taken ninety nests within three-quarters of a mile radius of the garden. The blackbirds have been a great pest to the Plums; I suppose it will have

been owing to the dry weather, but last night (August 31st) we had a grand rain, upwards of an inch being registered. I am very much disappointed in the white Cactus Dahlia Constance. What do others say? —T. WELCH.



DAHLIAS.—Mr. Charles Turner, Royal Nurseries, Slough, we are informed, proposes to make a special and very extensive exhibition of all the different classes of Dahlias—Show, Pompon, and single, at the meeting of the Floral Committee on Tuesday next, the 9th inst., in the conservatory of the Royal Horticultural Society, South Kensington. The present showery weather being extremely favourable for the Dahlia, a more than usually good and interesting display of fine blooms may be anticipated, and everyone knows that whatever Mr. Turner undertakes he will accomplish. The Exhibition will be continued up to and including Saturday the 13th inst.

— WE regret to have to announce the death of Mr. J. H. MANGLES of Valewood, Haslemere, which occurred on the 24th ult., at the age of fifty-two. Mr. Mangles was an enthusiastic horticulturist, his specialty being the Rhododendron; not the Rhododendron of the florist, but of the botanist, the various species of which he cultivated with great success. Mr. Mangles was an active member of the Council of the Royal Horticultural Society, and through his death the Society has sustained a very great loss.

— THE TAUNTON DEANE SHOW.—Mr. Iggulden writes to say that he was not awarded the first prize for vegetables as stated by “Visitor” in his supplementary report last week, but received the first prize for fruit, in which there were three classes provided. The report of this Show seems a little difficult to get correct and satisfactory to all.

— DOUBLE TUBEROUS BEGONIAS.—“J. J.” writes:—“I send you two Begonia blooms grown from Messrs. Laing's strain of seed. Will you please be good enough to give me your opinion of them in your ‘Notes and Gleanings’ column of the Journal?” Our opinion is that the blooms are splendid, and that the plants producing them must have been well grown. They are brilliant scarlet rosettes, surpassing any Turban Ranunculus we have seen, the largest flower being exactly 9 inches in circumference.

— RAINFALL IN JULY.—Mr. Newmann, in reply to Mr. James Shearer, states that the observations with regard to the rainfall in the month of July were made nearly in the centre of Cheshire, at 120 feet above sea level, and not near any hills. So far this year July has been the wettest month, other months having been unusually dry.

— DAHLIA MRS. DOUGLAS.—This fine variety was certificated at the last meeting of the Royal Horticultural Society at Kensington. It was shown by Messrs. Rawlings Bros., Romford, but in our report Mr. C. Turner was inadvertently credited with it.

— VARIETIES OF FRUITS.—“M. S.” writes:—“We are many times puzzled by the question, ‘How many varieties of fruits are there in cultivation?’ But, of course, the question is generally put by some one that is not aware of the number of new varieties that come out yearly both from our own and also from Continental growers. In a contemporary of recent date some enthusiast has put himself to the trouble of ascertaining how many varieties of fruits are known at the present time, with the following result:—Cherries, 209; Apricots, 60; Peaches, 239; Pears 1087; Plums, 297. Apples have not been taken into consideration.”

— LEMONS IN THE OPEN AIR.—Mr. W. Harris, Bradford House, Barnstaple, writes:—“When walking through the gardens of Watermouth Castle the other day I saw a fine Lemon plant trained against a wall in the open, without any protection whatever, bearing a fine crop of fruit in every stage of development. I was informed that it has been planted for many years, and is rarely seen without ripe fruit and flowers on it at the same time, with fruit in all the intermediate stages. This indicates the mildness of the climate around Ilfracombe, in the imme-



diate neighbourhood of which these gardens are situated. Peaches were here also on the open walls very plentiful and good."

— MESSRS. SUTTON & SONS' STAND AT THE HEALTH EXHIBITION.—The *Pictorial World*, on the 21st ult., published a very successful engraving of this stand, which occupies 600 cubic feet of space, and is such a prominent object at the entrance to the principal arcade. In referring to their illustration our contemporary observes:—"At first sight the question might be asked, 'What have seeds and root crops to do with health?' but if such a question were asked the answer is certainly easy enough. Seeds, in their relation to health, are as important as every other article of food. Bad or imperfect seed means poor and imperfect crops, and these again react upon the constitutions of those who partake of the fruit of those crops; poor wheat makes poor flour, and consequently bad bread. Poor pastures, the result of bad seeds, can only result in half-fed cattle, the result being poor and ill-fed meat containing none of those essential qualities to life which animal food are supposed to yield to the consumer. Thus we see, without going further, how essential to health is good and properly selected seed, and for which indeed Messrs. Sutton & Sons of Reading have been for so many years celebrated."

— WE have received from Messrs. Ant. Roozen & Son, nurserymen, Overveen, Haarlem, Holland, a large box of GLADIOLI, containing spikes of sixty varieties of the named Gandavensis hybrids. Amongst the most attractive were the following:—Africaine, dark slate on scarlet ground, with scarlet and white stripes. Ambrose Verschaffelt, delicate rose on white ground, flaked with crimson. Astree, white, heavily flaked with rose. Eugène Scribe, tender rose, blazed with carmine. Ginevra, cerise, striped with white. La Perle, rosy lilac; a beautiful variety. La Vésuve, scarlet of the greatest brilliance, smooth and fine; a splendid Gladiolus. Le Dante, deep red, with white spots. Meyerbeer, orange-scarlet, with purplish blotches. Ovide, carmine, with a white stripe down each segment. Schiller, straw colour, with crimson blotches. Virginalis, white, flaked with rose. Both the spikes of bloom and the individual flowers were of good size, as, indeed, were those of all the other varieties sent, and these somewhat fickle flowers appear to thrive well in Holland.

— LAYERING CARNATIONS.—A paper was read on the 22nd of August at the meeting of the Walkley (Sheffield) Amateur Floral Society on the Carnation and Picotee, by the well-known veteran cultivator Mr. B. Simonite. In the course of the discussion which followed a question was asked by a member as to the *modus operandi* to be observed in layering, which brought a reply from Mr. Simonite to this effect. In making the cut the usual mode is to insert the knife immediately below the joint, cutting the stem half through, and then turning the knife to make the upward cut; but years ago, finding the inconvenience of this method, he had invented a knife having an extremely narrow and thin blade, with cutting edges on both sides and a fine needle-like point. This he could readily pass through the centre of the stem an inch above the joint, the slit then being made downwards to the required depth below the joint, the knife being withdrawn and the horizontal cut made in the usual manner. He said he had found in his large collection this mode to be one by which a great saving in time was effected, and also more ease and convenience in doing the work achieved.

— VINES IN FRANCE.—"M. S." observes:—"Of all the elements of wealth in which France is so rich none contributes more powerfully to the prosperity of that country than the Vine. The soil and climate, the system of land tenure, and the genius of the people are so adapted to its cultivation that France has long distanced all competitors as a producer of Vines. She exports more than all the other countries put together; and though Grapes ripen to perfection in Italy, Greece, and Turkey, in Spain and Portugal, Germany and Austria, and throughout Western Asia, where it appears to be indigenous, in Australia, S. Africa, and the United States of America, from the plains of Champagne to the shores of the Bay of Biscay, and from the banks of the Loire to those of the Rhone the cultivation is general. It occupies over 5,000,000 of acres, gives employment to at least 7,000,000 of people, and produces on an average every year a harvest valued at 120,000,000 sterling."

— DEATH OF M. EUGENE FOURNIER.—In announcing the decease of the above well-known botanist the *Illustration Horticole* observes that he "was a doctor of medicine and natural history, and in his numerous

works he proved himself a learned and impartial writer. His memoir on Tuberous Begonias, his work on the Crucifers, and miscellaneous contributions on botanical subjects, afford sufficient testimony of his extensive knowledge."

— GUNNERA MANICATA.—In giving a coloured figure of this handsome Gunnera the *Illustration Horticole* remarks that it was introduced by M. Linden from Brazil about ten years ago at the same time as Gunnera Brephogea, which was found growing on the roots of an epiphytal Orchid from New Grenada. *G. manicata* has large, bright green, deeply cut leaves, giving it a fine appearance for prominent positions in gardens.

— CYPRIPIEDUM CILIOLARE.—An excellent coloured plate of this Cypripedium is given in *L'Illustration Horticole* for August, together with a description by M. E. Rodigas. It is there pointed out that it is a near ally of *O. superbiens* (*C. Veitchianum*), but that it is distinguished by its more numerous veins and hairs on the margin of the sepals and petals, a shorter lip, and large staminode. In the figure the colour is also much darker than is usually seen in *C. superbiens*, or than we have seen in *C. ciliolare*. The foliage is handsomely marbled.

— A PARAGRAPH appeared in our last week's issue on the Stone Pine taken from the *Irish Farmers' Gazette*. We are informed that it appeared as an original article in "The Garden," and regret that we should have been so misled; but there is no guarding against such pitfalls if a respectable paper like the *Gazette* fails to acknowledge the sources from which it makes its extracts.

— THE following cutting from the *Barnet Press* has been sent to us for publication:—"Mr. Munro of Bulwer Road, New Barnet, has hit upon a device likely to prove of advantage to horticulturists. By the erection of a series of glass walls he has converted an acre of average garden land into a surprisingly productive plot, on which at this moment he is able and willing to show to any visitor who likes to call nearly two tons of TOMATOES. The clusters hang in lusty groups and copious variety. Some are already richly coloured, ready for the table; others are intentionally kept back, so as to secure a regular succession of pickings. The garden presents a picture well worth seeing. We understand his invention has been patented, and its simplicity is such as to render it possible to offer it to the public as a remarkably inexpensive arrangement."

#### NON-PRUNED APPLE TREES.

MR. WAITING will obtain more evidence in support of his statement that Apple shoots will bear fruit the following season after the shoot is formed than "Non-Believer" will for the observation that they will not do so except by "accident." "Non-Believer's" remark that "The first year leaf buds only are produced on the young Apple shoot, the second year fruit buds, and the third year fruit," will not apply to all cases. If an Apple tree is properly managed fruit buds will appear on the free-bearing varieties over a length of 10 inches at least on the same season's growth, not measuring from the tips of the shoots, but from the base upwards—Keswick Codlin, Ecklinville Seedling, Stirling Castle, Lord Suffield notably do so. Standard Apple tree pruners should take particular note of the following remarks by "Thinker" in last week's "Journal":—"When the head of a standard Apple tree is formed, and a sufficient number of branches provided, I am inclined to think the less pruning is indulged in the better will be the crop; but at the same time I think that to leave a tree unpruned from the first—from the time it leaves a nursery—is one of the greatest mistakes that can be made."

It is quite certain that the management of fruit trees is imperfectly understood by many people. Many gardeners go to extremes in whatever system of management they have in view. A gardener, for instance, may happen to recommend the pruning of a pyramid Apple tree as a means of the tree producing good fruit. This statement would be given in good faith. Many have the impression that this would mean "stumping" them in, and go to that extreme accordingly. Another gardener, when recommending the non-pruning of standard Apple trees, would not allow the trees to grow into a thicket for the want of a little timely thinning of the branches.—A. YOUNG.

I HOPE Mr. Waiting's personalities—always a weak sign—relieve him; they do not trouble me; and as to his portentous intimation not to notice my communications in future, I trust I shall survive that and live at least to notice his letters to you, not in the hope of altering his opinions in any way, but for the sake of your readers. In reference to Apple trees, when Mr. Waiting first wrote he spoke of trees bearing fruit on the last year's shoots as if it was their common habit as one of the consequences connected with his practice, and I pointed out that such a



thing could not be regarded in that light, for it is *not* the habit of the Apple to bear on the last year's shoots except from accidental causes, or causes that are sufficiently exceptional to be called "accidents." I accept Mr. Bunyard's statements; but may I ask, Can the fact of his trees that had been moved last year, or not cut back in consequence of the dry spring, be regarded in any other light than that of an accident? In general culture the Apple bears as I stated, and it is the rule and not exceptions we have to consider, and Mr. Waitings' notes are derived from the too short practice and too exceptional circumstances to be of any value.—NON-BELIEVER.

#### AUTUMN-SOWN ONIONS.

IN the notes recently published on this subject none of the writers lay stress upon the importance of having an early batch ready in March, with bulbs that are really useful, to follow the stored spring-sown Onions. Nor could they well do so, for they were all too late. Yet the fact could hardly be forgotten so soon that the mild weather of last winter caused the stored Onions to start into growth so early that many a gardener had to eke out his supply by planting the sprouting stored Onions for use till the tardy late-sown autumn Onions were ready. It was from hearing complaints from those whose stored Onions were thus spoiled, and whose supply of really good Onions had failed, that I wrote the note on the Queen Onion which was published on June 12th, page 463. The matter appeared to me so clear, simple, and beyond dispute, that my note was a brief one. It pointed clearly to the importance of sowing in July; of autumn transplantation to rows a foot apart, the plants being 6 inches apart in the rows; and that the date given—July 15th—for sowing should not be thought so early as to induce premature bolting to seed. I told how, out of a row of 135, only five had run to seed, the remainder having good bulbs, many being 4 inches in diameter.

This year seed of the Queen for an early and midseason supply, with Tripoli Giant Rocca for late use, was sown on July 18th. The plants now (August 28th) are 5 to 6 inches high, and they will soon be transplanted to the permanent bed, where I shall confidently look for a supply of useful-sized bulbs next March. They will probably be required, for the spring-sown crop has suffered so much from the excessive heat that it ripened prematurely and the bulbs are small.

The unanimity of Mr. Muir, "B.," and the "Man of Letters," as to late sowing is so singular that I as a seeker for information should be glad to know the reason. Is it for fear of premature running to seed? Surely not, for the garden in my charge is near the south coast. Yet the percentage of loss from that cause is very low. Is it that late sowing is supposed to promote late keeping? July-sown Tripoli Onions ripening in about a year from the date of sowing are found to keep well through the following winter. Whence, therefore, is the advantage of sowing later?—EDWARD LUCKHURST.

#### SANDY HORTICULTURAL SOCIETY.

AT this popular annual gathering in the pretty and suitable park of J. N. Foster, Esq., Sandy Place, a large and successful Show was held, and, as the weather was auspicious, a great concourse of visitors was attracted to Sandy. The Exhibition—which embraces, in addition to horticulture pure and simple, farm and market-garden produce, poultry, butter, eggs, bread, honey, bees, cage birds, &c.—was held in about a dozen large marquees; and as the entries exceeded 2000 in number some idea may be formed of the magnitude of the undertaking; but the sound practical management at Sandy, and the system adopted of keeping the tents for the various departments, and the exhibits also nearly upon the lines of those of previous years, has tended to make the work of the Committee run much smoother than is often the case at exhibitions of less importance; but as "Onward" has not only for a long time been the watchword of the Society, but the true definition of its actual and continuing progress, it would seem likely that the Committee must, if the present rate of advance be continued, and, as tents are not yet constructed of indiarubber, be compelled to add materially to their amount of canvas on the next occasion. The effect of the fine plants shown on Friday was much marred by their being crowded on to a massive stage about 8 feet high, on the top of which peered lofty Fuchsias of equal height—something after the style of the hero of Waterloo at Hyde Park—neither the names of the plants nor the colours of the flowers being discernible on the shady side of the tent, and in the case of some fine Coleuses and foliage plants the under side of the leaves or the outlines only of the plants was visible. As this tent also contained the best of the Roses and some very beautiful cut flowers, it was impossible in the narrow space left for visitors to appreciate fairly the admirable exhibits packed into so small a compass and so unnecessarily elevated.

The competition in the open class for a collection of ten stove and greenhouse plants in bloom was well sustained between Mr. F. Mould of Pewsey, Wilts, a new and strong exhibitor of plants at these shows, and Mr. E. Tudgey of the Exotic Nurseries, Waltham Cross, the former having grand specimens of Allamanda Hendersoni, Clerodendron Balfourianum, Ixora Colei, Erica insignis, Dipladenia Brearleyana, and Vallota purpurea. Mr. Tudgey, who closely followed with the second prize, had a very fine Anthurium Schertzerianum and Clerodendrons fallax and Balfourianum in excellent condition. Mr. Rabbitt, gardener to General Pearson, The Hazels, Sandy, also entered the lists, and was but little behind in the race with model specimens, including Stephanotis floribunda, Allamanda Hendersoni, Ixora Fraseri, and Clerodendron Balfourianum. For the six stove and greenhouse plants open to all except nurserymen, Mr. G. Redman, gardener to J. H. Goodgames, Esq., Eynesbury, St. Neots, was first, having good and well-flowered plants of Statice profusa, Bougainvillea glabra, and Justicia carnea. Foliage plants were also well shown by the same exhibitors. Mr. Rabbitt was first with six well-grown Coleus. Mr. P. Meyer

of Orwell and Mr. G. Claydon, gardener to J. H. Astell, Esq., Woodbury Hall, also showed well here, and were placed second and third respectively; but the height at which they were staged precluded scrutiny. The same remark also applies to the Fuchsias, which appeared to be very creditable specimens, Mr. Rabbitt again coming in first. For six stove and greenhouse Ferns, Mr. Tilbrook, gardener to B. Brown, Esq., Houghton, Hunts, was first, and Mr. Claydon second. For four British ferns Mr. Tilbrook was also first, and the Rev. J. Richardson, Sandy Rectory, second.

Cut flowers were a good feature in the Show. For forty-eight Roses in the open class five stands were staged, Messrs. Paul & Son, The Old Nurseries, Cheshunt, coming in well first. Amongst their best flowers were A. K. Williams, Pride of Waltham, Horace Vernet, Marie Verdier, Charles Darwin, and a bold bloom of Black Prince, now almost a stranger on the exhibition stage. Mr. J. House of Peterborough was second, having good blooms of Alfred Colomb, Niphetos, A. K. Williams, Merveille de Lyon, Duke of Wellington, Jules Chrétien, and Heinrich Schultheis (as exhibited not unlike Henri Ledecchaux); and Mr. Laxton of Bedford third with smaller but bright blooms. For twenty-four Roses (nurserymen excluded) there was strong competition. The Rev. W. H. Jackson of Stagsden Vicarage, Bedford, was first, having good autumn blooms of François Michelon, Reynolds Hole, Pierre Notting, Marquise de Castellane, Emile Hausberg, and J. S. Mill. The Rev. E. L. Fellowes of Wimpole Rectory, Royston, was second, and Mr. E. B. Lindsell of Hitchin third. There was also fair competition for the season in the minor classes, Mr. Lindsell being here first for six blooms. Dahlias were well shown by Messrs. Paul & Son, Messrs. H. Cannell & Sons, Swanley, but not for competition; and Mr. Laxton showed a fine stand of singles, set up on long stems, this less formal mode appearing to show off these attractive flowers to best advantage. For twelve Show Dahlias in competition the Rev. E. L. Fellowes was first, and Mr. Redman second. For six blooms, first Mr. Fellowes, second Mr. P. Meyer; and in the amateurs' class Mr. R. L. Clarke of Cambridge was first with six very creditable flowers. For twenty-four Gladiolus Mr. J. House was first with an excellent stand, Mr. Thornton, cerise and white; Huntsman, scarlet; Sir M. Lopez, light scarlet; and Queen Mary being some of the most attractive varieties. Mr. P. Meyer was second. African Marigolds from Mr. Tilbrook were unusually good. Zinnias, doubtless as the result of the recent dry weather, were in splendid colour and form, Dr. Swain of Arlesey and Mr. Matthews, gardener to Mr. C. H. Wood of Morhanger, taking the lead in different classes. Asters were only indifferent, the best coming from Mr. W. Apthorp of Cambridge and Mr. Fellowes. Messrs. Cannell showed in their usually attractive style stands of double and single Zonal Pelargoniums and Verbenas; Messrs. Laing & Son, Forest Hill, Hollyhocks; and Mr. Laxton, from the Girtford Experimental Gardens, an attractive stand of hardy cut flowers, not for competition. An effective and well-designed model flower garden, showing considerable artistic skill and much laborious detail, was also shown by Mr. Rabbitt, and was a source of much attraction.

Fruit, although not, as might be foreboded from the season, shown in usual quantity, was of excellent quality. For the basket of six varieties, Pines excluded (Pines from some unexplained cause are never seen at Sandy), Mr. Tilbrook was first with good Hamburgh and Muscat Grapes, Washington Plums, very fine; Peaches, Nectarines, and Morello Cherries; Mr. Allis, gardener to Major Shuttleworth, Oldwarden, coming in a good second; and Mr. R. Carter, Waresley Park, third. Mr. White, gardener to Capt. Stanley, Laystone Hall, Cambridge, had a good stand, which contained more than the specified number of varieties. For two bunches of Black Hamburgh Grapes Mr. T. H. Murfin, Great Staughton, Hunts, was first with large and handsome, but not highly coloured bunches; Mr. Tilbrook second with smaller but better finished bunches; and Mr. Allis third. For two bunches of any other variety of black Grapes Mr. Tilbrook was first; Mr. Charles Forbes, gardener to E. Bird Foster, Esq., Ansley Hall, Cambridge, second; and Mr. Allis third with good and well-coloured Lady Downe's Seedling. For two bunches of Muscat of Alexandria Mr. Jno. Day, gardener, Norton Hall, Daventry, was first, Mr. Forbes second, and Mr. Allis third. For two bunches of white Grapes Mr. Allis was first with very fine Buckland Sweetwater; Mr. Day second; and Mr. Ellis, gardener to Mr. Orr, Pemberley, Bedford, third with good Foster's Seedling not quite finished. For six Peaches Mr. Claydon was first, and Mr. F. White, Sandy, second. Six Nectarines, first Mr. G. Dale, gardener to J. N. Foster, Esq., Sandy Place; second Mr. Tilbrook. Green-flesh Melon, first Mr. Allis, second Mr. Ellis. Scarlet-flesh Melon, first Mr. Waller, gardener to James Howard, Esq., M.P., Bedford; second Mr. Ellis. Six Figs, first Mr. Waller. Plums were shown in large quantity, good colour, and well ripened. Apples were good for the season, but Pears only in limited quantity. For the basket of fruit in the amateurs' class Mr. H. Matthews was first, and Mr. James Hardwicke, Great Staughton, third.

Vegetables although good were not equal to the usual Sandy standard, the absence of good Cauliflowers being especially noticeable. Potatoes were well ripened and good, but not of outrageous size. These consisted mostly of the ordinary show sorts. As an early kind Sutton's First and Best seems to be taking a leading position; and Carter's Early Eight Weeks, another leading early, were well shown here, as at several other exhibitions this season. In the market gardeners' class Mr. Laxton was placed first amongst the white kidney varieties with a white-skinned Beauty of Hebron; and Mr. A. Deverill of Banbury showed fine specimens of Snowdrop not for competition. For the collection of vegetables Mr. J. Day, Norton Hall, was first; Mr. Ellis, Pemberley, Bedford, second; and Mr. G. Vyne, gardener to H. Thornton, Esq., Kempston, Bedford, third.

For the special prize offered by the President of the Society (F. Pym, Esq.) for the best collection of ten varieties of vegetables grown by market gardeners in the parish of Sandy, Mr. Laxton was first with fine white Beauty of Hebron Potatoes, Evolution Peas, Sandy Prize Onions, good Milan Turnips, Conqueror Tomatoes, &c.; and Mr. F. Davidson, Girtford, was second. Mr. Laxton also showed his prize collection of Evolution Peas, some enormous Girtford Giant Beans, and Sandy Prize White Spanish Onions, the successful competitors for these prizes being: for Peas—first, Mr. T. Brigstock, Leicester; second, Mr. Marriott, Skirbeck, Boston; third, Mr. G. Steggles, Hadlow, Tunbridge. For Beans—first, Mr. Brigstock; second, Mr. Steggles. For Onions—first, Mr. Waller, gardener to Jas. Howard, Esq., M.P.; second, Mr. Marriott; third, Mr. Edward Purchase, Bridgnorth. Mr. H. Deverill of Banbury also showed splendid specimens



of his Rousham Park Hero Onion and a new Globe variety called the Wroxton, which, if it ripens under ordinary circumstances in this country, will be a gain amongst large varieties.

### FLORAL DECORATIONS AT NEWCASTLE.

ON the occasion of the recent visit of the Prince of Wales to Newcastle-on-Tyne the floral decorations were of a most extensive kind. The central station was entrusted to Messrs. W. Fell & Co., Wentworth Nurseries, Hexham, who discharged their duty in a most efficient manner. Huge Coniferae and Scotch Firs were employed to form avenues where the Royal cortege passed, and from the roofs in line a number of hanging baskets of Ferns formed a most graceful finish. Stephenson's monument was entrusted to Mr. W. J. Watson, nurseryman, Fenham, and right well he did his work. The base was adorned with *Gynierium argenteum*, springing from a group of small kinds of Coniferae, relieved with flowering *Ericas*, *Pelargoniums*, &c. The same firm decorated the Bank of England. Messrs. Finneys, seedsmen, had their shop front and the balcony above very finely adorned with baskets of Ferns, *Gladioli*, and Sunflowers, and a quantity of Mountain Ash, which formed a fine effect viewed from the distance. Mr. Andrew Balfour also had his premises well adorned with a fine lot of stove and greenhouse plants; indeed, in every direction the floral decorations were of the most lavish and elaborate description. The banqueting hall at Jesmond was embellished by Sir W. Armstrong's gardener, Mr. Elliott, and was a great success. As Sir W. Armstrong has now given to the people of Newcastle parks exceeding in value £150,000, I may, with the Editor's permission, give your readers some account of them in a future issue.—BERNARD COWAN, *South Shields*.

### MESSRS. WEBB'S SEED FARM.

FOR many years past I have had a great desire to inspect Messrs. Webb's seed grounds at Kinver, near Stourbridge, but it was not until quite recently, when in the midland counties, that my desire was fully gratified.

A short drive from Stourbridge brought us to Wordsley, where are situated Messrs. Webb's offices and warehouses. The ledger office, which I looked into in passing, is a spacious room containing forty clerks busy at work. Overhead there are smaller offices for the heads of departments and the principals, but the stores surpass all, and are of colossal proportions. The principal store house is 180 feet in length, 60 feet in width, and five storeys high. The different floors are reached by wide staircases, and both outside and inside there are numerous powerful lifts for the speedy lifting or lowering of goods. On each of the floors there are numerous improved machines for cleaning and separating seeds. Nothing like the bulk of the seeds was there, but harvesting was going on. On one of the floors were eight or ten cartloads of beautiful seed of Webb's Kinver Marrow Pea. What a demand there must be for this sort! Apart from the main building there are extensive Potato stores, Clover stores, Wheat and cereal stores, Hop and wool stores, seed trial houses, packing sheds, and workshops, as it was in these that the magnificent new stand brought out at the Royal Agricultural Show at Shrewsbury was made, and further there is just now in course of erection a seed corn store which measures 120 feet in length by 45 in width, and it is four storeys high. These are all substantial well-finished buildings, replete with every convenience.

In leaving this metropolis of seed warehouses, a drive of five miles through a beautifully wooded and fertile country brought us to the Kinver seed farms. These, as I have before stated, are 1600 acres in extent, and are mostly freehold. Extensive and favourably situated though these Kinver seed farms are, they do but a small share in supplying the direct demands of the multitudes of customers. In other parts the seed grounds run up to 16,600 acres, and these are mainly situated in the sunny south. The farms at Kinver are mostly freehold, and the others are principally leased by Messrs. Webb, and are managed after their own systems, which must be more advantageous than the not uncommon plan of having one field of seed here and another there, as they can find a farmer to oblige them, irrespective of any knowledge he may possess of the cultivation of high-class seeds. The farms at Kinver, however, play the most important parts of all, as it is there the stocks are grown and selected and their merits proved. For instance, of many of our most choice vegetable and flower productions I saw from 3 to 10 acres in a seed-bearing condition, but this had nothing to do with supplying the direct demands of customers, as these "patches" are only grown to supply seed for producing seed again on a much more extensive scale in other parts of the firm's possessions. The careful way of dealing with the stock is of the utmost importance and highly satisfactory. The Kinver farms occupy an elevated position. The land is cultivated to the highest degree of productiveness, the crops are of the choicest, and the results are altogether gratifying, everything of importance being done under the supervision of the principals.

The department most interesting to garden cultivators are extensive quarters devoted to the vegetable and flower trials. The quality of the seeds and the value of the produce can be seen at a glance. Sunny fields and fertile soils are divided into long quarters, each strip being about 20 yards in width, with walks between, and it is on these that large masses of flowers and vegetables are growing. Only a small row or two of many varieties might be deceptive, but the large quantities here indicate the true character of the subject very decidedly. Of Peas, for instance, 130 kinds have been on trial growing on the Chiswick trial style. Every Pea of recent introduction was to be seen there, and many of the old varieties had not been forgotten, although it could not be the unsurpassed merit

of these which secured them a position, as in this respect they were surpassed, compared with several varieties recently introduced by Messrs. Webb. Of these the New Wordsley Wonder, a blue Marrow of splendid qualities; Triumph, Kinver Gem, Electric Light, and Stourbridge Marrow deserve special mention, as they had no equals in the trial grounds. Having tried them all in my garden, I could confirm this. Prominence, though, is not given in the trial grounds to Messrs. Webb's own varieties of anything, as should they have the best soil, the most manure, and the most favourable situation the advantages of a fair and competitive trial would be destroyed; but this they have not, and it remains for them to display their own individuality. In writing thus the valuable contents of Messrs. Webb's establishment are not the sole cause of my exultation, as I cannot forget my own grand crops of Webb's Banbury Onion, Schoolmaster Potato, late Peas, Kidney Beans, prolific Cucumbers, luscious Melons, and others the produce of their seeds. Having an eye to future supplies, I questioned Mr. Webb as to the advantages of the present harvest, and his reply was very decided, that "they had never experienced such a magnificent harvest." Those who know, or have yet to learn, the value of good seeds will rejoice with me in this.

Besides the vegetable and flower seed trials, there are others going on not far off with sorts of Oats, Barleys, Wheats, field Turnips, Mangolds, &c., and through these are exhibited the splendid qualities and advantages possessed by Messrs. Webb's new and improved varieties. Mention may be made of the flower bulb trade, as this is an important item in the current work, and tens of thousands of fine importations are dispatched weekly. Before leaving Stourbridge I experienced much pleasure in inspecting another of Messrs. Webb's industries in the neighbourhood. This is a large glass factory, where the highest style of this description of work is practised in all its artistic details. It is apart altogether from the seed business, but to me they almost seemed allied, as the French artists were painting on beautiful imitations of flowers on the choicest of wares, and probably few of those who grow Webb's lovely annuals know that they can, and may be are, cutting and arranging them in Webb's exquisite flower glasses.—A LORD LIEUTENANT'S MAN.

### STRAY NOTES.

IN reply to "J. B. R.," this is the first year, as far as I can remember, in which my Peaches and Nectarines have ripened perfectly without being molested by wasps. I believe, however, that my garden is exceptionally fortunate in this respect.

I CAN bear witness to the fact of certain sorts of Apples commonly bearing fruit on the last year's wood, but my testimony is not needed after that of Mr. Bunyard.

I BELIEVE the drought has been as severe here in Mid-Suffolk on gravel soil as anywhere in England. The result which most catches the eye is that our Beech trees are fast losing their leaves, and to all appearance another week or ten days will find some of them as bare as at Christmas. They have been quite brown for a fortnight, and the freshly fallen leaves are now up to one's ankles in places. Oaks standing among them are, on the contrary, very green, and have made long shoots.

I AM interested in your reply to your correspondent, "John Hopper," that a tenant on leaving his occupation has no power to remove Rose trees which he has planted himself without the consent of the owner of the land. Am I right in supposing that, though he may not remove them, he has the legal right to destroy them—by cutting through the stems of the standards, for instance? If this be so, though I should be the last to recommend such a wanton act, would not the legal right to do it give him some help towards a compromise—that he and the landlord should share the Roses, for instance? Can a landlord prevent a tenant while he continues in his tenancy from digging up his Roses? And if he cannot, can the landlord claim compensation if the tenant subsequently gives notice to leave?—A. F. M.

[A tenant, not being a nurseryman, who is leaving his holding, cannot dig up his Roses, nor has any legal right to cut through the stems of standards, or in any other respect to injure anything he has planted. On the contrary, it is an act of felony to do so in the case of trees above a certain trifling value. This is all we can say on the subject, and if further information is needed we advise persons who are interested to apply to a solicitor.]

### THE PLANT STOVE.

THE hot weather of the past few weeks has caused an extra amount of work in the plant stove. Too much moisture cannot be kept about if you wish to grow plants well. Crotons should be syringed at least three times a day, as they are very liable to get thrips or red spider on their young foliage. It is a good plan to syringe them with the usual mixture of petroleum and water in the evening about once a week, which not only kills thrips, but also does away with that small scale which infests Crotons so much. Alocasias and Anthuriums should be kept well sponged, or their fine foliage will soon get disfigured. Dracenas also require sponging, as if syringed too much the leaves will soon decay close to the stem. Look closely after all Ferns that require heat, as they are very apt to have the brown scale underneath the fronds. If Dieffenbachias are grown they should be carefully looked after, and the young leaves sponged, or they will soon get covered with green fly, which will quickly spread to every-



thing else. Ixoras are also very subject to thrips. Where Orchids are not grown in the same house as plants green fly and thrips can easily be got rid of by fumigation, but it is very injurious to the foliage of most Orchids. *Cyperus alternifolius variegatus*, *Fittonias*, *Panicum variegatum*, *Peperomia*, *Phyllotenum Lindenii*, *Pilea*, *Sonerila*, and *Tradescantia* should be grown in quantity, as they will be found to come in very useful during the dull winter months.—A WORKER.

### THE LONDON PARKS.

WEATHER has a great effect upon the appearance of the bedding in the public parks as everywhere else, and, the present season having been an exceptional one as regards heat and absence of rain, it is not surprising that some deficiency is observable in even the most favoured. The three distinct styles of planting now followed have, however, been differently affected; in some cases the season has evidently been beneficial, in others quite the reverse. For example, the plants employed in carpet-bedding need a high temperature and exposure to sun to ensure the development of those rich tints which form the chief attractions of this method; accordingly they have been exactly suited this summer, and in the majority of cases such beds have been and still are in admirable condition. The designs are well filled up, and the clear bright colours of the *Alternantheras* appear to excellent advantage in contrast with the neutral-tinted *Sedums* or *Mesembryanthemum cordifolium*. The ordinary *Pelargonium* style of bedding has, on the contrary, somewhat suffered. Even with the most careful and constant attention to the supply of water the plants have made less growth, produced fewer flowers, and have not retained them so long as in other seasons. The sub-tropical plants, too, have made less growth in most instances, except where their position is low, moist, and shaded. In such a season the Superintendents have many difficulties to contend with, and their success in making the displays effective is the more praiseworthy. But in comparing the parks it must be borne in mind that they are very differently situated, and this has much to do with their relative merits. In the east of London Victoria Park is in the centre of a densely populated and smoky district, one of the least favourable to gardening imaginable. Regent's Park, again, at least that portion of it devoted to bedding, is not much better—indeed in some respects it is worse than Victoria Park, as the beds are so closely overshadowed by trees that the plants often become drawn, weak, and comparatively flowerless. Finsbury Park is a decided improvement; it is partially out of the smoke range, elevated, and consequently enjoying a purer atmosphere, though the position is much exposed. Hyde Park also shows the advantage of its western situation in the freer growth of the plants and brighter colour of the flowers. The low and proportionately moist position occupied by Battersea Park can be fully appreciated in a season like the present, while Hampton Court is quite beyond the evil influences of the London atmosphere. When visiting and criticising the respective displays these facts must be borne in mind, as they will assist the observer in forming a more accurate judgment of the taste and care shown in their arrangement or management.

It often becomes a matter of importance with visitors to London to accomplish as much as possible in a short time, and a day devoted to a tour of the parks is, perhaps, all they spare. In this case strangers often find it difficult to plan their journey satisfactorily, and for their benefit it may be briefly indicated how all the London parks can be included in one day's journey. Starting from Liverpool Street station, the Great Eastern terminus, Cambridge Heath is the nearest station for Victoria Park, a few minutes' walk bringing the visitor to the principal gate. By leaving the park at the opposite end train can be taken from the North London station to Finsbury Park. Returning to King's Cross a 'bus will convey the traveller to Regent's Park, and a similar conveyance will take him thence to the Edgware Road for Hyde Park. There the principal flower beds are parallel with Park Lane, so that by entering at the Marble Arch gate and quitting it near Apsley House, the most important part of the display will have been seen. From there it is a short walk to Victoria station, from whence Battersea Park can be reached by train. By starting in good time in the morning no difficulty will be experienced in accomplishing this tour, and if it is desired to occupy another day in a similar manner Chiswick, Kew, and Hampton Court can be easily visited.

Following this plan the chief features of the establishments mentioned may be pointed out, commencing with

#### VICTORIA PARK.

When this park is entered by the gate nearest the station already named the best mode of seeing the most effective portion of the bedding is by turning sharp to the right, and a short distance from the gate the first path to the left leads through the sub-tropical garden. This is sheltered by continuous mounds of shrubs and small trees, has a lake good size, and pleasant winding walks, rendering it one of the most pleasant portions of the park in hot weather. This season the shrubs and trees have suffered very much; the deciduous species are already fast losing their leaves, and the others have a browned withered appearance that is far from agreeable. Abundant beds of *Cannas*, *Ricinus*, *Acacia lophantha*, *Wigandia caracasana*, *Ficus elastica*, and *Solanums* afford, however, a welcome relief in their freshness, and by liberal watering the turf has been kept in excellent condition—a point of much importance, for nothing mars the beauty of bedding on lawns so much as a surrounding of withered grass. One feature is very notable, and, simple though it be, it is worthy of imitation in other places. In the majority of the shrub borders near the margin, where it is moderately sheltered, *Mignonette* has been most abundantly sown, and as a result there is a continuous carpet which

fills the air with its delicate fragrance. Springing from this the *Gladioluses* now furnish a most acceptable brightness of colour, and with a few other flowering plants add much to the beauty of the department. A large bed of the single white *Dahlia White Queen* is particularly attractive, the large pure white flowers being produced in great abundance, and contrasting well with the rich dark green foliage. An unpretentious rockery well clothed with *Sedums*, *Saxifrages*, and miscellaneous succulent plants, amongst which the *Agaves* are prominent, is materially brightened by a number of richly coloured and varied *Portulaccas*. These are dotted about in good-sized clumps, especially at the base of the rockery, where they grow most freely and flower profusely. Some mixed beds of *Ficus*, *Tobaccos*, *Variegated Maize*, and *Eucalyptus globulus* are effective, the last two plants being very striking, the *Eucalyptus* with its fine glaucous foliage and the *Maize* with regularly and boldly striped green and white leaves. A few small carpet beds in which *Alternantheras aurea* and *versicolor* form the chief features are also noteworthy.

Quitting the sub-tropical garden and crossing the carriage road we have in front of us a large semicircular turfed space occupied with the principal carpet beds. The background is formed of shrubs, a considerable breadth in front of them being devoted to miscellaneous flowering plants, such as *Phloxes*, *Gladioluses*, *Tagetes*, *Veronicas*, *Statice*, and *Pelargoniums*. Between these and the carpet beds are a few circles of *Pelargonium*, the two best being one planted with a mixture of the white-edged *Princess Alexandra* and *Violas*, and the other with *Pelargonium Nimrod*, which has large brilliant scarlet flowers in dense trusses, very effective. The pink-flowered *Christine* is also employed, but is in poor condition. The carpet beds are tastefully planted, but there is rather too large a proportion of the *Mentha Pulegium* as a groundwork, the majority of panels being small, and in some cases almost insignificant. The *Gibraltar Pennyroyal* has a fresh bright green tint, but it is somewhat too near the colour of the grass to be employed largely in beds cut out in the turf. As a groundwork the *Herniaria glabra* has a much better appearance, as can be well seen in Hyde Park, where it is this season almost exclusively employed. In one of the beds near those above mentioned it is, however, employed with excellent effect. This is what may be termed a six-lobed bed—namely, a circle with six small half-circles projecting from the sides. In the centre is a raised circle of *Herniaria*, in which are dotted small *Agaves* and *Sempervivums*, with bands of *Fuchsia Cloth of Gold* and edge of *Echeverias*. On a lower level there are triangular panels of *Alternanthera versicolor* margined with *Golden Feather* and *Echeverias*, while the whole bed is edged with the last-named plants. In another circular bed there is a central cross of *Alternanthera aurea* edged with *A. amoena* and *Echeverias*, a ground of the *Gibraltar Pennyroyal* with small bands of *Alternanthera versicolor*. The principal bed is long serpentine scroll about 3 feet wide, which is carpeted throughout with *Mentha* and margined with two rows of *Echeverias*. It is to this that a previous remark respecting the minuteness of the designs more especially refers, for the *Alternantheras*, such as *aurea*, *amoena*, and *versicolor* are mostly in circular patches of small dimensions, with central plants of suitable succulents, as *Echeverias* and *Sempervivums*. The preponderance of green gives the bed a rather dull appearance, and though it is so narrow a bolder system of planting would be much more effective, particularly as the bed occupies a prominent position near to the road.

Following this road to the left conducts the visitor to the brilliant display of *Pelargoniums* in a series of oblong parallel beds. There the object is always to produce as grand a show of colour as possible, and those who admire such effects can there see enough to satisfy them. *Pelargoniums* are freely employed, and the plants seem to have succeeded better there than they have in many other places, being until last week well furnished with blooms, though doubtlessly the rains have now somewhat lessened their beauty. The colours are so bright and are so densely massed that the effect is quite dazzling at first glance. *Pelargonium Henry Jacoby* is in first-rate condition, its rich dark flowers standing out prominently amongst all the others. For such methods of bedding-out this variety is unequalled in darkness of colour. As a fine clear true scarlet *Lucifer* is also very striking, the trusses being large and bold, while the best pink variety employed at Victoria Park is *Cleopatra*, which has obtained favour in several gardens as a free robust grower. *Centaureas*, *Gnaphaliums*, and ornamental *Beet* are used as marginal band, or, in the case of the *Beet*, as a central block, a few *Iresines* and *Coleuses* being similarly employed. Several handsome carpet beds are also noteworthy in this portion of the park, but the general plans are similar to those of the others already mentioned. The ground is of *Mentha*, with crosses or raised squares of *Alternantheras aurea*, *versicolor*, and *amoena*, lined in with *Echeverias* and *Golden Feather*. They are well filled and carefully planted, and the plants having coloured well gives them a very pleasing appearance.

#### VIPER'S BUGLOSS.

*VIPER'S Bugloss*, as the *Echiums* are commonly termed, is a showy genus of *Borageworts*. Unfortunately most of the species are either annual or biennial; and although they have been in cultivation from time to time they are generally lost sight of, owing probably to their shyness in ripening seeds in damp wet seasons, and also the partiality birds have for them.

Among the annuals *E. creticum* and *E. violaceum* are really handsome plants, and worthy of a place in every garden where a little time



can be devoted to them in the seedling stage. Although the seeds will germinate if sown in the border with the other annuals, it is always safer and more profitable to sow in pots and prick out where they are intended to remain.

*E. creticum*, the most generally grown of the two, is a charming procumbent species, and very suitable for a place near the front of the mixed border; and, indeed, might be judiciously mixed with summer bedding plants, so freely does it produce its pretty reddish purple flowers. It is never more than a foot in height, and of a dense compact habit. The leaves are lanceolate, hairy, and about 2 or 3 inches long.

feature to the surroundings. The variety *luteum* is very handsome also with bright yellow flowers.

The best mode of propagation is by seed, as the plants form long tap roots, which are very difficult to lift without damage.—M. S.

#### FERTILISERS FOR FRUITS.

In the cultivation of fruits we should not be misled by the fact that they do not in themselves exhaust soils, except in a slight degree. The constituent principles of fruits are, to a large extent, organic, and, therefore, derivable from water and the atmosphere. Sugar, the importan-



Fig. 38.—*ECHIU M ITALICUM*.

The reddish purple flowers are produced half way down the stem, and continue in unremitted succession all through the summer and autumn.

Amongst the perennials few stand our severe winters better than *E. italicum*, represented in fig. 38, and being easily affected by damp this should be guarded against in choosing positions. *E. italicum*, or Wall Viper's Bugloss, is a very charming plant for borders. With us it grows about 6 feet high, much branched, and densely covered with its large intensely blue flowers. These are very showy, and although they may not last longer than one day others are ready to open, thereby keeping up a continual succession. Unlike the others, not being in the least fastidious, it will grow almost anywhere, and nowhere appears more charming than in the open border or isolated in the pleasure or wild garden. Its flowers, quite conspicuous in the distance, lend a

principle of all fruits, takes nothing from the soil which has money value. The albuminoids, as has been shown, are very sparsely distributed through most of our fruits, and as they hold the nitrogenous element, it is seen that nitrogenous manures are not needed in large quantities in orchards or fruit gardens. Analysis of the Grape shows that in most varieties nitrogen, as supplied in manures, is not necessary. The results of analysis in the case of all fruits have been satisfactorily confirmed in my practical experience.

I have never found nitrogenous manures to exert marked specific influence upon any of my fruit crops, and years ago I discontinued their use. Fruit trees, shrubs, and Vines need nitrogen, but the spontaneous supply in soils is fully equal to the comparatively small amounts required. There is one mineral element which may be said to be the *pabulum par excellence* of growing fruits, and that is potash. It is certainly true that we cannot raise perfect and desirable fruits if we withhold this element from the soils of our orchards. When it is considered that we



influence growing fruits only through the act of rendering the tree or Vine vigorous and healthy, and when we further consider how much potash is required to maintain a normal condition in large fruit trees which are constantly under the pruning saw and knife, we obtain some correct views of the importance of this agent in soils. Both the fruit of the Vine, and the Vine itself, are great consumers of potash. The same may be said of most of our small or soft fruits.

It is not usually advisable to attempt to reclaim and render productive a worn-out Grape border, but if any satisfactory success is attainable it is only through a plentiful supply of good wood ashes and bone meal.

Twenty years ago I discovered that it was best, in preparing borders for cold Grape houses, to use plenty of wood ashes, and to place the fertilising materials in successive thin layers, rather than in the usual form of a mixed heap. I have one border prepared in this way which is made up of sixty alternating strata of different fertilising substances, and they have remained undisturbed for twenty years. The fruit product from this border has been uniformly excellent in quantity and quality from year to year, and renewal has not been necessary.

My view is, that the subterranean feeders of the Vine will follow what may be designated as vegetable instinct in procuring food, going no further for it than is necessary. If we place phosphoric acid, lime, potash, and nitrogenous salts in distinct layers, each resting upon one of good soil, we place our Vine roots, as it were, at a table spread with many dishes, and unerring instinct will guide in selecting what is needed to keep the Vine and fruit in the best possible condition.

The saccharine qualities of the Black Hamburgh and Frontignan varieties are greatly improved by having at hand plentiful supplies of potash. The wood ashes are the best possible source for this alkali. The German chlorides are next to be preferred, but they do not in vineyards meet the desirable results supplied by ashes.

The ordinary German kainit, as found in commerce, I class among the poisons in the list of assumed vegetable foods. I have never failed to observe injurious results in the use of these salts on my farm. Common salt is not a manure, and we may as well so decide once for all.

After an experience of nearly a quarter of a century in conducting an experimental farm, I have reached the conclusion that the growth of our fruits and most of our cereal crops is best promoted by the use of a fertilising mixture made up of finely ground fresh bones and good wood ashes. This mixture I arranged and recommended twenty years ago, and I find after persistent soil experiments, extending over many years, that I am using it more freely than ever.

My method of preparing it is to take six barrels of pure raw bone flour and twelve of good wood ashes, and mix them well together upon a shed floor, adding, during the mixing, twenty buckets of water and one barrel of gypsum or plaster. This mixture may be allowed to stand a few weeks, or it may be used at once if needed. If permitted to stand long it heats from chemical action, and the freed ammonia is in part fixed as a sulphate by the plaster, but not all of it.

For fruits of every kind I know of no better fertilising material, and as it supplies every needed element of nutrition, its effects are remarkably persistent and immediate.—Dr. JAMES R. NICHOLS (in *Transactions of Massachusetts Horticultural Society*).

#### NOTES ON TIGRIDIAS.

WE frequently see the assertion that cultivators are too apt to multiply species and varieties indefinitely, and to recognise distinctions that would be ignored by the systematic botanist. This is no doubt in many cases true, but in the present instance exactly the reverse occurs, and plants which are not only classed by the best authority in different genera, but even in separate divisions of the order, are brought together by gardeners and spoken of collectively as Tigridias, or familiarly, Tiger Flowers. The writer has adopted the generic characters given by Mr. J. G. Baker in his "*Systema Iridacearum*," as being the best authority on the subject, but only a few of the species there enumerated are dealt with, the majority being non-existent in this country. Eleven species and varieties are in cultivation, however, seven of them being undoubtedly Tigridias, three belonging to various other genera, and the remaining one, although offered by various nurserymen, has never been seen by the writer. The culture of these plants in the open ground is of the simplest nature, as they require only ordinary garden soil. If enriched by a little well-decayed manure so much the better, but I am of opinion that they are usually planted too late in the season. My practice has been for years to plant in the end of February or beginning of March, putting in the bulbs with a long dibble to the depth of at least 6 inches, with, so far, much better results both as to growth and quantity of flowers. As soon as the first frosts appear the bulbs are lifted, placed for a week or two in a dry airy place, and then stored away for the winter beyond the reach of frost.

The true Tigridias may be known by their regular flowers, the three outer petals of which are very large, and form a finger somewhat resembling a headless bird with expanded wings. The inner three are much smaller, and have a faint resemblance to a

fiddle, or even, by a slight stretch of imagination, to the Manx crest. The filaments of the stamens unite and form a long tube in which the pistil is enclosed, the awl-shaped stigmas showing over the top. The flowers last for one day only, but are produced in quick succession, and make up in brilliance for what they lose in durability. The leaves are comparatively long and narrow, with a peculiar corrugated appearance.

**TIGRIDIA PAVONIA.**—This best known and most generally cultivated form was introduced into this country from Mexico in 1796, and was first figured in the "*Botanical Magazine*," 532, under the name of *Ferraria Tigridia*. It is now so well known that it is unnecessary to give any description of it; but there are several closely allied forms which claim attention, notably the latest introduction—viz., *pavonia alba*, a truly magnificent flower, a floral aristocrat of the highest rank in bulbous society; in fact, quite the belle of the Tigers. The flower, when well grown, is fully 5 inches in diameter, of a beautiful creamy white, heavily spotted in the cup and inner petals with crimson. It appears to be quite as hardy as *pavonia*, and is a slightly stronger grower. **T. pavonia grandiflora.**—Apparently only a selected form of the type with larger flowers. **T. speciosa.**—A form with a slightly darker ground colour than *T. pavonia*, hardly so free a grower. **T. pavonia alba** is sometimes offered for sale as *T. speciosa alba*. **T. Wheeleri.**—A very dark blood crimson form with smaller flowers. Is very desirable for the sake of variety.

**T. CONCHIFLORA.**—Another Mexican plant with yellow ground and chocolate markings. This was not introduced until 1823, and is figured in Sweet's "*Flower Garden*," 128. It is hardly so robust as *T. pavonia*, and seems to prefer a richer soil, but it is a plant well worth growing. This concludes the list of true Tigridias, but we will just glance at a few generally known by that name but really distinct.

**T. HERBERTI** (*Cypella Herberti*).—This plant has quite a collection of aliases, having been referred to the genera *Moræa*, *Marica*, and *Polia* by various authorities. The bulbs are tunicated, membranous; the stems slender, with narrow leaves, and bear a succession of pretty orange-coloured blooms similar in form to the true Tigridias, and, like them, fugitive. This plant, which is a native of Buenos Ayres, may be grown as recommended above, but is perhaps better adapted for pot culture.

**T. UNDULATA** (*Ferraria undulata*).—A very curious and interesting native of the Cape of Good Hope, which, although introduced in 1775, is still not very generally known, its singular flowers of greenish-white spotted with brown not being so showy as those just noted. The principal distinction lies in the bulb, which is much more like a *Cyclamen* tuber than a true bulb.

**T. CÆLESTIS** (*Phalocallis plumbea*).—A true bulb, native of Brazil, with very pretty lilac-blue flowers, the inner tongue-like segments spotted with yellow and red; a much smaller flower than any of the preceding, and also one which does not flourish in the open except in very favourable situations.

As Tigridias when grown in pots seed freely, it would be interesting to see if by judicious selection and cross-breeding the individual flowers could not be induced to last a little longer.—G. GUTHRIE.

#### DEVON AND EXETER HORTICULTURAL SOCIETY.

THE summer Exhibition of this very old Society was held as usual in Vivary Park, Exeter, and, in common with several other societies in the west of England this season, gave every promise of renewed vigour and superiority. Vivary Park, though rather limited in extent, is very picturesque and most conveniently disposed, and, taking all things into consideration, it is really surprising how little interest the majority of the citizens of Exeter apparently take in the Society and its exhibitions. The attendance of visitors was certainly good, but nothing like the numbers that might reasonably be anticipated paid for admission. The Committee, however, numbers among its members several enthusiastic and practical men, and they are also fortunate in having the services of a courteous and hard-working Honorary Secretary, Mr. C. T. K. Roberts.

#### PLANTS.

Here, as might be expected after his repeated successes elsewhere, Mr. G. Lock, gardener to B. W. Cleave, Esq., Crediton, near Exeter, had it very much his own way—in fact, it is doubtful if the plants shown by him could be equalled by any other grower. With ten stove and greenhouse plants in flower he gained a valuable silver cup, his group including grandly flowered plants from 4 feet to 5 feet through of *Erica Fairriana*, *E. tricolor Wilsonii*, and *E. æmula*; and very fine specimens of *Ixora Duffii*, *I. Williamsii*, *Dipladenia Brearleyana*, *D. amabilis*, *Stephanotis floribunda*, *Clerodendron Balfourianum*, and *Allamanda Hendersonii*. Mr. G. R. Peed, gardener to Mrs. Ensor, was a creditable second, having among others medium-sized well-flowered specimens of *Ixora Williamsii*, *I. splendens*, *Allamanda Hendersonii*, *Clerodendron Balfourianum*, and *Erica tricolor Wilsonii*. With six plants Mr. W. Rowland, gardener to W. Brock, Esq., was placed first, his specimens of well-known kinds being small but well flowered. Mr. Lock had the best nine fine-foliaged plants, these consisting of large healthy specimens of *Croton Williamsii*, *C. Disraeli*, *C. Weismannii*, *Alocasia intermedia*, *Encephala-*



lartos villosus ampliatus, *Latania borbonica*, and *Areca lutescens*. Mr. Rowland obtained the second prize for a very creditable group, his best plants being *Cycas revoluta* and *Croton Disraeli*. Mr. J. R. Peed staged the best six fine-foliaged plants, among these being well-grown specimens of *Croton Warrenii*, *C. majesticus*, and *Carludovica Drudei*. Stove and greenhouse Ferns were particularly well represented. Mr. Lock had the best nine, these including very fine specimens of *Cyathea dealbata*, *Davallia polyantha*, *Nephrolepis davallioides furcans*, *Davallia Mooreana*, and *Adiantum trapeziforme*. With six Ferns Mr. W. Selley, gardener to Capt. Greatwood, was a good first, his plants of *Davallia Mooreana*, *Microlepia hirta cristata*, *Adiantum farleyense*, and *Asplenium bulbiferum* being particularly healthy and good. The second prize was rightly awarded to Mr. Rowland, his best specimens being of *Platynerium alcorni* and *Nephrolepis davallioides furcans*. All the principal prizes for single specimens were won by Mr. Lock, they including *Davallia Mooreana*, stove Fern; *Ixora Williamsii*, stove flowering plant; *Kentia Fosteriana*, fine-foliaged plant; *Gleichenia Spelunca*, very fine greenhouse Fern; and *Erica obbata purpurea*, 5 feet in diameter and beautifully flowered, greenhouse flowering plant. Mr. Rowland was also successful in these classes. British Ferns and Lycopods were well shown by Mr. Lock; Cockscombs by Mr. H. Sedgely, gardener to Lord Coleridge; Tuberous-rooted Begonias by Mr. J. Coombes, gardener to Capt. Thompson, and others. There were also classes provided for Zonal Pelargoniums, Achimenes, Lilliums, and Gloxinias, but none of these were particularly well represented.

## GROUPS.

Much importance is attached to the two classes provided for these, the Committee rightly considering that the competition evoked is both educational and interesting to the majority of visitors and exhibitors. They certainly do them well at Exeter, and very rarely do we see better materials or more tastefully arranged groups. The silver cup, valued £5, offered for a miscellaneous collection or group of plants arranged for effect on a stage 20 feet by 5 feet, was well won by Mr. Lock. The groundwork of this most pleasing group was composed principally of Maidenhair Ferns, springing out of this being a number of graceful Palms, *Eulalias*, *Francoas*, *Eucharis*, *Vallotas*, *Begonias*, *Crotons*, including two effective standard specimens of *C. Warrenii* and *Dracaenas*, the background being composed of Tree Ferns, *Cocos Weddelliana*, and other choice Palms. The second prize was awarded to Mr. W. Brock, but his group lacked quality, and was not so perfectly arranged as the preceding. The small groups, occupying a space 10 feet by 5 feet, were also very attractive. Mr. J. R. Peed took the lead with a very tasteful arrangement, the principal plants used being *Ixoras*, *Vallotas*, *Crotons*, *Palms*, including one of the best specimens of *Cocos Weddelliana* we have seen; *Ericas*, *Dracaenas*, *Eucharis*, *Eulalia* and other Grasses, and many Ferns. Mr. T. Bartlett, gardener to Lady Hotham, was a good second. In addition to these there were two effective groups arranged by local nurserymen and not for competition. That by Messrs. Lucombe, Pince & Co. occupied a space fully 30 yards long and 6 feet wide, and included many good half-specimens of various *Allamandas*, *Ericas*, *Dipladenias*, Tuberous-rooted Begonias, *Palms*, *Crotons*, *Marantas*, *Adiantums*, and other Ferns, besides a number of small Ferns, fine-foliaged and flowering plants, and, all being in good condition and tastefully grouped, presented a sight not often to be seen at provincial shows. Messrs. Robert Veitch & Son also had a very good group, among which were several good Palms, many choice Ferns and fine-foliaged plants, with sufficient Lilliums, *Vallotas*, *Begonias*, *Anthuriums* to give a bright appearance. They had also a considerable number of photographic views of various rockeries, ferneries, and other notable examples of landscape gardening for which they are justly renowned. Messrs. Veitch in addition made an effective display of cut Roses, Dahlias, Asters, herbaceous plants, and Tuberous-rooted Begonias, the latter being particularly good.

## CUT FLOWERS.

Mr. Dobree, Wellington, Somerset, was the principal exhibitor of Gladioli, and this well-known grower made a grand display of these noble flowers. He staged about ninety very fine spikes in all, and easily secured the premier award. Some of the best were *Hesperide*, *Muggy*, *Mrs. Knowly*, *Mrs. M. Smith*, *Meyerbeer*, *Miss Pince*, *Lulli*, *Leander*, *Col. Bovill*, *La Vesuve*, *Lord Beaconsfield*, and *Ronaldine*. With twenty-four Roses Messrs. Curtis, Sanford & Co., Torquay, took the lead, their best blooms being of *Madame Sophie Propot*, *Annie Wood*, *Dupuy Jamain*, *Marquise de Castellane*, and *Merveille de Lyon*. Captain Christy, Sidmouth, was second for twenty-four and first for twelve Roses, his best being *A. K. Williams*, *Abel Carrière*, and *Baroness de Rothschild*. Mr. J. Selway was also a successful exhibitor of Roses. The competition with Dahlias was not very close, but there were many fine blooms. Messrs. Curtis, Sanford & Co. had the best forty-eight blooms, such sorts as *Grand Sultan*, *Constancy*, *Georgiana*, *C. Ridley*, *Rifleman*, *Peri*, *Lord Chelmsford*, *J. W. Lord*, *T. Goodwin*, and *Marchioness of Bath* being very fine. With twenty-four blooms of Dahlias Mr. J. Nation was first, and also for twelve Fancy and twelve single varieties, Mr. S. Crump being second in each instance. Mr. R. Grigg, gardener to J. Grant Morris, Esq., was awarded the first prize for twelve blooms of *Cactus Dahlia Juarezii*, while the most successful exhibitors of Asters were Messrs. Crump, J. Nation, and D. C. Powell, gardener to the Earl of Devon, Powderham Castle. Hollyhocks, Zonal Pelargoniums, Pansies, and hardy herbaceous plants were also well shown. The boxes of choice cut flowers, consisting of twenty-four varieties, were conspicuous more for the immense closely packed bunches than for beauty of arrangement. Fern fronds or some other greenery ought always to be admitted and used with these, and in this case are then extremely attractive. Mr. W. Rowland was first and Mr. G. Lock second. The vases of cut flowers for dinner-table decoration were confined to lady competitors, and some of them were tastefully and lightly filled. With a vase filled with choice flowers Mrs. Herriman was first, Mrs. Cove second, and Miss Simms third. With a vase of wild flowers Miss Osmond was first, and was followed by Miss E. M. K. Maxwell and Miss E. Maxwell.

Messrs. Curtis, Sanford & Co. brought, but not for competition, very fine stands of cut Roses, the most conspicuous being *Maréchal Niel*, *Niphetos*, and *Mrs. Allen Richardson*, all of which were shown in great numbers. They also had a fine lot of single Dahlias. Mr. James Walters, Mount Radford Nursery, Exeter, also had a fine display of cut Roses, which included many excellent blooms of popular varieties.

## FRUIT AND VEGETABLES.

There was a fine lot of fruit in competition for the various prizes offered for them, upwards of one hundred bunches of Grapes being staged. A silver cup, value £5 5s., was offered for six different varieties of Grapes, one bunch of each, and this brought out four competitors. Mr. R. Pike, gardener to the Rev. H. Clerk, was the winner, having fine well-finished bunches of *Madresfield Court*, *Black Alicante*, and *Muscat of Alexandria*, and large and fairly well-ripened examples of *Muscat Hamburg*, *Black Hamburg*, and *Duchess of Buccleuch*. Mr. Seward, gardener to Sir R. H. Davie, was a good second, his bunches being smaller, but very compact, and in most cases well finished. No third prize was offered, but Mr. Geeson was highly commended for a very creditable exhibit. There were five entries for the silver cup, value £5 5s., offered for ten varieties of fruit, including two varieties of Grapes. Mr. W. Iggulden, gardener to the Earl of Cork, Marston Gardens, Frome, was the winner with a generally good collection. This consisted of medium-sized well-finished bunches of *Madresfield Court* and *Black Hamburg Grapes*, a good *Queen Pine Apple*, a fine fruit of *Blenheim Orange Melon* weighing 6½ lbs., a good dish of *Barrington Peaches*, *Pitmaston Orange Nectarines*, *Jargonelle Pears*, *Early Orleans Plums*, *Moorpark Apricots*, and *Brown Turkey Figs*. Mr. Bull, gardener to General Sir Redvers Buller, Downes, Crediton, was a good second, his collection including a very fine *Smooth Cayenne Pine Apple* weighing 8 lbs., *Black Alicante* and *Muscat of Alexandria Grapes*, *Blenheim Orange Melon*, and *Williams' Bon Chrétien Pears*, all in good condition. Mr. D. C. Powell was a very close third, his only weak dishes being a small *Melon* and *Codlin Apples*. Mr. Bull was awarded the first prize for a very heavy fruit of *Smooth Cayenne Pine Apple*. The stands of different varieties of Grapes were not particularly good, many being shown in a rubbed state, neither did the Judges appear to give satisfactory decisions in several cases. The first prize for *Black Hamburg* was awarded to Mr. W. Teed for large and loose bunches, quite black and much rubbed, the second prize going to Mr. Street, gardener to Col. Walrond, Exeter, who had compact bunches with large well-finished berries. With *Muscat of Alexandria* Mr. J. T. Barnes took the lead, his bunches being large and well finished, though considered by many to be inferior to the second-prize lot staged by Mr. Geeson, gardener to Lord Haldon, Haldon House, Exeter. Any other white brought out several competitors, the first prize being awarded to Mr. Langworthy, who staged good bunches of *Buckland Sweetwater*, the second prize going to Mr. James, Bradfield, Collumpton, for good well-finished bunches of *Foster's Seedling*. The first prize in the class for any other black sort was awarded to Mr. G. Benmore for a good stand of *Lady Downe's*.

Peaches were shown in great numbers, and were generally good. All the winning dishes were labelled Diamond, but they all differed widely. Mr. Underdown, gardener to Sir J. H. Hennanay, Bart., was first, and Messrs. J. James and J. W. Sedgely equal seconds. With highly coloured *Elruge Nectarines* Mr. D. C. Powell took first prize, the second prize going to Mr. J. Leach, gardener to J. Drew, Esq., for a good dish of *Pitmaston Oranges*. *Melons* were well shown, Mr. Bull being first in the scarlet-flesh class, and Mr. L. Scott, gardener to the Rev. L. T. Potten; and with a green-flesh variety *Colonel Saville* was first, Mr. J. James second, and Mr. T. Turner, gardener to A. Slade, Esq. With *Moor Park Apricots* Mr. J. T. Baker, gardener to T. Reeve, Esq., was first, and Mr. R. Mair, gardener to S. J. Sheeley, Esq., was second with the same variety. Mr. W. Isaac, gardener to B. J. Gidley, Esq., was awarded the first prize for a fine dish of *Brunswick Figs*. A good dish of *Jargonelle Pears* gained Mr. P. Lang, gardener to Lord Poltimore, Exeter, the first prize for Pears, Mr. Geeson being second with the same variety. *Irish Peach* was the favourite dessert Apple, Mr. G. R. Peed taking first prize, Mr. J. Langworthy, gardener to G. Benmore, Esq., the second, and Mr. J. Hayman, gardener to J. H. Pinder, Esq., third. Messrs. Underdown, J. T. Baker, gardener to T. Reeve, Esq., and Weekes, gardener to E. A. Sanders, Esq., were the successful exhibitors of kitchen Apples; and kitchen Plums were well shown by Messrs. P. Long and W. Seward, dessert Plums by Messrs. J. Dawe, gardener to the Rev. T. Yarde, and J. Langworthy, *Morellos* by Messrs. J. James and D. C. Powell, *Red Currants* by D. C. Powell and H. Selman, *Gooseberries* by Messrs. J. James and H. Selman, and *White Currants* by D. C. Powell and L. Scott, who received the awards in the order named in each instance.

A very fine lot of vegetables were staged, the competition being very close in the many classes provided. The first prize for a collection of twelve kinds was awarded to Mr. J. Drewe, the best represented kinds being *Sulham Prize Celery*, *Duke of Edinburgh Cucumber*, *Girtford Giant Runner Beans*, and *International Kidney Potato*. Equal seconds were awarded to Messrs. E. Sparkes and A. Barnett, and a third to the gardener to Colonel Troyte. The most successful exhibitors in the various vegetable classes were the gardeners to T. C. Daniel, Esq., Col. Troyte, Col. Walrond, Lord Coleridge, W. R. Baker, Esq., Sir J. Shelley, A. Barnett, Esq., J. Harding, Esq., Lord Poltimore, Rev. T. Yarde, Sir R. H. F. Davie, W. H. Dunsford, Esq., H. Pinder, Esq., Lord Haldon, Sir J. Walrond, W. Gibbings, Esq., H. Wilcocks, Esq., Capt. Greatwood, J. Searle, Esq., and T. Rowe, Esq.

## CHRYSANTHEMUM BENDIGO.

WHEN this variety was exhibited last season as a primrose sport from the Princess of Wales some doubts were expressed as to whether it was not identical with *Mabel Ward*, and some correspondence took place in the horticultural press on the subject. I had an opportunity the other day when calling on my friend Mr. Gibson, gardener at Marden Park, of seeing four or five plants of the variety above mentioned, and there is no question but that there must be a mistake somewhere, as his plants certainly cannot claim any parentage with *Princess of Wales*, the foliage and growth being identical with *Eve*. The variety from which we know *Mabel Ward* is a primrose sport, the broad foliage and stout growth of which is very distinct from *Princess of Wales*. When at Southampton the other day I heard the same opinion expressed by one or two growers who had it in their collection. This is much to be regretted, and may cause confusion at exhibiting time. I doubt not that many are looking forward with a great deal of pleasure to seeing another acquisition to the incurved class from a flower of such substance and petal as *Princess of*



Wales (which flower, by-the-by, would be worth a better name than "Bendigo"). I have directed early attention to it, as perhaps there may be an opportunity for a growing plant in flower to be exhibited during the coming season at one or other of the chief Chrysanthemum exhibitions, or before the Floral Committee of the Royal Horticultural Society at Kensington, and so set the matter at rest.—C. ORCHARD, *Coombe Warren, Kingston-on-Thames*.

## FUNGI AND DISEASES OF PLANTS.

(By T. J. BURRILL, Illinois Industrial University.)

THERE are very few of our flowering plants, whether native or introduced, growing wild or cultivated, which are not known to support one or more species of vegetable parasites. All of the "rusts," "smuts," "mildews," and many affections of the leaves, stems, flowers, or fruit, known by other names, are found to be peculiarly associated with true growths of, for each case, special kinds of minute vegetation. Though only seen, except as a mass, by the aid of the compound microscope, these growths are the products of real species of plants, having all the characteristics of form, of life, and of reproduction possessed by the better known species of the higher members of the vegetable kingdom. Their minuteness does not prevent existence, nor real specific distinction. Small as these microscopical fungi are, they are just as subject to classification into orders, genera, and species, as are the trees in the forest. To him who has carefully studied these minute forms, a certain kind of "rust" on Wheat straw is as characteristically recognisable as the Wheat species itself is to an agriculturist. The botanist names and classifies the species which are only revealed to him by the microscope, in the same way and with the same basis of specific distinction among the kinds as he does those whose various forms make up the conspicuous verdure of the prairies and of the woodlands. And, what may seem astonishing to many is that the number of thus definitely recognisable species among these microscopically small plants is scarcely less—perhaps not less—than the number which otherwise constitute the vegetation of the earth.

The question to be discussed now is the relation of the minute species belonging to the great group of fungi to the diseases and injuries of higher plants, especially those which we cultivate. When a parasite is spoken of, most minds turn at once to the animal species, and some sort of an insect or allied thing is thought of. We, however, may observe that there is no nearer relation between fungi and insects than there is between Thistle-down and birds, if they do resemble each other somewhat in place of habitat and effect. The plume of a Thistle seed passes through the air—so does a bird, but this does not express similarity of origin and life. A fungus is sometimes found on a distorted and injured leaf, and on another similarly affected, so far as common observation goes, a company of plant lice are discovered. Both may be the cause of similar and perhaps serious injury, but no one argues from this the closeness of their relationship. Plants are as truly parasitic on plants and animals as are small members of the zoological world on the larger ones. For the present we are to do with parasitic plants, and of these only such as belong to the fungi.

There is now just enough known of these minute living and growing things to make us aware that the injuries caused by them are very great, but not enough to permit us to say how great the destruction is which can be clearly traced to their effects. The large proportion of even the best informed cultivators know, in a practical sense, really little of the various kinds of fungi affecting crops, and still less of their peculiarities of life history and development. Nor is this to be accounted to the discredit of the intelligent and active body of men devoted to horticultural pursuits, ordinarily as wide awake and enterprising as the members of any trade or profession whatever. The fact is, those who have the opportunity and means, and who make the matter a special study, get along slow enough, and are to-day groping in the dark for the factors of many an unsolved problem.

Nothing, we may say, can be done without a compound microscope; and, however much we admire the skill and ingenuity which have produced so wonderful and so perfect an instrument, and how much soever we feel ourselves indebted to it for the knowledge we possess, still it is at the best a tedious thing compared with that of ordinary vision, to gain information concerning living things through the lenses of a fine and efficient microscope: much more so with a poor instrument. When stock break through the fences into an orchard, when rabbits gnaw the bark, and even when most insects bore the wood, nibble the leaves, or sting the fruit, we can see the depredators and readily observe their methods, as well as quickly understand the extent and probable duration of the injury; but in most cases the presence even of these invisible fungi is not usually suspected until the prized product of our culture is not only damaged but shows this damage through its decline and perhaps death. Investigations at this stage may fail entirely to reveal the source of the mischief, the mischief-maker having disappeared.

It is not therefore wonderful that many do not recognise in parasitic fungi serious enemies to the production of fruit and other crops. When they are really known to occur in connection with a disease we can excuse the doubts so often expressed in regard to their being the cause of the malady rather than results of other causes. To further use the illustration already introduced, if a cow steal in through an open gate, and in a few minutes reduce a choice evergreen shrub from a thing of beauty to a ragged, misshapen object of pity, no one thinks of accusing the gate as the direct agent in the twisting and scarring of the limbs, wherever the responsibility of the loss may rest. The condition of the gate allowed the cow to enter, and perhaps better attention to the former rather than shooting the latter may be the proper mode of preventing a repetition of the disaster; still all agree that it is the animal which does the business. She is the immediate and active factor in the case, without which, whatever the opportunities and conditions, the damage would not have been done. It is the animal, therefore, to which we in this instance attribute the mischief, and our methods of protection are based upon our knowledge of her habits, propensities, and powers. It is in this way that we arrive at the idea of, and the proportions for, a fence as a barrier, of the nature and qualities of a gate and its fastenings, and of laws, and penalties, and pounds.

Now a parasitic fungus, being very low in the scale of organic existence, is much more subject to the peculiarities of conditions than is the illustrative animal; but in a very marked degree the same ideas and reasonings are as

appropriate in the one as in the other case. A certain rust or mildew occurs on a crop after a summer shower, and we think we have reason to assert the rust or mildew would not have appeared had the weather continued dry and clear. Shall we now say that the injury is directly due to the shower? We do not perceive the invasion of an active agent of the destruction; indeed nothing of this kind can be seen with unaided eyes. We only know that in one case the Wheat plants are killed, in another the Peaches rot while still hanging upon the tree—just as a blind man may discover the injury to his favourite Fir without suspecting at first his neighbour's cow or the unlatched gate. If he knew nothing about such a possession by his neighbour, and nothing of the food and habits of the animal, he might not discover at all the real cause of the mischief. Knowing, however, something of these things, he gradually ascertains what the trouble came from and how it happened by fumbling over the torn branches, finding on their jagged ends little tufts of hair, by feeling on the ground and recognising characteristic imprints there, by following these one by one, by a slow and tedious method to the open gate. To one blessed with eyesight and the requisites of knowledge, a glance would have sufficed to comprehend the whole matter. We must, however, in most cases compare the investigator of parasitic fungi to the blind man who is otherwise prepared to solve the question presented, and the non-microscopical worker to him who without eyes has also no information about such animals. When the microscope even imperfectly reveals a something as to the possible agent of destruction, in a direct sense, in the case of rust or rot, he who would rationally understand the true cause and cure of the malady will assiduously follow such indications as are presented of the mischief-maker, though in the following he is quite blind, except as artificially aided, and utterly unable to feel. Simple minuteness must not be allowed to shake one's faith in the possibility of effects. The proboscis of a mosquito is as effective, after its kind, as that of an elephant. The shells of organisms, too small to be seen without the compound microscope, have added a thousandfold more to the crust of the earth than have the skeletons of all the larger animals. It was the little foxes that spoiled the Vines, in Solomon's estimation.

After much research, provided by the best instruments of our day, the writer cannot avoid the opinion that parasitic fungi are very often and as truly the real cause of the disease and injury in the plants as in the cow in the illustration given. If it is held that the special conditions of the plant, or of the weather, or both are required to favour these growths, no negative reply need be given. But not unsimilar conditions exist for the development of all organic things, man himself included. He thrives abundantly in the temperate regions of the earth, providing the soil is good and enemies are not too powerful; while he fails outright in his attempts to even visit the North Pole, much more to erect there the capital of a prosperous and home-loving people. Failure after failure sometimes attends, without apparent reason, the endeavours to introduce fruits from one region to others of the same latitude and seemingly similar climate. How often has the European Vine been brought to America without successful establishment! On the other hand, a scarcely noticeable plant in its native soil becomes in other localities an obnoxious weed, or an important addition to the fields and the markets. Whoever dreamed that our little Waterweed, *Anacharis canadensis*, inconspicuous in our streams, would become a pest in the English rivers, choking the waters and even impeding navigation? What prophecy pronounced the wonderful results of the introduction of the Potato in Ireland—the "Irish" Potato until this day, though the plant is a native American! The various kinds of fungi form no exception to the general law that peculiar, sometimes not apparent, conditions specially favour or hinder development, and these specially favourable conditions for a parasitic fungus may or may not be conducive to the best growth of the parasitised plant. The peculiarities of weather favourable to the growth of the Maize are not usually well suited for Wheat, yet seem to be in at least a general way to the little vegetable growth within the tissues of the Wheat which we call "rust." In this case the rust-plant becomes enormously multiplied and seriously destructive, while the results would have been less marked had the Wheat retained its full vitality and resisting power. We shall make a long step in advance in the practical study and treatment of diseases of plants due to fungi, when we thoroughly recognise the fact that the rusts, smuts, rots, mildews, &c., are really vegetable growths subject to certain conditions, and as dependent upon these for an abundant development as are the valuable products of our gardens, orchards, and fields. There is with the one, and with the other, nothing like chance; neither is the growth of fungi so wonderfully sudden and phenomenal as is generally supposed. In very many cases the spores of parasitic fungi constitute relatively the only conspicuous part of the plant, and these are often matured in prodigious numbers within a short time; but this does not necessarily mean that the entire life of the plant is very brief. A Mushroom is ordinarily made the type of rapid and short-lived growth, yet the vegetating portion of the plant rather slowly accumulates the reserve material by which this quick apparent development is made possible. So smut that fruits only in the ovary of Wheat, and seems to come in a day, grows all season through in the tissues of the stem, preparing for the apparently sudden development. So, too, a sudden change in the appearance of a parasitised plant may be the result of prolonged disease, just as an impetuous land slide may owe its origin to the slow undermining of trickling water, as well as to an earthquake.

Having gained the idea that the various rots, rusts, and blights, caused by fungi, are the results of specific organic growths, each producing characteristic effects, limited like other living things by external conditions and each subject to its own peculiarities of life and development, we may next inquire what some of the general facts are found true of these fungi as a whole.—(*Proceedings of the American Pomological Society.*)

(To be continued.)

## HELENIUMS.

WITH the exception of *H. setigerum*, perhaps better known under the pseudo-name of *Amblyolepis setigera*, and *H. linariifolium*, all the Heleniums in general cultivation are useful hardy perennials. *H. autumnale*, the most common in gardens, and of which there are many varieties, well deserves the place it has gained, both for its ornamental



character and the ease with which it is cultivated. The varieties differ in height from 1 foot to 5 or 6 feet. They are suitable for nearly all situations, and especially for various positions in the mixed border, where they come in well for late autumn; their large, bright yellow, showy flowers could ill be dispensed with.

A few are very suitable for the rockery, amongst the best of which may be mentioned *H. Hopesii*, a recently introduced species of considerable value, growing about 2 feet in height, with a fine compact habit, and producing large flower heads of a deep orange yellow colour, commencing about the middle of June, and continuing through the summer; *H. Bolanderi*, an extremely showy species, growing a little taller than



Fig. 39.—*Helianthus pumilus*.

the above, but having much handsomer flowers, and with us in a dry sandy soil much more fully produced. The ray florets are of a full yellow colour, closely set together, and shown off prettily against the almost black prominent disc. They are produced June and July. Being much taller than the others this species should be given a place near the top of the rockery, as prominent as possible and in the full sun.

*H. pumilus*, of which the annexed woodcut (fig. 39) is a representation, is, as its name implies, a dwarf rock or border plant of no small merit. It seldom grows more than a foot in height, is neat in habit, and crowned with pretty flower heads about 3 inches across, of a bright yellow tint. In favourable seasons it commences flowering about the end of June, and as the flowers last a long time it is at its best during the month of July. A native of North America, very handsome and desirable.

All the *Helianthus* ripen seed freely, by which means they may be

easily increased. They may also be increased by division of the roots, which is best done towards autumn.—M. S.

### THE FRUIT ROOM.

NOTWITHSTANDING all that has been said on the matter, it too frequently happens that many things besides the legitimate occupants of the fruit room find their way thither. Bulbs, seeds, lumber of various kinds, and other litter—all, more or less, are too often crammed into the fruit room; and as all these things are no doubt useful in their way, we must not be too severe in our censure on those who have no other place to stow away such things, only it is right to call attention to the sacrifice their presence there occasions; for be it remembered that a quantity of fruit, bulbs, and roots deposited all together are widely different from a like quantity of manufactured goods, wood, or iron; for these last-named, being divested of all vitality, do not give off any of those gases or exhalations which contaminate the premises they occupy; not but that certain chemical substances do so, and often to a hurtful extent, but in a general way the exhalations from such things are more injurious to animal life than to other manufactured goods in their immediate neighbourhood. But such is not the case with vegetable substances when piled together or brought near each other, and placed under circumstances so as to be compelled to absorb to a certain extent each other's impurities. For instance, let us take two articles, both useful in their way.

Let us suppose that large bunches of sweet herbs are either drying in the fruit room—otherwise, placed there for want of a better place; at the same time some Pears are also ripening for table. Now, when the atmosphere is charged with the odour arising from Lavender, Sweet Marjoram, and other strong-smelling plants, it is only fair to suppose that a delicate fruit like a Peach or a Pear, just in mellow order for table, should be tainted with it either more or less and its flavour impaired. I know to a certainty that Pears partake largely of the flavour of any substance they may have been packed in, where they have been so kept and confined in the same as musty hay, sawdust, and other substances; and as the fruit imbibes in that instance the flavour of the substance by which it is surrounded, it is only reasonable to suppose that it will likewise do the same from the atmosphere when that is loaded with impurities of a kind which, if not in itself obnoxious and offensive, is certainly at variance with what Nature intended for it, and consequently must be fatal to the conservative properties of the fruit, if it does not impart an improper flavour likewise. Now, taking all these things into consideration, it is easy to comprehend the point that ought to be attained. A sweet well-ventilated atmosphere, such an one as our worthy farmhouse dames like to place their milk in—cool, yet fresh and sweet; for as milk imbibes any noxious exhalation by which it is surrounded, so likewise will fruit, though perhaps to a more limited extent. Consequently, if the fruit room could be so contrived as to be out of the reach of such things so much the better; at all events, do not let it be encumbered inside with substances likely to create what is not wanted.

A great deal has been said about fruit rooms and the proper keeping of fruits; but, after all, much of the best fruit that finds its way into Covent Garden Market is kept in a very homely way, heaped up in some shed or outhouse (very often, in fact, in the hop kiln). Apples are turned out from there in March and April in a condition which those having more ample means have much difficulty to exceed; nevertheless, there is much loss amongst them, and the smaller quantity which private growers usually have to deal with enables them to keep theirs in a manner wherein they can see and examine the stock daily, in order to see what needs removing; for, as most fruit rooms are fitted up with shelves and are sufficiently capacious to hold all the fruit required without being more than two thick, any decayed one is much easier discovered. But prior to the fruit room being used it is proper to say a few words on it, beginning with its construction.

This building should not stand in an open exposed place with windows to the south, but if possible it would be better to shade it from that side, and render the other as open and well ventilated as possible, and be sure to have such ventilation at top as will enable all noxious gases to escape as they are generated. Apertures at the bottom of the house will also be necessary, so that the room is fed by a continuous influx of good fresh air, and the tainted portion driven off by the same means. This top and bottom ventilation is especially required, and we know of nothing worse than a close-ceiled room with no apertures for air save the windows midway up the side. A fruit room, to



be a good one, ought to have as much ventilation as a place intended for public meetings—as, in fact, a church or chapel. It may perhaps be urged that these latter are not in all cases furnished with openings, but then their loftiness is such as is capable of containing a large volume of heated or impure air, which, as those meetings are not always continuous, get emptied of their improper contents, and refilled with fresh, pure atmospheric air before the building is again wanted; but such is not the case with the fruit room—there the evil is often a continuous one, so that the fruit, or other object inside, gets tainted, either more or less, unless, as above, a stream of cold fresh air is always pouring in, so as to displace the bad ere it assumes a too vitiated character.

The best keeping fruit room ever I had stood behind a high garden wall—its north side being furnished with the two windows and a door, while its ends abutted into other buildings—it was not lofty, but, having a lean-to roof, it was plastered and ceiled inside, the same as the roof, and a ventilation was formed at the highest part by an opening in the aforesaid garden wall, not leading through to the south, but going upward, like a chimney, in fact. Small openings were also made at the bottom of the opposite wall, whereby a large current of cold air was sucked in, which, circulating through the room, finally ascended at the back and out at the top, followed by another current the same way: in this room fruit of all kinds kept well; the fittings were the ordinary shelves all around, and a large table inside, which was also often loaded with things for immediate use. The fittings are of less moment, as everyone can arrange them to suit his or her own convenience; the leading principle of how to act seems more especially called for here.

Much as has been said about the fruit room, &c., it must also be borne in mind that the seasons are not always alike for rendering the fruit capable of enduring the changes by which it is surrounded; but, in a usual way, it is best to let Pears and Apples remain pretty long on the tree, unless they fall very much, or are, in some other way, in a dangerous condition, for after the first few weeks are over, the packed-away fruit keeps much better than it does at first. Colder weather setting in, and other matters tending to check perspiration, the fruit does not so quickly attain that period of maturity which is identical with a speedy decay; in fact, it is only one form of the same, and that tendency must, if possible, be arrested.

It is well known that certain fruits give off exhalations different from others, and from each other. Williams's Bon Chrétien Pear is, perhaps, the most offensive of any, where any considerable quantity of them get mellow together, and assuredly the strong odour from it cannot do otherwise than hasten all that it is in contact with down the road to destruction; at all events, it would be highly improper to allow it to remain in the same place. Other things that are equally strong ought also to be guarded against, and, of course, all decaying fruit, or other matters of that kind, ought to be removed as soon as discovered, and all dirt, &c., cleared away, so that the fruit room, when furnished with its winter store, may be rendered as clean and healthy as its crowded state will allow; and with a judicious ventilation, and other means, combined with good, well-grown fruit to begin with, a fair share of success may be expected, and the various kinds will no doubt keep as long as their specified term of existence is allotted them, and all premature decay and other destructive tendencies arrested, so that good Apples and Pears, I do not mean those hard, wooden ones which some late kinds deserve to be called, but if good mellow fruit, said to be in season in January, can be kept until March, it will be much better than the kinds reported as being in season then, while a premature ripening has a contrary injurious effect.—J. R.

## THE VEGETATION OF THE SISTER ISLANDS.

### FLORIDA.

THE scenery of the lower St. John's River for ten miles from its mouth, is interesting in itself and by contrast with the upper portions of the river. At Dame's Point the river turns abruptly to the left, becomes obstructed by shoals and islands, and two additional channels are formed—not available, however, for navigation. A mile below the point on the left stands the village of New Berlin, on a yellow bluff whose base is washed by the ship channel. At Dame's Point a great change comes over the appearance of the river. Extensive grassy marshes arise in mid river, and on either shore (below New Berlin) similar marshes take the place of dry land, widening out as we approach the coast. At high tide the river overflows both islands and shores, and but for the tall grass which covers them the lower St. John's would at such time become part of a wide-spread lagoon. Half way from the point to the bar a strip of dry shore appears on the right, ending in the bold headland called St. John's Bluff, and a mile beyond on the northern side we perceive what seems to be a group of wooded hills rising out of the prairie-like marsh.

These are the Sister Islands. Their shaggy outlines are prominent objects in the landscape, and their singular location excites the curiosity of passing tourists; but, on account of their apparent inaccessibility, but few visit them, and fewer still understand their origin.

In the fall of 1877 some plants from the Sisters were brought to me by a fisherman. The specimens indicated what I afterwards found to be true, that these islands support a vegetation characteristic of a much more southern latitude. During the following year I made several visits to them, the botanical result of which was to extend the geographical limits of numerous plants and to add three species to the North American flora—namely, the Fern *Cheilanthes microphylla*, a Vetch (*Vicia floridana*), and our first representative of the black Pepper family (*Peperomia leptostachya*). In inviting the reader to accompany me on a tour of inspection of these islands, it is understood that he is to see them with my eyes. His own might testify that the islands are rough, tangled, insect-infested, detestable spots, and I think he may be content to visit them by proxy; but if he were to see the Sisters as they showed themselves to me he would receive the same impressions that I now commit to paper.

Crossing the river from St. John's Bluff to the northern shore, we find the latter overflowed; it is flood time, and a favourable time for penetrating the marshes. At intervals we pass the mouths of creeks, one of which the boatman says is the "mouth of Hanimile," which leads to the "Pepper Islands." Through the mouth and down the throat of the passage we go, and soon reach the retreat of the fiery Capsicum. It is a small island with steep banks composed of bleached oyster shells, which reflect the intense heat of the sun and slip under our feet, throwing us against the points of the Spanish Bayonet, which almost covers the island. Bleeding from its punctures, we scale the parapet and look around. Intermingled with the bayonets are Prickly Pears and various shrubs and low trees of rigid spiny growth, and amidst these is interwoven a singular vine of the Milkweed family (*Vincetoxicum scoparium*). Its tough, twine-like, green and almost leafless stems, after weaving together the branches of a shrub, twist themselves together into a rope, to uncoil again in the top of a neighbouring tree. It has a milky juice and a profusion of minute yellow flowers. In the Palm Hammock I saw this Vine in tree tops 40 feet above the ground. The slender half-shrubby *Capsicum frutescens* grows here in abundance, finding support for its straggling branches among stouter shrubs and bayonets. Its fruit, the Bird-pepper of druggists, ripens throughout the year, and is harvested by birds. A noticeable shrub or small tree is the *Forestiera porulosa*. It appears to be laden with white seeds, but these, on examination, prove to have been blue berries, which the intense heat has excoriated.

Leaving this inhospitable isle, we soon reach another called 'Possum Island, which is similar to the first except in vegetation. The characteristic plants of this island are not boldly repellant as on the other, but of a deceptive treacherous nature, armed with worse but partially concealed weapons. Creeping among the grass is the Crowfoot Cactus (*Opuntia Pes-Corvi*), whose spines adheres to the fingers so tenaciously by their barbed points that joints of the Cactus are pulled off with them. It is a plant not to be handled with impunity, much less to be sat upon. Our hands are stung with Nettles and with the minute spines of the *Opuntia vulgaris*. Our clothes bristle with the seeds of the Spanish Needle (*Bidens bipinnata*), and are spotted with the adhesive leaves of the "Poor Man's Plaster" (*Mentzelia floridana*). This plant is as handsome as a Primrose, and as incapable of giving pain, yet one learns to dread it more than any other. It is a weak diffusely branching plant with bright yellow flowers and handsome foliage, which, with age, assumes various shades of brown and yellow. A weary unwary tourist is tempted to recline upon the soft mats spread invitingly by the *Mentzelia*, but woe to him if he yields to the temptation, for on rising he will find himself as fantastically decorated as a harlequin, with patches of yellow, orange, russet, and various shades of green. The leaves stick like adhesive plasters, and cannot be removed by pulling or scraping. The whole plant is covered with minute, white, barbed, silicious hairs, and as the leaves are very tender it is almost impossible to remove them from a woven fabric. The heat from above and below is intense, there is no shade, and the resources of the islet being soon exhausted we return to the boat and glide between walls of living green back to the river.

The groves of Pine Island rise invitingly half a mile to the left, but there intervenes a wide expanse of marsh through which our boatman knows but one channel, and that is impassable at low water. A white shell-bank and a low Cedar indicate the entrance to a little creek, which is so narrow that we have to propel the boat through it by pushing and paddling. The steep shelly bank is surmounted by Bayonets and Prickly Pears, which present a forbidding front, and, rising from among these, some dead and weather-beaten Cedars stretch forward their gaunt white branches as if to forbid our approach. Scaling the bank and passing these grim sentinels, we enter a verdant, shady avenue composed of live Oak, Palmettos, and Cedars, the branches overhead being garlanded with Vines and fringed with the Spanish Moss. Here are those sub-tropical shrubs and Vines of which specimens were brought me, whose elegant foliage would ornament any conservatory. Among these are two members of the Coffee family, the Snowberry (*Chiococca racemosa*), and the scarlet-berried *Psychotria rufescens*. Here is the *Vincetoxicum* weaving itself among the Yucca's dagger-like leaves, and the curious little *Peperomia* under the shade of drooping *Sageretia* and *Sapindus*. The *Coccolus carolinus* and *Passiflora suberosa* form banks of richest verdure, and carpet with their Ivy-like leaves the pavement of white shells.

As we reach the border-land of shadow and sunshine we meet a number of plants of quite a different character, plants which, beside the



stately and elegant species we have passed, might be called plebeian, or in common parlance, weedy. Here is the Black Nightshade comparing notes with its cousins Capsicum and Physalis, and the Northern Poke in company with some southern relations, Rivina, Boerhaavia, and Petiveria. The latter emits, when broken, a strong and disgusting odour, similar to that of Garlic. We have now reached a large clearing made by some disciple of Alexander Selkirk, who one winter attempted to convert this into an island paradise. When spring came the former proprietors appeared, and with buzz, bite, and sting drove the interloper off from the island. If he had had a regiment of soldiers to support him he could not have held the island against the mosquitoes, gallinippers, deer flies and sand flies which infest it. The clearing had been planted with young Orange trees, but these and the settler's hut and the stumps and logs are covered with an astonishing profusion of luxuriant and beautiful Vines. There are three species of Morning Glory with purple, blue, and white flowers, a Smilax, Gonolobus, Cocculus, and Bignonia. There is a great abundance of a rank white-flowered Composite (Verbesina), masses of the golden-flowered Mentzelia, and mats of beautiful Commelina and of the curious Melothria or Rabbit's Cucumber. A number of beautiful Grasses lend grace to the scene: the drooping Uniola nitida, the stately Selaria composita, and the delicate Panicum hirtellum. To a naturalist no garden could appear more beautiful.

Having crossed the clearing we find ourselves suddenly in a very dark and humid forest. Innumerable Vines seek the tree tops, and scarcely any herbage is to be seen. It is a dismal region, and we are glad to hasten back to the sunshine and to the boat, which is now afloat. The island may have untold treasures in reserve, but the demands of the inhabitants are too great. Physical suffering has outweighed other considerations, and we decide that the limit of endurance has been reached. Gladly we step into the boat again and push from shore; and with a feeling of relief we at last emerge from the tortuous passage and find ourselves again on the free rolling waters of the St. John's.—(*Florida Dispatch*.)

## TWO YORKSHIRE SHOWS.

### HANDSWORTH, SHEFFIELD.

THE twenty-first annual Exhibition was held on August 27th. It is the most important and popular of the numerous local shows annually held in the district, and was in many respects equal to those of previous years. The competitors in the classes devoted to plants were not so numerous as in some former exhibitions, but the plants exhibited were quite equal in quality to any previously shown. The most important points of excellence of the present Exhibition were, however, in the classes for fruits and vegetables, the entries for which have not previously been so numerous or the quality so good as on the present occasion. Great numbers of people visited the Show during the day from Sheffield, the railway company running special trains in addition to the ordinary ones, which were all well filled, as were also the numerous omnibuses and waggonettes which plied between Sheffield and Handsworth throughout the afternoon, so that the receipts at the gate must have been satisfactory.

One of the most attractive features connected with the Exhibition is the nurseries of Messrs. Fisher, Son & Sibray, which are opened to the public on this occasion, and which are always interesting and attractive. The large Stephanotis was covered with snowy white bloom. It is said to be the most floriferous variety in cultivation, though the flowers themselves are smaller than in some other varieties. Of Lapagerias, for which the firm have long had a more than local reputation, there is now an enormous stock flowering profusely. Of Tuberous Begonias there is also a grand display.

**Plants.**—In the class for ten ornamental flowering or foliage plants, not less than four of either (open to all England), first prize £10, second £6, third £4, the first prize was taken by Mr. Thos. Shelby, gardener to Mrs. Hobson, Burnt Stones, with even healthy specimens, which are scarcely surpassed at the most important shows. They comprised Crotons variegatus, undulatus, and angustifolius, Alocasia metallica, Dracaena magnifica, Ixora coccinea, Clerodendron Balfourianum, Eucharis amazonica, with twenty-one spikes of seven flowers each; Miltonia spectabilis, a magnificent specimen 4 feet in diameter, carrying more than one hundred blooms; and Dipladenia Brearleyana in fine condition on a trellis about 4 feet high, and carrying about one hundred expanded blooms. The second prize was awarded to Mr. Hiram Shaw, nurseryman, Richmond, for a very fine collection, in which were large specimens of Crotons Williamsii, Weismannii, and majesticus, and a very fine Bougainvillea glabra. The first prize for six plants, three flowering and three foliage, was taken by Mr. J. Walker, gardener to B. P. Broomhead, Esq., with good specimens of Crotons majesticus and Johannis, Asparagus plumosus nanus, Dipladenia amabilis, Clerodendron Balfourianum, and Cattleya guttata. Some very good collections of table plants were exhibited, the first prize for a collection of twelve being taken by Mr. J. Ward, gardener to T. H. Oakes, Esq., Riddings House, Alfreton; second, Mr. Hiram Shaw. Fuchsias and Zonal Pelargoniums were also well shown, the first prize in each class being taken by Mr. Thomas Foggin, gardener to Mrs. Wilson, Tapton Hall.

A most attractive feature of the Show was a tent occupied almost solely by groups arranged for effect, each 10 feet by 10 feet. The first prize was awarded to Mr. H. Shaw for a very graceful and elegant arrangement, the second prize going to Mr. B. Crossland, nurseryman, Richmond, for a beautiful group, most charmingly coloured and neatly finished, but a little too closely packed. Ferns were shown in considerable numbers and fine specimens, the winners of the first prizes being, for exotics, Mr. P. Linley, Heeley, and Mr. J. Walker; for British Mr. Thomas Shelley and Mr. Thomas Foggin.

**Fruit.**—As before stated, the display in this department was both extensive and of a high order of merit. Prizes of £5, £2 10s., and £1 5s. were offered in the open class for a collection of eight varieties, and for this there were five or six competitors, the first prize being taken by Mr. J. Edmonds, Bestwood, Arnold, Notts, with a grand collection, consisting of two Pines, black and white Grapes, a fine Melon, Peaches and Nectarines, Plums, and

Morello Cherries, each dish being of superb quality. Mr. Ward of Riddings House Gardens was second with fine samples. For Black Grapes, open class, Mr. Ward was first with two very fine bunches of Madresfield Court. For white Mr. J. Jefferson, Totley, was first with large and handsome bunches of Muscat of Alexandria. In the gentlemen's gardeners' class Mr. J. Walker was first with both black and white Grapes.

Of vegetables and cut flowers there was an extensive display, and for the most part of first-rate quality, the Dahlias shown by Mr. W. Boston, Carthorp, Bedale, and Mr. Charles Storer, Attercliffe, and the Roses by Mr. R. Proctor, being especially fine.

### WATH-UPON-DEARNE.

This Exhibition was held in the grounds adjoining Sandygate House on August 25th. It is very popular in the district, and is the occasion of the closing of the shops in Wath for half a day, and a general holiday for the villagers. The village itself is very ancient and picturesque, and has a population of about five thousand. In the time of Edward VI. it was a corporate town, but owing to the absence of railways and commercial enterprise its market appears to have migrated to the contiguous town of Barnsley, which has long been a busy centre of coal mining and railways. For many generations Wath has borne the proud title of the Queen of Villages, on account of its cleanliness, its picturesque beauty, and its surroundings. This is, however, now likely to be henceforth much changed, as two railway companies—the Midland and the Manchester, Sheffield, and Lincolnshire, have brought their lines close up and opened stations adjoining the village. Some extensive coal mines are also now in full work close to its boundaries.

Gardening, however, appears to be still carried on with as much, or probably more, spirit than ever before, and there is no lack of material in the neighbourhood for making a first-rate annual exhibition. Such was the one held upon the above date, and which was favoured with a very fine day and a large concourse of visitors, so that the courteous and energetic Secretary, Mr. R. Magee, and his fellow-workers on the Committee will have cause for rejoicings over their success.

An open class was provided for "all England," but as the prizes offered were only small the entries were few and principally from local growers. The major portion of the Exhibition consisted of the entries in the classes devoted to amateurs and cottagers, which were both numerous and good. In the classes for foliage and flowering plants there were numerous entries of well-grown and trained Zonal Pelargoniums, very densely flowered, also some good specimen Coleuses; but the most meritorious portion of the Show consisted in the really fine display of cut flowers and vegetables. The latter especially appear to be well shown this season, and particularly Potatoes, which are of large size and superior quality.

The principal prizetakers were, in the open class, Mr. Cadman, Wath; Mr. T. Wright, nurseryman, Doncaster; Mr. T. Withworth, Wath; Mr. T. Reeder, Wath; and Mr. A. Lineham, Wath. In the amateurs' class for plants Messrs. H. Cooke, A. W. Lineham, T. Holdsworth, R. Palmer, W. Colls, and H. Oxley; for vegetables and cut flowers Messrs. Wainwright, A. Thompson, T. Holdsworth, J. Blackham, and A. W. Lineham; for fruit Messrs. H. Oxley, W. Joel, Bolton, A. W. Lineham, H. R. Potter, and Wainwright.

Mr. Wright of Doncaster exhibited several good Orchids in the open class, amongst which was a good specimen of Oncidium aurosum, with three large spikes of bloom. This appears to be a fine Orchid for exhibition, as the growth is very robust and the flower spikes very stout, carrying a dense branching head of flowers somewhat similar to those of O. flexuosum, but about twice the size of that species.—W. K. W.



### HARDY FRUIT GARDEN.

**Autumn Pruning.**—Advisedly do we change the term of summer for autumn pruning, for we are anxious that the fact of the swift approach of the time of cessation of growth should be fully realised, so that no faulty practice now should mar the summer growth and autumnal ripening of it. Very busy have we been with the pruning knife, shortening a somewhat crowded lateral midsummer growth to 6 or 8 inches to admit light and air fully to the base of the growth and thus cause it to ripen fully, while the basal buds swell without starting into growth, which they would do if close pruning were now done. We repeat the important statement made a fortnight ago, that close pruning now will cause the buds, which should remain dormant till next spring, to start into growth, which must prove abortive and worthless, from the fact that the season of growth will be over long before it can arrive at maturity. We lay stress upon this matter for its real importance, and because of advice still given to continue close pruning now.

"Close-prune spring growth, but only shorten midsummer growth sufficiently to admit air and light freely to the spurs," was the text of lessons taught in theory and practice upwards of twenty years ago by one of the most skilful fruit-growers we have ever known. He was a gentleman who devoted the greater part of his time to the management of his garden for the pure love of it, buying all the new sorts of fruit and going to see and learn all he could of every method of practice in fruit culture of note. His practice was so sound and advanced that several years after his decease we saw the whole of the midsummer growth of the very large collection of pyramidal Pear trees, in the garden of the Royal Horticultural Society at Chiswick, shortened precisely as he had so long before advised. Twisting and bending down the shoots has



also been done where the growth was thin enough to prevent shading of the interior of the tree, but when the shoots are very numerous shortening is the best way of making sure of the spurs being fully exposed, and it imparts a more trim neat appearance to the trees, which also has to be considered in all conspicuous positions.

**Root-pruning.**—Mark now all trees much given to produce wood at the expense of fruit, and let root-pruning begin about the third week of September this year, for the hot dry weather has been highly favourable to the ripening of the wood, and it is well to get the roots pruned before the leaves begin to fall if only the branch growth is sufficiently mature. This is, undoubtedly, the best way of checking over-luxuriance of growth and of keeping branch and root growth fairly balanced. We have several Pear and Plum trees to do this year, and will give full details of the process in another calendar.

**Ripe Fruit.**—Apples already gathered: Margaret, Worcester Pearmain, Devonshire Quarrenden, Duchess of Oldenburg, Manks Codlin, Keswick Codlin, Oslin. Pears.—Summer Doyenné, Citron des Carmes, Beurré Giffard, Jargonelle, Williams' Bon Chrétien. Plums.—Rivers' Early, Early Orleans, Green Gage. Peaches.—Early Beatrice, Early Rivers, Early Albert, Grosse Mignonne, Dr. Hogg, Rivers' Early York. Nectarines.—Advance, Lord Napier, Rivers' White. Figs.—Brunswick.

### FRUIT FORCING

**VINES.**—*Vines in Pots.*—Those intended for early work should be divested of all laterals close down to the main buds, and in the event of their being still under glass no time should be lost in getting them removed to a south wall in the open air. They must be well secured from injury by wind, and to prevent the roots from becoming too dry a little litter or fern may be placed loosely round the pots. Keep rather dry, but do not allow them to become parchingly dry at the roots.

**Early Vinery.**—Permanent Vines in the early house should be encouraged to go to rest by having all lateral growths removed, care being taken not to injure the old leaves, as these will help to perfect the bunch-bearing buds. It will be necessary to admit abundance of air, and, if the roots are in good condition, the check which follows the removal of the laterals generally produces the desired effect.

**Midseason Houses.**—These will now or soon be cleared of their crops, and should be thoroughly washed with the syringe or engine to free them from dust or red spider. A moderate extension of the laterals may be allowed with a view to keep up the activity of the roots, but all gross laterals should be pinched, so as to divert the sap into the less vigorous parts, and keep up an equal diffusion throughout the Vines. If there is any doubt about the ripeness of the wood, maintain a gentle fire heat by day, so as to cause a circulation of dry warm air, closing early in the afternoon with sun heat, allowing an advance to 85° or 90°, and when the temperature declines, or before nightfall, admit air top and bottom; in fact, throw the house open for the night, the heat being turned off early in the afternoon, so that the pipes may cool before night. This will cause the Vines to ripen the wood, which should be brown and hard and the buds prominent in order to secure a satisfactory result. Houses in which ripe Hamburgs are hanging will be the better for having some light shading drawn over them for a few hours on bright days, as the strain of a heavy crop and their hanging after being ripe taxes the Vines severely; besides, the berries soon lose colour when exposed to powerful sun, and are much deteriorated in quality.

**Muscats and Late Grapes.**—The winter-hanging kinds ought now to have the Grapes in a degree of ripeness that will admit of a reduction of fire heat, and a lower temperature through the night. This treatment applies to houses that were helped forward with a little heat in the spring, but where this was not practised it may be necessary, fine as the season has been, to keep the fires going, and this, as is well known, is not favourable to the finish or the keeping of the Grapes. Keep the laterals fairly in hand, admit air freely on all favourable occasions.

**Late Houses of Hamburgs.**—The Grapes in these are now colouring fast, the bright weather having forced them forward with greater rapidity than may be desirable, at least where they are to be kept until December. In this case plenty of foliage for another month or six weeks will be of great service both in delaying the ripening and preserving the colour of the fruit. As days decrease in length, and there is danger to be apprehended from excess of moisture, the steady reduction of the laterals and increased ventilation with increased fire heat will be advantageous to the Grapes and the ripening of the wood. To succeed well with late Hamburgs, which are very much esteemed by some persons, it is necessary to remove all the large and loose bunches, and to well thin the medium-sized ones to prevent the berries binding. These are always much appreciated at table.

### PLANT HOUSES.

**Epiphyllums.**—These are beautiful plants for decoration during the winter months, and in order to grow them to perfection they need attention at the present time. While growth is being made a little shade is beneficial, but directly it is completed they must be exposed to light and air to thoroughly ripen and harden them, or they will flower only poorly instead of profusely. They should be exposed to light without delay, and should not be allowed to suffer by an insufficient supply of water at their roots. It is a great mistake to dry them at the root and keep them in that condition, as many do.

**Abutilons.**—To have dwarf useful plants in 5-inch pots for flowering during the winter, good strong cuttings should be selected and rooted at once in 2 or 3-inch pots. The cuttings may be inserted singly, so that no check is given to the plants after they are rooted, and they can be repotted

as soon as they are ready. The cuttings of these plants root readily in a close frame in a heated structure if kept shaded from strong sun. They should afterwards be grown in an intermediate temperature, and if they advance too rapidly they may be subject to cool treatment. If larger plants are required, insert four or five cuttings together and grow them without disturbing them afterwards.

**Impatiens Sultan.**—This is a useful plant for decoration all the year round; it never fails to flower freely, and is useful both in the stove, intermediate, and cool house, but for autumn, winter, and spring it should only be employed in the two former. Small plants in 2 and 3-inch pots are very useful, and batches of cuttings should be inserted at intervals of a few weeks where a succession of dwarf plants are required. The cuttings strike much better when inserted singly in small pots and placed upon a shelf in a heated house close to the glass; they should be shaded from the sun. When the pots containing the cuttings are placed in a close atmosphere such as that maintained in the propagating frame they are very liable to damp off.

**Bertolonias.**—These are very beautiful foliage plants, and where they are appreciated in good condition during the winter they should be re-rooted at the present time. Plants rooted in the spring and grown during the summer do not pass the winter so well as those that are rooted now. If good tops are taken off and inserted in any light sandy soil and kept close in a moist shady frame they will root freely without losing a single leaf. The stems of the old plants if retained will break again into growth, and will either make useful plants or supply cuttings for increasing the stock if needed. Peat fibre, sphagnum moss, and sand will grow these plants well.

**Cyanophyllum magnificum.**—One of the most noble and beautiful stove foliage plants in cultivation when well grown. It is propagated by side shoots and eyes, which, if inserted in sandy soil and placed in a close frame where they can be shaded from the sun, will root freely. Cuttings inserted now will make splendid specimens another year. This plant does not produce side shoots without the centre of the plant has been removed to induce it to break from the axils of the leaves. These side shoots when large enough should be slipped off close to the old stem, and will root freely if kept close in brisk heat. To develop thoroughly the foliage of this plant so as to display its true character, liberal root room should be given, and strong light should never be allowed to reach the foliage, or it is sure to be injured. These plants are not very particular about soil, for they appear to do as well in sphagnum moss and sand as they do in equal parts of peat and loam; we prefer the latter, although they do well in the former. These plants are the most beautiful when grown to a single stem, or at the most not more than two stems, for the foliage becomes crowded and the beauty of the plants spoiled. They should be grown in a moist warm atmosphere, or the edges of the foliage soon turn brown. *Sphærogyn latifolia* is another beautiful foliage plant that is very similar yet totally distinct from the above, and requires exactly the same treatment. It is propagated by cuttings in the form of side shoots; we have never succeeded in raising it from eyes the same as the *Cyanophyllum*.

**Caladium argyrites.**—A charming dwarf foliage plant for decoration during the autumn and winter, and when associated with Ferns or any similar plants it has a very beautiful appearance. To have plants in good condition in 3 and 4-inch pots for that purpose they should be divided now and repotted. After potting place them in brisk heat, and shade them from strong sun until they are established. By dividing plants occasionally and pushing them into active growth, fresh life is added to them, and they will remain in beauty for a long time. Without this they would as the days shorten show signs of exhaustion, and the foliage would commence fading.

### THE FLOWER GARDEN AND PLEASURE GROUND.

**Propagating Bedding Plants.**—It is not advisable to depend upon lifted old plants of such kinds as Iresines, Alternantheras, Heliotropes, Ageratums, Verbenas, Tropæolums, &c., as these, even if they survive the operation, do not always grow so freely as it is necessary they should do when cuttings are required. Strong rooted cuttings or late spring-struck plants kept in pots are the best in most cases, but those who have neither the one nor the other should lose no time before they attempt to strike a number of cuttings. A mild hotbed is the best for the purpose, and soft growing shoots should be selected, and dibbled in thinly either in well-drained pans or boxes filled with light sandy soil. Keep them close and shaded till rooted, and carefully remove all decaying leaves. The Verbenas and Ageratums may be wintered in the boxes; but the remainder, being more liable to damp off, should be potted either singly in small pots or several in larger pots, and then may be wintered on shelves. Gazanias, Violas, and Calceolarias may be struck later on, while the Marguerites lift readily, and a few old plants will yield any number of cuttings in the spring. If, however, strong plants of the latter are required for furnishing window boxes, cuttings should at once be rooted in heat, and the plants resulting be potted off singly and kept growing steadily through the winter. Zonal Pelargonium cuttings that may be put in near the present time should be placed under glass, and receive little or no water till callused, otherwise they will damp off badly. The delicate bronze, golden, and silver variegated sorts winter best in well-drained 6, 7, or 8-inch pots on shelves in any airy greenhouse or vinery. If already rooted in boxes we would pot them, as they seldom do well in boxes during the winter. All Zonal Pelargoniums in boxes or pots now rooting in the open should be housed before cold and wet weather sets in, as should they once become badly saturated many plants may be lost before the soil regains the requisite moderately dry state.

**Spring-flowering Plants.**—These must be properly attended to if a



good display be expected from them. No greater mistake could be made than sowing seeds thickly in drills or otherwise, and allowing the seedlings to become drawn and weakly. The plants should eventually be transplanted to their flowering quarters with a good ball of soil about their roots, or they may not get established before very cold weather sets in. Freely thin out the lines or patches of Forget-me-nots, Saponarias, Silenes, Limnanthes, Nemophilas, and any hardy plants that may be sown, and prick out the thinnings on good light soil. These may not make much further progress as far as top growth is concerned, but they will root afresh, and the thinning-out will thus admit of all being readily transplanted when the time arrives for filling the flower beds for the winter.

*Carnations, Picotees, and Pinks.*—It is getting late for layering the two former, but it is yet possible, owing to the extra warm state of the ground, to successfully layer a few of each. Commence by loosening the soil about the plants with a fork, and if at all dry give a good soaking of water; then surround them with a depth of about 3 inches of good sandy loam, with a little leaf soil added, making this rather firm. Trim or strip off the lower leaves of the growths to be layered, then at a convenient distance from their bases half cut through their stems just below a joint; next cut them upwards through the joint, and carefully but firmly peg down into the new soil. It is at the half-severed and split joint where the roots will form, and care should be taken to keep this uniformly moist and sufficiently buried. Pippings or side shoots of Pinks are best taken off, lightly trimmed, and dibbled in firmly in handlights placed near a north wall, and partially filled with good sandy soil, but those taken off at this time should be given a little bottom heat. All the rooted plants of the commoner or hardiest kinds of Carnations, Picotees, and Pinks, including early-raised seedlings, may well be permanently planted at once, and they will then become established before the winter and bloom well next season. They delight in well-enriched deeply dug soil, and in all low-lying or badly drained positions should be planted in beds raised well above the ordinary level. We usually plant them about 12 inches apart each way. All the choice or delicate sorts, as well as late-raised seedlings, should be potted or boxed off, and winter in dry and cold frames. They must be protected from severe frosts, but not "coddled."

*Saving Seed of Annuals.*—The present season has been exceptionally favourable for seed-saving, and many will collect some of various kinds who are not generally in the habit of so doing. Much judgment, however, must be exercised in the matter, or next season they may find they will have a much poorer variety than usual. The commoner or rather inferior kinds are the most free seeders, and these the professional seed-grower weeds out as much as possible, or otherwise they would spoil the stock. We prefer to purchase Stocks, Asters, Zinnias, Dianthus, Scabious, single Dahlias, Lobelia, and Phloxes, these from a good source invariably proving superior to our own saving. The seed-pods should be collected directly the seeds are changing colour and before much rain has fallen, laid on paper on dry shelves, and cleaned and stored as soon as thoroughly ripened.

## THE BEE-KEEPER.

### PRACTICAL HINTS TO BEE-KEEPERS.

THE sudden change of temperature from 80° to 55° during the day reminds us that manipulation with bees becomes more and more difficult every day, while exposing the combs but for a few seconds will incite robbing, and may end in a general melée amongst apiaries even at a considerable distance. No time therefore should be lost in getting all necessary driving and depriving to a close. Whenever robbers are suspected to be about, the manipulated hive should be taken indoors and operated on there, in an apartment with but one window (or if two, one to be darkened). After the manipulation it must be opened so that the bees will escape to their original site on which the hive will have been again placed. The best time for manipulation is between the hours of 1 and 3 P.M. Great care should be taken neither to expose sugar nor portions of honey or comb. What bees would pass unheeded during fine weather when honey was plentiful will now be readily and greedily appropriated by them, giving them a vicious temper and a desire for more, which causes great and often irreparable loss. Straw hives standing bare often cause much robbing; so it is advisable, not only for the present but for the future well-being of the bees and profit to the bee-master, to have all hives carefully sorted and arranged for the winter at an early date, and left unmolested until the spring.

#### RE-QUEENING HIVES.

Although queens are sometimes safely introduced shortly after the deposition of the reigning monarch with the hive full of eggs and brood, still it must be borne in mind that there is always a risk for the safety of the queen under these conditions. The only safe way to introduce is after the bees have no power to raise a successor, and the alien queen caged over or amongst the bees for forty-eight hours. I always introduce queens from over the top of the bees in such a manner and in such a cage

that I can witness the action of both; and until I cannot discover a single crooked back, when I know that they are fraternised, do I allow them to meet, admitting the one to the other quietly and almost imperceptibly.

A successful plan of introduction is to take a piece of honey-comb, or, even better, brood comb, and cage the alien queen with a few attendants, though perhaps better alone over the bees. This gives the queen the scent of the hive she is to be introduced to, and the bees hatching will require no reconciliation, but take to her at once without inquiring whether she is their mother. Meanwhile the bulk of the bees will be prepared to accept her from those that have been paying court to her through the cage, and which have communicated her presence to those below.

#### QUEENLESS HIVES.

It is generally understood that hives which carry pollen are in a normal state and possess a queen, but this is not always the case, and beginners are apt to be deceived. A practical bee-keeper can often tell at a glance on a fine day whether a hive is in a normally prosperous condition or not, but sometimes the best are cheated. Where the queen is a drone-breeder time will soon decide by the presence of drones which queen should at once be removed and superseded by a fertilised one. Where the slightest doubt exists as to the presence of a queen an examination should at once be made, and a queen added in every case, using the necessary precautions. A sure sign of the want of a queen is when bees are observed to crowd out and loiter at the entrance: if the ear is placed close to the hive an irregular and disconsolate hum will be heard. The want of a queen may occasionally cause the loss of a hive, but carelessness in manipulation and feeding may ruin the whole apiary. Nor is inattention to make the hive comfortable with freedom from damp and moisture, and well ventilated less destructive, so particular attention should be given to these hints, and remember the greater the quiet and rest from now till March the greater the success is likely to be. When the young bee-keeper finds advice of a conflicting nature, let him remember there is but a step between the right and the wrong way, and on that little depends the success or failure. He must therefore under these difficulties think and act for himself, putting the thing to the test, and discover which is right and which is wrong. At all times put most stress upon that teaching that asserts and is in accordance with the nature and instinct of the bees. In another article I will show under what treatment and management the bees have been profitable or otherwise at the Heather.—A LANARKSHIRE BEE-KEEPER.

### PROCEEDING AT AN AMERICAN BEE-KEEPERS' ASSOCIATION.

AT the Marshall County Bee-Keepers' Association, on July 5th, essays were read and discussions ensued.

#### REQUIREMENTS IN MODERN BEE-KEEPING (MR. PUTNAM).

A good bee-keeper always needs skill, but in the changed conditions of modern bee-keeping a different kind of skill is needed from that required by our fathers and grandfathers. This is more largely the case in the West than in the East, but true in both places. Formerly it was mostly manual skill in the use of simple implements, such as the straw skep and the common box hive; but now the apiarist needs to know how to adjust his hives and care for his bees in order to produce the greatest profits.

Bees properly handled call for little manual expertness to manage them; but to manipulate the present implements requires a degree of mechanical skill that a large proportion of our bee-keepers do not possess.

Every careful observer must recognise the fact that the lack of skill in managing and caring for his bees is one of the most potent sources of loss to the apiarist. We have known one man to care for 100 colonies as cheaply as another one would thirty colonies—the former buying and using only what was really needed, while the latter bought more than he could use, thinking that the supplies produced the desired results. "Economy is wealth" is an old adage, but it does not apply to apiculture with more force than to anything else; and to be too economical does not pay any better than being too extravagant. Using only what is needed, and no more, will produce the best results.

According to appointment, Mr. J. W. Sanders then read the following essay, entitled

#### THE NECESSITIES OF MODERN BEE-KEEPING.

We think that the first thing in order to become successful is to use a hive that is plain, cheap, simple of construction, and easy to manipulate for all purposes. We want a hive which contains moveable frames in the brood-chamber, and one that is similar to the other hives in the same apiary. Then we can exchange the combs or frames from one to another whenever necessary, which we find is often the case where we have a number of colonies to look after. A moveable-frame hive also allows us the privilege of examining a colony whenever it is necessary.

Where we allow natural swarming it is best that we examine the



colony in about two weeks after the first swarm has been cast, and see that it contains a laying queen; and if it does not, we can give them a comb from another hive containing eggs and brood, or else give them a laying queen if we have one at hand, which will save much valuable time. By this means we often save a valuable colony of bees, which, without this assistance, would in a short time dwindle down, and perhaps finally be destroyed by the moth. We say that the worms have destroyed some of our colonies of bees, when the truth is, it became queenless and then beeless, and then the moths took possession.

I think it necessary to examine colonies late in the honey season, and see that they have plenty of brood and young bees for the coming winter; and if they do not, empty combs or frames may be inserted in the centre of the hive, and thereby obtain plenty of young brood, thus preventing "spring dwindling."

At this stage of the season we will find the extractor a good thing, for we can empty some of the combs which are full of honey, and place them in the centre of the hive, and by this means obtain some good honey, as well as plenty of young bees for the coming winter.

Another important article for a progressive bee-keeper to possess is a good bee-smoker—an article after once using he will not do without. To be successful we want plenty of empty hives in readiness for the increase, then we will not be compelled to use hives which are not similar to the only already in use. It is also well to have our surplus arrangements previously prepared, for we may need them when we do not have them at hand, and thus be compelled to use any old box for the surplus honey, instead of the nice and neat sections which are more convenient to use, and more attractive to the buyer. I have not attempted to give all the necessities of the apiary, but of others I leave each bee-keeper to judge for himself.

Discussions of questions being next in order, the President asked, "Is it advisable to put empty combs into the centre of the hive?"

J. W. Sanders: Yes; if the central combs are full of brood, one or two combs at a time may be added near the centre, to an advantage; or if you do not have combs empty frames may be added, and you are sure to get nice straight combs built. I had a number of combs built that way last season, and they were generally clear from drone cells.

"Why do queens enter the surplus receptacles?" Mr. Cover said, "For want of room in the brood-chamber." Mrs. Van Meter said that she had one colony which had all drone brood and no sign of worker brood, and asked, "Why is it?" Mr. Cover and the Secretary made a few remarks, stating that it was queenless, and was occupied by a fertile worker, which always produced drones. The brood of a fertile worker is easily detected, for the worker cells, when capped, instead of being smooth are very uneven; and you will find eggs laid without any regularity, many cells being missed, and others with several eggs in them. As a remedy, uniting it with some other colony, or giving it a queen, or means of rearing one, were advised.

The subject of "Summer Care of Bees" was then discussed. Mr. Cover said that he worked for honey and not increase; that he begun in the spring with fifty-eight colonies; and that he stimulated early breeding by feeding rye flour and oatmeal until plenty of natural pollen appeared. By this means his bees get through with swarming early, and are ready for the honey harvest. His first swarm issued on May 14th, and the last one on June 5th. He had thirty-four swarms by May 24th, and had saved only eleven swarms. He said that he works it in this way:—When the first swarm issues he destroys the queen, and the swarm returns to the parent colony. When second swarms issue he captures the queens and returns the swarms, or else unites two or three swarms. At the same time he gives plenty of surplus room. He has some Langstroth hives which have on three sets of 5 lb. boxes. Up to July 5th he had taken off 200 5 lb. boxes, and had 300 more in which the bees were working, the majority being about ready to take off.

G. W. Calhoun: How late is it advisable to put in comb foundation?"

President: As long as the honey season lasts. The President then being called upon to give his methods, said that he began in the spring with seven colonies, and now has fourteen. His bees are doing well. He uses comb foundation; in the first place he used whole sheets, but now uses parts of sheets, and finds that the bees worked it out and made nice straight combs. He had filled the whole space in the sections, but in the future would use only a little as comb-guides.

Mr. Wickersham: "How do you get the bees out of the boxes?"

Answer: When the honey season is good put the boxes into a shed and let the bees go out themselves. If the season is poor place them in a dark room and give a ray of light. Boxes to be taken off in the morning.

### REMOVING SUPERS.

I HAVE just cleared two large supers of bees in a way very satisfactory to myself. I removed them from the hive on which they stood in the early morning and placed them on a shallow tray—to prevent loss by bleeding—slightly raised as in hiveing, immediately at the back of their own hive, close to and level with the floor-board, throwing over super and hive a large cloth, but not covering the entrance of the hive with it. In a matter of four or five hours I found the super empty of bees and no robbery going on. How much labour in carrying about supers and sweeping out bees this saved me any bee-keeper will know. I think the day was favourable, being well at the close of the honey harvest, and also I should not like to trust to the process without being on the premises in case of fighting among the bees, or robbery. I should add that through the summer I raise my hives half an inch from the floor-board, supporting

them at the corners, so that the bees had a fair way back to their hive.—VICAR.

An apiarian correspondent of the *Huntly Express* appears to have been impressed on witnessing Mr. James Shearer of Ardonold, Cairnie, driving his bees. He writes, "Preparations having been made, Mr. Shearer set to work to drive the bees from a number of hives, and transfer part of the combs to modern frame hives—casting aside his coat and hat, and rolling up his shirt sleeves, dauntless of stings or anything else. Never did we witness anyone driving and uniting bees in the same manner—viz., with face, head, and neck exposed. Stings did not seem to affect him in the least, and the work was done in a satisfactory manner."

### TRADE CATALOGUES RECEIVED.

E. Webb & Sons, Stourbridge.—*Catalogue of Bulbs, 1884.*  
J. Carter & Co., High Holborn.—*Bulb Catalogue for 1884.*  
Stephen Brown, Weston-super-Mare.—*Catalogue of Bulbs.*  
A. M. C. Jongkindt, Coninck, Dedemsvaart near Zwolle, Netherlands.—*Catalogue of Conifers, Shrubs, Trees, and Hardy Plants.*  
Wm. Baylor Hartland, 24, Patrick Street, Cork.—*Descriptive Catalogue of Narcissi.*  
George Cooling & Sons, Bath.—*Catalogue of Bulbs and Spring Flowers.*



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Books on Gardening for a Youth (E. S.).**—"Cottage Gardener's Dictionary" and Thompson's "Gardener's Assistant" are probably the two best works of reference on gardening extant, and ought to be possessed by everyone; and to these may be added the "Garden Manual," Keane's "Indoor Gardening," also Keane's "Outdoor Gardening," Thomson's "Flower Gardening," and Thomson's "Fruit Forcing." These will form sufficient information for a time, works on special subjects being added as means and opportunity offer.

**White Grapes (An Exhibitor).**—Certainly neither of the Grapes of which you have sent examples is the Calabrian Raisin, though the Vine may have been obtained as such, and we are quite unable to advise you to exhibit them together. We consider they are both Trebbiano, one larger in the berry and riper than the other.

**Renovating Lawn (T. L., Putney).**—We are glad to hear you have improved the lawn considerably by sowing a renovating mixture in spring and covering the seed with fine soil, for the season has certainly not been favourable for the growth of fine grasses. We advise you now, or at least as soon as the ground is moist, to procure some more of the same kind of seed, sow and treat as you did in the spring, and not to mow the lawn very closely after the seed germinates. We have seen lawns much improved by sowing seeds early in September.

**Ventilating a Vinery (Clifton).**—You cannot do better than keep your unheated house as warm as possible now the Grapes are changing, but—mark the condition—with a free circulation of air. If the house is kept close you may incite mildew. Open the ventilators back and front slightly as soon as the sun raises the temperature in the morning, and increase the openings when the thermometer registers 75°; if it rises beyond 80° give air freely. It will be advisable to leave the top lights open to the extent of an inch all night. When you can employ fire heat you may maintain a night temperature of 60° to 65° with air, and a day temperature 5° higher without sun.

**Protecting Fruit from Birds (J. J.).**—No doubt the material sent will, if properly fixed, exclude birds from fruit trees, but it is closer than is needed, and we should prefer stout netting; that would answer the same purpose, and would not afford so much shade to the trees; still we should not apprehend any injurious effects from the use of the very light and open shading material. If the laterals on the Raspberry canes are 4 feet or more from the ground they may be cut off; if much lower they may be thinned out and the strongest retained for fruiting, provided there are not sufficient strong canes without laterals.

**Grapes not Setting (Perplexed).**—We have scarcely any doubt that the house was kept too close, and consequently too moist, in your absence when the Vines were in flower, and that the pollen was converted into paste instead of being distributed for the purpose of fertilisation. You appear to have been very successful hitherto, and the treatment you describe as to watering is good. The colder water to which you refer would not cause the



evil. The error has not been one of watering at all, but of imperfect ventilation; and the subsequent overheating to which you refer would impair the keeping properties of the Grapes. Your Vines appear to have been the victims of accidents. No matter how good the borders may be, careful the watering and accurate the pruning and dressing, failure must occur if any serious mistakes are made in ventilation, and the work of a season may be spoiled by one hour of neglect in ventilating the houses, or ventilating them improperly.

**Dimensions of Pit (J. E.).**—The height of the back wall should be 6 feet, or 2 feet 6 inches below ground, and the front wall 4 feet 6 inches altogether, and the same depth in the ground as the back wall, which will give a fall of 18 inches in the 6 feet; but if you have 9-inch walls it would be too sharp a pitch, and we should, therefore, lower the back wall 6 inches, and in that case the width of the pit outside to outside will need to be 5 feet 9 inches, and the length of course 24 feet, adding the distance taken up by the parting pieces between the lights and at the ends, or about 16 inches. We should have the arrangement set out before you begin to build by a carpenter on the spot.

**Free-blooming Roses (Idem).**—La France, Fisher Holmes, Gloire de Bourg-la-Reine, Madame Victor Verdier, Magna Charta, Brightness of Cheshunt, Charles Lefebvre, Duke of Connaught, A. K. Williams, Boule de Neige, Duke of Edinburgh, Emily Laxton, J. B. M. Camm, Marquise de Castellane, John Hopper, Reynolds Hole, Princess Mary of Cambridge, and Sanateur Vaisse.

**Celery Fly (A. S. D.).**—It is not at all certain that the plants are free from attack now; but, on the contrary, they are often attacked virulently in September. We have seen some very fine rows of Celery this year from which the fly has been banished by syringing the plants with a mixture of petroleum and water once or twice a week, according to the judgment of the gardener, and the maggots in the leaves were killed by the application. About an ounce of petroleum, or half a wineglassful, was mixed with a gallon of water. Applied in the evening it did not injure the plants in the slightest degree, but rather appears to have benefited them. In another column Mr. Henderson describes his success in destroying the maggot with tobacco water.

**Keeping Grapes (D., Dean).**—There is no doubt that it is a mistake to allow Vine borders to get "quite dry" when the Grapes are ripe. On this point Mr. Barron writes emphatically in his sound work, "Vines and Vine Culture." He says:—"All Grapes that are required for late use should be ripened by the month of September. Grapes that have to be ripened after this period never keep so well. Although when the fruit becomes ripe the most active period of the growth of the Vine is past, it is not well, although it is a very old custom, to keep the borders and the roots dry. The artificial drought is injurious to the roots, which are still in action, and not beneficial to the fruit, for the longer the foliage can be maintained fresh and green the better the Grapes will keep. Mr. Taylor does not hesitate to water his inside borders on wet days whilst the Vines are laden with ripe fruit; he has no fear of damp or mould arising in that way, and he is right. His trust is in thorough ventilation by day and by night, and the maintenance by fire heat of an equable temperature, ranging as near 45° as may be possible. Constant daily supervision is necessary, and great care should be taken to remove any decaying berries. Ripe Grapes may be kept in good condition on the Vines until the end of February or until the rise of the sap; but if allowed to hang to so late a period the operation of pruning is likely to be injurious to the Vines. All fruit should, if possible, be removed from the Vines, so that they may be pruned by the end of January." That is equally our experience, and if you differ seriously from that system of management you will make a mistake. If you think differently, adopt both methods and note the results.

**The Seckle Pear (Fancier).**—You are quite right as the high quality of this Pear, as few, if any, surpass it in richness; but you are totally in error in regarding it as an "old English" Pear. The Seckle Pear is of American origin, and is first noticed by Coxe, an American pomologist in his "View of the Cultivation of Fruit Trees." It was sent to this country in 1819 by Dr. Hosack of Philadelphia, along with several other fruits, to the garden of the Horticultural Society. The original tree is still in existence, and is growing in a meadow in Passyunk township, about a quarter of a mile from the Delaware, opposite League Island, and about three miles and a half from Philadelphia. It is over a hundred years old, and about 30 feet high. The diameter of the trunk, at a foot from the ground, is 6 feet; and 5 feet from the ground it is 4 feet 9 inches. The trunk is hollow and very much decayed; the bark, half way round, to the height of 6 feet, is entirely gone; and so far has the progress of decay advanced, that, it is feared, in a few more years the tree will have ceased to exist. There are, however, young suckers growing from the root, by which the original stock will be preserved. The property on which the tree stands belonged in 1817, according to Coxe, to Mr. Seckle (not Seckel) of Philadelphia, and hence the origin of the name. Downing says, "The precise origin of the Seckle Pear is unknown. The following *morceau* of its history may be relied on as authentic, it having been related by the late venerable Bishop White, whose tenacity of memory is well known. About 1765, when the Bishop was a lad, there was a well-known sportsman and cattle-dealer in Philadelphia, who was familiarly known as 'Dutch Jacob.' Every season, early in the autumn, on returning from his shooting excursion, Dutch Jacob regaled his neighbours with Pears of an unusually delicious flavour, the secret of whose place of growth, however, he would never satisfy their curiosity by divulging. At length, the Holland Land Company, owning a considerable tract south of the city, disposed of it in parcels, and Dutch Jacob then secured the ground on which his favourite Pear tree stood—a fine strip of land near the Delaware. Not long afterwards it became the farm of Mr. Seckel, who introduced this remarkable fruit to public notice, and it received his name."

**Passifloras (B. Jordan).**—The following are good and will probably succeed in your rather warm and lofty greenhouse:—*Cærulea racemosa*.—Growth rather slender but very free, and the plant does well in a greenhouse, which is more than can be said of the majority of the Passifloras enumerated in catalogues as suitable for the temperature of such a structure. The flowers are reddish purple, produced in great profusion in May, June, and throughout the summer, followed by an egg-like fruit, pale yellow when ripe, and of the size of a bantam's egg. Prune in spring before growth, cutting

out the old worn-out wood, and shortening the shoots flowered last year to within two eyes of the old wood. Keep the shoots moderately thin and neatly tied up. Water abundantly in summer when growing, and in winter keep dry, thinning out the shoots in autumn after flowering. Propagate by cuttings of the young shoots in summer, best the short stubby shoots taken off close to the stem, inserting in sand under a glass, and placed in a gentle bottom heat. Two parts light loam, and one part each peat and leaf soil, with some sharp sand. *P. Impératrice Eugénie*, with red, white, and blue flowers, is also free in growth. *P. Countess Giuglini* has fine large white and blue flowers, and is one of the finest of the Passion-flowers, but in a greenhouse it requires time; indeed, according to our experience, though many of the Passifloras succeed after some time tolerably well in a greenhouse, yet from the late growths that are made, and the consequent imperfect ripening of the wood, they are there precarious subjects. They do best in a cool stove or a warm greenhouse. The Passifloras thrive in a compost of two parts light fibrous loam, one part sandy peat, and one part leaf soil, with a free admixture of sharp sand. The best mode of training is, perhaps, to allow one shoot or rod to each wire, to permit it to grow to the extent required without stopping, and the side shoots to grow at will; as they do so in a hanging or drooping manner, the effect when in flower is very pleasing. In autumn the side shoots should be cut back to about a foot in length, and in spring, when they begin to grow, cut them back to within an inch of the rod or shoot whence they proceed. It may be necessary for a year or two, at the spring pruning, to shorten the principal shoots to the firm or ripe wood, as their points, from being made late in summer, are not ripened, and they not unfrequently die back in winter. Another shoot as leader will, of course, need be trained in their place. Allow the shoots to grow freely, only if they do not show flowers at a foot or 18 inches in length, take out their points. Beyond the shortening of the shoots in autumn, essential to afford light to the plants beneath, and the spurring-in during February, no other pruning is given. When any of the rods become worn out they may be cut clean out, and in their places other shoots trained from the base. From October to March they require to be kept rather dry at the roots, and throughout the summer abundant supplies of water are required, affording top-dressings of rich compost, or about an inch of short manure in May, and again about the middle of June.

**Names of Fruit (Dickson, Brown, & Tait).**—The Pear is not ripe. The fruit resembles *Beurré de Capiaumont*, and if the tree is a close and upright grower it is no doubt that variety. (*J. Ramsay*).—Spring Grove Codlin. (*A. S. D.*).—*Reinette de Canada*.

**Names of Plants (J. J., Lancashire).**—The *Masdevallia* is infracta, the *Oncidium* is *O. Schlimi*. The flowers of *O. Lanceanum* differ slightly from the ordinary form, but there are several similar variations. The *Dendrobium formosum giganteum* flower is very fine, one of the best we have seen. (*F. T. Arnold*).—*Hieracium aurantiacum*.

#### COVENT GARDEN MARKET.—SEPTEMBER 3RD.

PRICES lower all round, with large consignments from abroad.

##### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. .. .	½ sieve	2 6 to 4 6	Oranges .. .. .	100	8 0 to 12 0
Cherries .. .. .	½ sieve	0 0 0 0	Peaches .. .. .	per doz.	1 0 6 0
Chestnuts .. .. .	bushel	0 0 0 0	Pears, kitchen ..	dozen	0 0 0 0
Currants, Red ..	½ sieve	0 0 0 0	„ dessert .. ..	dozen	1 0 3 0
„ Black .. .. .	½ sieve	0 0 0 0	Pine Apples English ..	lb.	4 0 5 0
Figs .. .. .	dozen	0 6 1 0	Plums .. .. .	½ sieve	4 0 7 0
Grapes .. .. .	lb.	0 6 2 6	Strawberries .. ..	lb.	0 0 0 0
Lemons .. .. .	case	15 0 21 0	St. Michael Pines ..	each	0 0 0 0

##### VEGETABLES

	s. d.	s. d.		s. d.	s. d.
Artichokes .. ..	dozen	2 0 to 4 0	Lettuce .. .. .	dozen	1 0 to 1 6
Beans, Kidney ..	lb.	0 3 0 0	Mushrooms .. ..	punnet	0 0 1 6
Beet, Red .. .. .	dozen	1 0 2 0	Mustard and Cress ..	punnet	0 2 0 0
Broccoli .. .. .	bundle	0 9 1 0	Onions .. .. .	bushel	2 6 3 0
Brussels Sprouts ..	½ sieve	0 0 0 0	Parsley .. .. .	dozen bunches	2 0 3 0
Cabbage .. .. .	dozen	0 0 1 0	Parsnips .. .. .	dozen	1 0 2 0
Capsicums .. .. .	100	1 6 2 0	Potatoes .. .. .	cwt.	4 0 5 0
Carrots .. .. .	bunch	0 3 0 4	„ Kidney .. .. .	cwt.	4 0 5 0
Cauliflowers .. ..	dozen	2 0 3 0	Rhubarb .. .. .	bundle	0 4 0 0
Celery .. .. .	bundle	1 6 2 0	Salsafy .. .. .	bundle	1 0 0 6
Coleworts .. .. .	dcz. bunches	2 0 4 0	Scorzenera .. .. .	bundle	1 6 0 0
Cucumbers .. .. .	each	0 2 0 4	Shallots .. .. .	lb.	0 3 0 0
Endive .. .. .	dozen	1 0 2 0	Spinach .. .. .	bushel	1 0 2 0
Herbs .. .. .	bunch	0 2 0 0	Tomatoes .. .. .	lb.	0 6 0 0
Leeks .. .. .	bunch	0 3 0 4	Turnips .. .. .	bunch	0 4 0 6



#### LAND TILLAGE AFTER HARVEST.

(Continued from page 206.)

THAT cleanliness of the land is the main test of good farming has been repeatedly insisted upon by clever practical men, but we cannot rest content to apply that test alone. It seldom answers to base an argument upon the experience gained upon a single farm. Take, for example, the farmer of a stony soil resting upon a substratum of gravel. To him mechanical division and drainage are as an idle tale, while clean land in a due condition of fertility is undoubtedly a safe test. But such favoured mortals ought not to forget that it is by no means uncommon to hear a man say that his land is too stiff and wet for winter folding. Why?



Simply because the land lacks mechanical division and drainage. It was once our happy lot to manage a large farm whereon neither drains nor artificial mechanical division were required, for it was naturally perfect in both these important points. Now we have to deal with a silicious soil practically void of stones, and consisting in its virgin state of such minute particles that it settles down into a hard inert mass almost impervious to moisture. One field, rightly termed Cinder Field, contains a large quantity of slags from some exhausted ironworks. This slag mixed with the soil renders it so porous and sound that we can plough with a certainty of a good seed bed however wet the season may be, but we dare not venture to do so elsewhere till the condition of the soil has been changed by drainage, and dressings of lime and ashes or burnt earth.

It was recently our privilege to listen to a lecture by Professor Jamieson, under whose guidance some 1300 farmers are successfully bearing the strain of hard times by the practice of a sensible and energetic method of farming in Aberdeenshire, and we were much impressed by the earnest manner with which he dwelt upon the importance of a clear knowledge by farmers of the influence of water and air upon the soil and the crops growing in it. Without attempting to give a full report of his lecture we may adduce some points of it bearing upon our subject. Regarding the soil as a vehicle for plant food, it is clearly our business to render its condition suitable for that purpose. In doing this we have first of all to insure thorough drainage and mechanical division. We then draw off superfluous water quickly, causing it to act as a scavenger of the soil, and also as a solvent of fertilising gases which pass into the soil and are taken up by the plant roots growing in it. Water passing thus through soil gives place to air, which, pressing as it does at the rate of 15 lbs. to each square inch of surface, enters the soil as its pores become open to it. The high importance of this action will be in some degree apparent when it is understood that 97 to 98 per cent. of plant food comes from the air. Here Professor Jamieson goes even further than the French chemist, M. Georges Ville, who gives 93.55 parts of plants as derived from air and rain. The difference is unimportant if we can only grasp the principle and act upon it. Well-drained soil has its temperature raised; and instead of retaining water hurtfully to plant life, it becomes the vehicle of water to plants, it gets rid of noxious matter, and in part opens the soil for the entrance into it of the warm fertilising atmosphere about it, thus promoting what has been termed circulation in the soil. In order to grasp fully how much air and water contribute to the growth of plants, we have only to look at the bulk of a full crop taken from a field; and yet, although the 1 or 2 per cent. per acre of chemical ingredients added by us is comparatively trivial, yet without it and the proper cultivation of the soil all the rest is useless or very nearly so.

Nitrogen, phosphorus, and potash are the elements of fertility with which we have to keep the soil supplied, but before we do so the condition of the soil must be rendered suitable for it. This startling fact cannot be repeated too often, pointing as it does unmistakeably to a clear saving upon the wasteful outlay upon manures which has so long been the bane of farmers. In doing all we can now to clean the land as the corn is cleared from the stubbles, we must avoid extremes. Land that is clean—by which is meant only having straw stubble and harmless weeds in it—requires neither harrow nor scarifier, the stubble being ploughed in as a manure, all the more valuable for its slow decay. Land foul with couch grass, Dock, and Thistle roots, Crowfoot, and the seeds of weeds ought certainly to be pared and burnt if possible, both for a thorough eradication of such pests, and for the valuable ashes to be so obtained. The burning of humus, valuable for plant food, has been justly condemned, and we fully agree, but we are bound to insist upon the excellent effect of burning noxious perennial weeds not easily got rid of by any other means.

To the home farmer the gradual improvement of the condition of the soil is as important as it is to the tenant farmer. We advocate no rash measures involving a heavy outlay; rather would we proceed with caution step by step, doing all that is possible to one or more fields now, so that the superior crops which may be reasonably expected to follow may carry conviction of the soundness of the process, and prove that money so spent affords a fair margin of profit, while half measures only lead to failure, or success so trivial as to be unworthy of the name.

#### WORK ON THE HOME FARM.

*Horse and Hand Labour.*—Cleaning the land is our primary object so long as fine weather lasts. Where steam tackle can be had for the purpose, not only is the work done expeditiously, but the horses are at liberty immediately after harvest for carting work, which should be

pressed on while the land is dry and firm. Carting dung for Wheat should be done forthwith; but Wheat-growing on the old system of bare fallow and farmyard manure does not pay, and is clearly a thing of the past. Well-drained land, thoroughly stirred and dressed with genuine artificial manures, is the method which pays in a good season. Major Sergison, Cuckfield Park, Sussex, who farms a thousand acres of his estate himself, states that he has this year grown thirty-six bushels of head Wheat (white) per acre, and a splendid crop of straw. He has been offered 42s. per quarter of eight bushels for it; but taking it at 40s., its value per acre is £9, the straw is estimated at £4 per acre, making a total of £13. The cost of all the operations of husbandry, from the first ploughing in 1883 to taking the corn to the mill in August, and including chemical manure, seed, rent, rates, and tithe, was £9 18s. 8d. per acre; showing a profit of £3 per acre. Professor Jamieson's prescription for grain crop per acre was followed. It is—half a cwt. nitrate of potash, 1½ cwt. nitrate of soda, half cwt. steamed bone flour, half cwt. superphosphate, half cwt. coprolite. Cost should be about 33s. per acre. Half of this quantity to be given in autumn and the remainder in spring. We, too, have applied this formula to all our corn land this year. Till the corn is thrashed we cannot state results, but we have ample reason to regard them as entirely satisfactory, notwithstanding that most of the Wheat was lodged and the reaping proportionately expensive. If the sowing of Trifolium has not been done no further time should be lost. Winter Tares, on the contrary, should not be got in till the end of the month; if sown before then they are liable to become so forward as to be killed by subsequent severe weather. Rye may now be sown, as the land is clean and ready; three to four bushels of seed per acre—more rather than less for a winter crop. Mustard, too, should be sown for folding at the rate of 20 lbs. of seed per acre. Only take care to get the land clean, and then do not let it lay idle; a winter green crop, either for folding or ploughing in, preserves nitrates that are washed from bare soil. If coal carting falls upon the home farm, now is the time to lay in a stock for winter while the roads are firm and draught light. Finish stacking litter as soon as may be, and let each stack be thatched, both for neatness and to preserve the litter as long as may be necessary. We obtain bracken at 9s. to 10s. per waggonload, but a sharp look-out has to be kept to prevent cheating. Upon receiving the first load this season we got upon the top and in a few minutes had trodden it half-way down the "ladders." The cutters had put it upon the waggon with a light hand, taking care not to trample it, calculating that it would pass muster, as it does not sink upon the waggon like the litter.

BATH AND WEST OF ENGLAND SOCIETY.—At a Council meeting held at Bristol last Tuesday, August 26th, there were present:—The Right Hon. Sir T. D. Acland, Bart., M.P., in the chair. Mr. Moysey, as Chairman of Finance, reported the payment by the Brighton Local Committee of the sum of £800 required by the Society in connection with the meeting next year in that town. Mr. Brown brought forward a resolution in favour of a special grant being made by the Society for the encouragement of dairy husbandry, and the sum of £50 was voted for distribution in special prizes for dairy produce at the Brighton meeting. A special committee was appointed to suggest how the amount should be apportioned. The Chairman of the Stock Prize Sheet Committee (Colonel Luttrell) and the Steward of Poultry (Mr. R. H. Bush) applied for grants for the prizes proposed to be included in the 1885 prize sheet, and £2060 was voted for the purpose, in addition to the special prizes. On the application of the Stewards of Horticulture (the Hon. and Rev. J. T. Boscawen) and music (Mr. Gray and Colonel Troyte) the amounts required were allotted for these departments.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain	
1884. August.	Barome- ter at 32° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday .....	24	30.105	71.7	62.7	E.	63.3	86.7	54.0	119.8	48.3	0.032
Monday .....	25	29.984	65.3	61.8	N.	67.0	67.4	61.3	82.6	52.6	—
Tuesday .....	26	30.165	57.2	51.3	N.W.	63.9	61.4	45.7	101.3	38.7	—
Wednesday ..	27	29.931	55.8	52.0	E.	62.2	59.4	48.7	74.7	43.4	0.300
Thursday ....	28	29.667	61.1	59.7	W.	61.4	60.3	53.6	113.4	52.7	0.130
Friday .....	29	29.738	57.8	56.6	W.	61.0	67.1	51.3	114.2	46.2	—
Saturday ....	30	29.903	58.4	55.6	E.	60.6	63.7	51.9	91.3	46.4	0.152
		29.929	61.0	57.1		63.2	68.6	52.4	99.6	46.9	0.614

#### REMARKS.

- 24th.—Hazy early; fine, bright, and very hot.  
 25th.—Rain in early morning; cloudy cold day.  
 26th.—Fine, clear, and bright early; but cloudy most of the day.  
 27th.—Dull cloudy morning; rain in afternoon and night.  
 28th.—Heavy rain early; fine bright morning; heavy shower in afternoon (0.12 in. fell in seven minutes); fine evening.  
 29th.—Fine bright morning; afternoon frequently cloudy, with spots of rain at times.  
 30th.—Cloudy with showers.

With the exception of Sunday the week was dull, cool, and unsettled, appearing quite autumnal after the brilliant weather that preceded it. Temperature about 6° below that of the preceding week, but very little below the average.—G. J. SYMONS.





## COMING EVENTS

11	TH	Bury St. Edmunds Show.
12	F	
13	S	
14	SUN	14TH SUNDAY AFTER TRINITY.
15	M	
16	TU	Caledonian Society's Show (Edinburgh).
17	W	

### THE ROSE SEASON OF 1884.

**I**T is now time to dispassionately look back upon the past season. The fray is over, the combatants have retired to winter quarters, and the clash of striving competitors is no longer to be heard; and although some of us have not mixed in the fray, yet we were continually hearing so many and such varied opinions, that although I had formed my own estimate of the season, yet by hearing from one and the other so many conflicting statements, one begins to doubt if that judgment were correct. Some will doubtless object to that which I now write, but it has been formed on a tolerably wide acquaintance with the Rose and Rose-growers in all parts of the kingdom, for again it has been my happy privilege to assist at judging at most of the principal shows in the kingdom; for, besides the three National Rose Society's exhibitions, I have been at Bath, Cardiff, Reigate, Sutton, Farningham, Leek, Liverpool, Darlington, and Helensburgh, and have, moreover, visited many Rose gardens—from the garden on the cliff of Mr. Biron on our south-east coast to that of my friend Mr. Hall at Larchwood, Rockferry, and have gathered materials for forming my judgment as time went on. Well, and now what is that judgment? Again I have to write that unpleasant word, an "abnormal" season. When it is to be otherwise who can tell? The seasons vary, and of one thing I am quite persuaded—that Roses are later than they used to be. When the National Rose Society was established eight years ago there was a strong opinion amongst Rose-growers that in justice to them the metropolitan exhibition ought to be held alternately in the last week in June and the first week in July; but now we do not hear anything of that, and as the first Tuesday in July is the date fixed for the metropolitan show there has been a general opinion expressed that it will be just the date suitable. Whether as the seasons alter again, which they probably will do, we shall return to our earlier date is a matter we may well leave. It is sufficient to note the fact that shows in June, except in one or two favoured districts, are too early.

The history of the Rose season is no very complicated one. We had in all parts of the kingdom an exceptionally mild winter, and when the time for pruning came the Rose garden looked as green as in summer. The flower buds had formed at the end of many of the shoots, and considerable doubt was expressed as to effects of pruning and the injury which would be done in causing the plants to bleed. I believe these fears were groundless. I knew that, at least as far as my own were concerned, I never had better growth. Everything went on swimmingly until the end of May and beginning of June; then set in some cold bitter north-east winds, accompanied in some places with sharp frosts. This effectually checked in every place the progress of the plants. The buds remained *in statu quo*, and for a fortnight no change was noticeable; nor could it well be otherwise. With the ground cold and hard, the atmosphere dry and harsh, and

with not a drop of rain to soften either soil or air, nothing else could be well expected, while in some places the shoots had been injured by the frost. Towards the end of June and beginning of July a great change took place, and although no rain fell in many places the temperature rose rapidly with a blazing sun, and the consequence was that the flowers rapidly forced into bloom wanted both substance and size. This was painfully visible at the earlier shows, and more or less so throughout the season. Even our doughtiest amateurs confessed that they were not up to their usual form. This, of course, told most with those where the soil was light. It might have been supposed that in such a season Tea Roses would have been exceptionally good, and that the warm, bright, sunny weather would have suited them to a T (no pun intended); but it was not so, and I believe the general verdict was that they were not up to the mark. We missed one excellent grower, Mr. Davies of Aynhoe, but the other well-known exhibitors in this lovely class were confessedly not in their usual good form. The blooms were, generally speaking, small and lacked substance. I am writing now chiefly of exhibition Roses, but the same thing held good with regard to the Roses in our gardens. The season was a short one, and that second blooming which we look for in August was greatly interfered with by the combined hot sun and want of rain. With me in Kent during the first twenty-seven days of August there was only one passing shower, which dried up immediately, and the effect on Roses was very marked. Generally there has been no difficulty in getting good blooms of Hybrid Perpetuals during this month, and good Teas are to be had in abundance; but neither class has bloomed satisfactorily, as in the earlier part of the season they have been hurried into flower, and have been small and thin, so that it has not been from first to last a thoroughly satisfactory Rose season.

One effect of it has been that it has changed completely the position of many exhibitors. The holder of the challenge cup of the National Rose Society for last year was nowhere; it passed into the hands of Mr. Haywood, the valued Treasurer of the Society. The dry hot season was too much for Mr. Slaughter. Mr. Whitwell was not able to exhibit at any of the earlier shows, and it was not until the venue was changed to the north that he came out in force, and I believe was at his best on July 25th at Newcastle. The most remarkable success was that achieved by the Rev. J. H. Pemberton of Havering-atte-Bower, assisted by his very enthusiastic and Rose-loving sister. His achievements I look upon as entitling him to be considered now our foremost amateur. He grows about 2000 Roses—no very large number. He commenced on July 1st at South Kensington, when his Roses were not quite ready, and ended on July 25th at Sheffield. He exhibited in the principal amateur classes at Bath, Crystal Palace, Salisbury, Liverpool, Darlington, Manchester, and Sheffield, the only small show that he exhibited at being Brentwood; and yet he won nine first prizes, twelve seconds, and four thirds, including five silver cups and three silver medals, two of these not included in the above list being for the best Hybrid Perpetual and the best Tea in amateur classes at the Manchester Exhibition of the National Rose Society. Now, considering the length of time over which his exhibiting ran, the character of the exhibitions at which he showed, and the small (comparatively speaking) number of Roses that he grows, this is a success hitherto unparalleled. Some exhibitors are successful in the earlier part and some in the later portion of the season; but he has been successful all along the line, and anyone who saw his Roses will bear me out in saying that there was no fluking in the matter. He came up to the north and beat the northerners on their own ground, and it takes good Roses to beat Mr. Whitwell and Mr. Hall.

The dearth of new Roses has been something remarkable. Of those of last autumn not one has made its mark, while of



those of the previous autumn Merveille de Lyon is the only French Rose amongst Hybrid Perpetuals which has really come fully to the front, and that in a very decided manner. It is without doubt the purest white amongst the Hybrid Perpetuals, and the season having been a favourable one for light Roses it has been exhibited in grand form, frequently taking the prize as the best stand of light Roses; but of the numerous brood which came out at the same time I cannot bring to mind any that have made a mark. There have been some novelties amongst Teas which are promising. Miss Edith Gifford has been shown well, being a large and well-shaped Rose, flesh and salmon-pink in colour. Madame Cusin, a new shade of colour, has also appeared in many stands. It is of a rosy purplish tinge. Souvenir de Thérèse Levet was also shown well in a few instances. It is the most brilliant in colour of any Tea Rose, bright red, said to be a seedling from Adam; but I must confess that these brighter-coloured Tea Roses have no charm for me. They invariably, to my mind, mar the beauty of a stand. I cannot but think that the chaste and refined beauty of such varieties as Marie Van Houtte, Comtesse de Nadaillac, Catherine Mermet, Rubens, &c., is interfered with when such coloured flowers as these are introduced amongst them. Madame Lambard is quite deep enough in colour, and these flowers are deeper still. Amongst the home Roses Lady Sheffield, although not exactly a new Rose, has been very fine, and will be found to be a valuable Rose.

But whilst the newer Roses have not made much mark, some of the older varieties have come out grandly this year. It has been a season for the lighter-coloured Roses, and the blooms of surpassing excellence of some of the brighter-coloured flowers have been few, and remain fixed in one's memory. Who can readily forget the marvellous flower of Général Jacqueminot exhibited by Messrs. Curtis & Sanford at South Kensington, or the wondrous bloom of Marie Baumann shown by Messrs. Mack at Darlington, to be rivalled, as I understand, by the A. K. Williams shown by Mr. Hall at Sheffield? but it is because the general run of these flowers was not up to the mark that these remain in one's memory. But if I take the light-coloured Roses, if I am asked, Where was the best bloom shown of Merveille de Lyon or Madame Lacharme? I am forced to confess that they were so generally good that I cannot determine the question. Then how fine such Roses as François Michelin, Mons. Noman, and that favourite old flower, Madame Charles Crapelet, have been—Roses which are easily spoiled by wet but rejoicing in sunshine, of which we have certainly had a very large share this season.

Such, then, are a few of the salient points which strike me in looking back on the past Rose season. The zeal of Rose-growers in no way abated; continually, as old exhibitors drop off, their places are supplied by new comers. New centres of exhibiting have been opened, while some old ones have been closed; but Rose shows are now so numerous that exhibitors have to choose where they are to show, for to be at all of them is impossible, and with a sigh the enthusiastic grower says, "I can't go there, as I am bound to show elsewhere;" and while it must ever be a source of regret that some of the giants of former days are no longer with us, yet while we regret the absence of such men as Messrs. Baker, Jowitt, and Davies, we gladly welcome new comers, as Mr. Girdlestone, Mr. Slaughter, and others, and hope that they will help to maintain the high position to which Rose shows have attained.—D., Deal.

#### OUTDOOR MUSHROOM CULTURE.

THIS method of Mushroom culture at Oakbrook, Sheffield, the residence of Mrs. Mark Firth, is carried out very successfully, this season's productions being quite equal (with the exception afterwards mentioned) to the remarkable crop that was reported in the *Journal of Horticulture* last year. The demand for Mushrooms at Oakbrook having greatly increased since this system was adopted by Mr. W. K. Woodcock, in order to meet the requirements this season he made up two beds, ridge-shaped, about 10 yards long. The first was

put together last November, and spawned as soon as ready. It commenced to bear in March, and has yielded a large quantity of most excellent Mushrooms that have been gathered almost daily, several gatherings weekly always being required on ordinary occasions. The second bed was made up in February, and has produced as good a crop as the first one. In the course of the usual gatherings on one occasion nearly a bushel of good Mushrooms was taken from it at one time. The Mushrooms have been firm in texture, of good size, and fine flavour. I saw the beds soon after they commenced bearing, and in addition to the Mushrooms ready for gathering there were very large numbers of small ones visible wherever the ridges were uncovered.

Both beds continued productive until the early part of July, when they began to dry up and the produce to fall off considerably; and although Mushrooms have been regularly obtained up to the present time, the yield has only been small. The beds are fully exposed to the sun, and dried up rapidly in the great heat we have lately experienced, which evidently is detrimental to the artificial growth of Mushrooms in the open air. The beds were never watered except upon one occasion, when they were uncovered for a short time during a slight shower. Mr. Woodcock attributes the falling-off in the crop to the hot weather of July and August, and he would recommend, when practicable, the beds to be made up in a position partially shaded from the sun during the hottest months of the year. This opinion appears to be a correct one, as the ridges are again showing signs of activity. Simultaneously with the falling of the temperature of the atmosphere numerous young Mushrooms made their appearance all over them; they now promise a further increased supply for the autumn. The bed first made up will shortly be removed to make room for a new one, but the other will remain for some time longer, and it would be interesting to know the result of the next few weeks, in order to test the accuracy of the opinion given as the cause of the almost dormant state during the period mentioned above.

Mr. Woodcock informs me that the beds he makes up are generally productive about five months, which, I believe, is almost double the time that Mr. Barter gathers from his beds. This important prolongation of the bearing period speaks very highly of Mr. Woodcock's skill and ability, and is due, he believes, to his system of adding from time to time fresh sweet litter to the covering. This is a valuable hint, and worthy of note by all cultivators. Litter fresh from the stables is rich in ammonia, and this is doubtless the principal agent in prolonging the period of bearing. The old material by exposure to atmospheric influences and rain loses the ammonia it contained in a fresh state, and evidently its value as a covering for the ridges. The method adopted is the one so ably advocated in "Mushrooms for the Million" by Mr. J. Wright, and is another of the now numerous proofs of the value and utility of the work that has commenced a new era in Mushroom cultivation. All who wish to grow Mushrooms, and those who have not been thoroughly successful in their efforts, should possess a copy, and carefully read the chapters devoted to their cultivation; and if the instructions are followed with care and attention success is almost certain, provided, of course, that the materials used are in a proper condition, and such as are recommended. Mr. Woodcock, who is well known as an able gardener and a successful cultivator of Mushrooms, thinks very highly of the work and the system so ably advocated, which he has proved to be thoroughly sound and practicable.—J. H. S.

#### ORCHID NOTES.

DENDROBIUM FREYDAIANUM.—This variety was imported by the Liverpool Horticultural Company, Garston, and sold by them as a new variety, according to the testimony of their collector. Whether it is new or not is more than I can tell, but it is totally distinct from any other Dendrobium that I have seen. This is also the opinion of an experienced Orchid grower to whom a flower was shown, and who purchased at the same time I believe, but has not yet flowered his plants. It is little more than twelve months since the plants were sold by auction, but they had been previously potted into 5 and 6-inch pots, and young growths had just commenced to issue from the base of most of the plants. The growths lengthened out very slowly, as may be supposed, for the first growths were made during the autumn and winter, and only completed with us in the spring. The temperature of the house in which they were growing averaged about 60° at night. We have two plants, and the growth of one was completed earlier than that of the other. As soon as the pseudo-bulbs were firm water at the roots was gradually withheld, and the plants kept comparatively dry for at least two months. The plant that completed its growth first has never been removed from the house in which it was first grown, and has been flowering during the last month or six weeks.



The young growths from the base of this plant are five or six in number, and now about 1 foot in length. The other plant was removed to a cool structure for at least two months, and kept comparatively dry during that time. This was done to find out if possible what amount of rest this variety appreciated, and under what conditions it would rest best, either to induce it to flower freely or grow luxuriantly. Up to the present time we can decide upon nothing certain, for the specimen rested in a cool house and then returned to the heated structure has not yet shown signs of either starting again into growth or producing flowers. It appears to us that this variety is evergreen, and must be treated as such, for neither plants have lost their foliage. The pseudo-bulbs require to be grown in plenty of light during its latter stages of growth, so that its stems will be firm and solid, from which the flowers will be produced just as the plant is again starting into activity.

It is yet difficult to say what time of the year this variety should make its growth and flower, for being started into growth so late in the season there was no alternative left us but to endeavour to assist as much as possible the plant to complete the growth commenced. The time of growing and flowering may by judicious care perhaps be changed; if not, and the plant persists in growing during the dark sunless days of winter, it is evidently a shade instead of a light-loving variety. The reason we think it necessary to give plenty of light to solidify the bulbs during the last stages of growth is because our plants received abundance of light during the spring months when in that condition of growth. *D. Freydianum* resembles *D. luteolum* in some respects, and at the same time is totally distinct.

The pseudo-bulbs are slender, of upright growth, slightly arching towards the end, and about 2 feet 6 inches in length. The young stems are green and thickly covered with black hairs, while the old ones are grey or silvery. The foliage is dark green, leathery, and produced alternately along the stem. The flowers make their appearance from the joint directly opposite the leaf, and up to the present have been produced in pairs near the extremity of the pseudo-bulbs that have been made during the previous season. The flowers are about 1½ inch across, peculiar in shape, much after *D. luteolum*, only the lip is not thrown down the same as it is in that species, but has more the appearance of a tube with an enormously long spur. The flowers are by no means showy, yet they are delicate and beautiful. The whole of the flower is pure white, except the lip and throat, which are veined with orange scarlet, the former beautifully and faintly pencilled with the same colour, and is well fringed. The marking of the throat and lip gives to the under side a faint pinkish hue, which really adds to the beauty of the flower. Our plants are growing in peat and moss, the former predominating. They have been given a fair supply of water and moisture during growth. This variety is certainly worth growing, and appears as if it would increase rapidly, for upon one of our plants seven or eight young ones have been produced from the old pseudo-bulbs.

*CYPRIPEDIUM SPICERIANUM*.—This is undoubtedly the most beautiful *Cypripedium* that has been imported during recent years. It is distinct, and ought to be in every collection however limited. Not only is it distinct, but perhaps the freest flowering form in cultivation. Every little piece will flower as freely as a robust plant. It will grow in a cool house, but with greater vigour and luxuriance in a stove temperature. In the former the foliage is of a light green or yellowish cast, while in the latter it is of a fine dark hue. While in flower it will bear the conditions of a cool house or the temperature of the conservatory as well as *C. insigne* and *C. villosum*. It should be grown in a night temperature of 60° to 70°, with a corresponding rise of 10° or 15° by day, and kept while in flower in a house where the night temperature ranges from 45° to 50°. It is benefited by the rest it receives in the latter, and grows strongly and increases rapidly in the former.

To show the freedom with which it flowers it may be mentioned that a small semi-established plant with a pair of old leaves and a young growth just issuing from the base was purchased in November last. It completed its growth in a night temperature of 60°, and flowered in February, and the same plant under stove treatment will have flowers open again in a day or two. I have never yet seen it recorded anywhere that this variety will produce more than one flower on a stem. One other plant which we have had longer has never done so. I have seen several larger plants in flower, but never seen two flowers on the same stem. The small plant obtained in November last, and above alluded to, is not strong, but has two flowers on one stem from the growth made during the summer. This I think is unusual, and it would be interesting to know if others have had the same results.

This variety grows well in a mixture of sphagnum moss and peat in about equal quantities, with a few lumps of charcoal intermixed. Abundance of water should be given while growing—in fact, the material surrounding the roots should never be allowed to become dust-dry, not even during the resting season.

*ONCIDIUM VERRUCOSUM*.—This is not so good as its variety *Rogersii*, but is nevertheless worthy of a place in any garden. It is comparatively easy of culture, and will do better either on a block or in a basket suspended from the roof than in a pot. It is a decided advantage when Orchids can be grown successfully on blocks or in baskets, and this is the case with many *Oncidiums*, which delight in throwing their roots into the atmosphere. The species in question, as soon as it becomes established, will do this freely. While making its growth a moist heated structure, such as the stove affords, is suitable. As soon as growth is completed, which will be the case now if grown in heat, the flower stems will be seen issuing from the base of the pseudo-bulb, and as soon as they can be observed the plants should be gradually removed from the heated to a cooler house. We have just suspended our plants in the *Odontoglossum* house, and their flower spikes are advancing slowly, but they are sturdy and strong in comparison to what they would have been if kept in heat.

*O. verrucosum* flowers very freely, and is one of the best *Oncidiums* that can be grown for associating with *Odontoglossum Alexandræ* in a cool house during the autumn and winter months. As soon as the flowers commence expanding in the cool house no more water should be given than is sufficient to keep the pseudo-bulbs plump, or the roots may be seriously injured. It grows freely in a compost of charcoal (used in lumps) and sphagnum moss. Abundance of drainage is needed, for liberal supplies of water should be given during the growing season, but while at rest the plants must be kept cool and dry at their roots.—L. D. W.

#### APRICOTS.

I HAVE for long attributed to the cold east winds of the late spring months the predisposing cause of branches dying during summer, so annoying in so luscious and valuable a fruit as is the Apricot. The immediate result of these winds, proverbially neither good for man nor beast, and which might be amended to include plants as well, is that the growth of the Apricot is retarded until these disappear. Now reasoning *a priori* from the early-blooming habit of this fruit we would conclude that weather during April and May to be suitable should be of a mild and genial character. Instead of that, the temperature is generally low, with dry east winds very often prevailing, so much so that indigenous hardy fruits like Strawberries and Gooseberries not infrequently are damaged thereby. I believe, could we possibly have for Apricots such weather as Apples get during the earlier period of their season's growth the dying of branches would be unknown, at least the phase of it that we know. This brings me to notice the following facts.

The present spring was almost unvisited by east winds, and the present summer has been remarkable for the almost total absence of Apricot disease. The crop of fruit set was enormous, and after repeated thinnings the crop that is brought to maturity is also enormous, speaking in comparison with late past seasons. Nor is that all: the fruit has been larger than usual, and has ripened in a more satisfactory manner than is customary in these northern regions. The two latter conditions have undoubtedly been brought about by the generally warm season we have been blessed with. I have seen hot weather blamed as being inimical to the health of the trees, inasmuch as branches often give way at these times. The root of the mischief, however, is to be traced to an earlier period, when the cause of the disease was formed. Doubtless the intense heat of such a summer as the present brings the debility to a climax earlier; but all branches, or most branches that die in summer, may be detected as sickly earlier in the year, and the final catastrophe is merely a question of weeks or months.

Remedies have often been recommended, but I do not know that any of them have been successful, and, so long as east winds do blow, I make bold to affirm never will be. A season like the present must be of great value, in so far as the wood will be certain to be well matured, though the early growth made by the Apricot renders immaturity not so much of an evil; but we may conclude that the growth of this year will be of a harder and firmer character than usual, and so far advantageous, but I am far from thinking that that will hinder damages to the trees next spring should it be one of the usual type. Nor are there any means, short of enclosing the trees under glass and heating when necessary, that are at all likely to be of benefit. Any means of covering or protection that comes short of alleviating the long-continued cold must fail in effect.

Very many trees have been completely ruined during the past ten



years, and, as a means of quickly filling the places of these, very little pruning should be attempted in so far as the leading growths are concerned. Continued attention to the production of fruiting spurs by systematic pinching should also be made a point of routine culture, and as final advice I would recommend the growing of Moor Park on a more limited scale than formerly. Owing to its fine flavour we cannot lay it aside altogether, but the slight growth it makes renders it more susceptible to injury than other kinds, and it is wise to depend on more vigorous kinds for the production of fruit for cooking and preserving purposes. One of the best, probably the best, is Shipley. It is poor in flavour, but the tree makes rapid growth, and when established is an abundant bearer of good-sized fruit. Peach is of value for a late supply for dessert, and Kaisha is the earliest kind we have yet fruited, and for that reason is worthy of a place. When Apricots do very badly the only plan to pursue is to keep on planting. Maidens are much better than trees that are older. There is generally room for a few of these at the bottoms of walls until they are wanted to fill positions permanently.—N. B.

### THE PLAGUE OF WASPS.

FROM various parts of this country I hear complaints about the number of wasps and their destructiveness this season. No ordinary remedies are of any appreciable avail, and I have long ago arrived at the conclusion that when wasps are very plentiful taking their nests in different ways is so much labour thrown away. The better plan is to preserve the fruit from the wasps rather than to waste time and money in the vain attempt to exterminate them. Unfortunately the wasps do not wait till the fruit is nearly ripe, or in most cases their attacks might be anticipated by gathering and ripening Pears and some other fruits under glass—say on the shelves of a protected vinery or under handlights. The wasps attack quite green fruits and quickly clear them off, and the only remedy is to either cover each single fruit with a muslin bag, or to cover a whole tree with scrim canvas or other light material that will effectually keep out the enemy. Even in this case the fruit must be watched closely, or when the bags especially are opened it may be found that woodlice or earwings have commenced to eat the fruit, this probably causing a rapid decay.

These remarks, however, were suggested by a recent visit to a neighbouring vinery, and it is about the preserving of Grapes I am at present most concerned. The notion that Tomatoes growing in a vinery would serve to drive away wasps will not, I should say, be believed in by many after this season. At any rate, they have completely failed to answer this purpose in our case, and we have been obliged to nail strips of scrim canvas over every ventilator in each house, and this we find the best preventive. In some cases, especially when there are only a few bunches, it may be the simplest plan to enclose each bunch in a muslin bag, but this would not be resorted to by me if it could possibly be avoided. Those who adopt this plan—and I believe there are many who do—I would advise not to rest contented that their Grapes are perfectly safe, as this very precaution against wasps may also be a source of danger. Enclosed in a muslin bag the air is naturally excluded from them to a considerable extent, and no one need be surprised when they opened a long-closed bag to find the whole bunch decayed. Every bunch ought to be examined once a week and every decaying berry carefully removed. A single decaying berry quickly affects the whole bunch—hence the necessity for its early removal. I would prefer to cut and bottle all fully ripe Grapes, placing them in a dry and not very light airy room, where wasps may be easily excluded. Any kind of small bottles, such as those used for seltzer, soda water, ginger beer, &c., will do, and these may be suspended from a rail or shelf and filled with hard or spring water. A good piece of the lateral growth should be cut with each bunch, and when this is inserted in the bottles the weight of the bunches will bring the bottles into a stooping position, and they will thus swing quite clear of the glass. The bottles should be kept filled with water, and this will keep the footstalks green and the berries plump without any apparent impairment of the quality or keeping properties. This early cutting is also beneficial to the Vines, and admits of the houses where necessary being filled with bedding plants, Chrysanthemums, or other plants requiring some protection from frosts.—W. LOGGULDEN.

THERE are many cures for most complaints and diseases, and those for destroying wasps and flies are not less numerous. Few, however, seem to believe in the old though very true proverb that "prevention is better than cure." Still the fact remains, and I am sure not a few have been puzzling their brains of late as to how these pests can be disposed of, and especially those having valuable fruit indoors as well as out. For preserving indoor crops of Grapes and such-like fruits we invariably see bottles suspended to the roof, into which the wasps have to find their way, but instead of which they not unfrequently turn their attention to the equally tempting fruit, and getting their fill without risking their heads. They retire, taking particular notice of the number of house and street. Now, is there nothing by which they may be arrested outside?—for example, give them a good feed of injured fruit? But cannot we trap them meanwhile? Yes, and this is the *modus operandi*. It is an old one, though none the worse for its age—nay, it should be respected all the more, since it is the most efficacious trap I know of:—Take, then, two square handlights (those with moveable lids preferred) and with them four bricks, one for each corner, and place one of the lights upon them. Remove one of the small

pieces of glass from near the summit of lid No. 1 and return it to its place, after which fix the second handlight upon the first. Thus placed the two make a capital substitute for a hive. Now place some of the ripest injured fruits you can find beneath the lower handlight and the trap is complete. After getting their fill they rise to depart, and ultimately find themselves in the upper room, which they never leave alive. With the aid of a little sulphur each evening they are destroyed, and in this simple way I have known thousands to be captured and killed daily. The more traps used the greater the slaughter.—J. C.

[This simple method of entrapping wasps is figured on page 185, vol. 1, new series, the issue of August 26th, 1880.]

### HARDY BULBOUS PLANTS FOR THE CONSERVATORY.

THERE are many hardy spring bulbs well adapted for embellishing the conservatory during the early spring months. A few pots each of those we shall mention are a great help to a gardener who has to provide a good variety of flowering plants during the early months of the year.

IRISES.—The following early-flowering Irises are very charming and of easy culture. About five bulbs should be placed in a 48-sized pot, which should be well drained, the soil to consist of the usual nature used for Hyacinths. After potting place them in a cold frame, and when they have made an inch or two of growth they should be introduced at intervals to the greenhouse, and a display may be kept up for some time. I. Pavonia, I. persica, and Iris reticulata. Iris Susiana is also adapted for the purpose in question.

TRITELEIA UNIFLORA.—It is not often that this pretty little bulbous plant is grown in pots, but it is well worth the honour. The bulbs should be placed as closely together as possible in 5-inch pots, and place these plunged in ashes in a cold frame, then as the flower stems commence to show remove the pots to a greenhouse.

FRITILLARIA MELEAGRIS.—The old Snake's-head Lily and its varieties are very interesting when grown in pots. Place about five bulbs in a 48-sized pot, and treat similarly to the above until the plants show their flower stems. These and all hardy bulbous plants, after they have started into growth, should be placed where they may receive abundance of light.

MUSCARIS.—These are most valuable for the conservatory. Several bulbs should be placed in 7-inch pots. After they are potted plunge them in cocoa-nut fibre until the growths appear through the soil, when they should receive abundance of light and air. The light blue varieties are very effective.

NARCISSUS BULBOCODIUM.—This is very effective when grown in pots. About six bulbs should be placed in a 6-inch pot, and treated as above described; they are charming for the front stages of a greenhouse, and when once well grown they will be grown again.

FREESIAS.—These lovely Cape bulbs should find a place in every conservatory. They should be potted early in the autumn. Place about three bulbs in a 48-pot, which should be well drained, the soil to consist of a light open material. After potting plunge them in cocoa-nut fibre until they commence to grow, when they should be placed in a light cold frame. Water must be applied carefully.

The following are also very useful:—Scilla siberica, Chionodoxa Lucilæ, Ixias, Sparaxis, Babianas, and Tritonias, all of which succeed under the same treatment recommended for Freesias.—A. YOUNG.

### TIGRIDIAS.

THESE are showy flowers for summer beds in groups here and there; not required too thickly, however, for then their gaudy colours would act as a conductor, and naught else be seen. I am not convinced that Mr. Guthrie's estimate of the time of planting and his method are quite right for this side the Channel, and unless he is planting on very light sandy soils he will find that the months of February and March will be anything but favourable for the operation, and would he unconditionally prefer those months and his prescribed depth on stiffer soils? On these latter with his long dibble he would have an arm-aching time I am sure. I have realised such excellent results from April planting at 3 inches deep that I shall never depart from it; and I know this much, that bulbs from warmer climes than our own, and which we can only risk in the ground for six months of the year, are not benefited by deep planting, to say nothing of the extra labour entailed in lifting, and, being nearer the surface the bulbs ripen somewhat earlier too. T. Herberti may be left in the soil all the winter; it is never harmed if it receives frame protection.

A minimum unconditional depth of 6 inches for Tiger Flowers is a little too much, and for pot culture ordinary pots would be out of it altogether. Extended drain-pipes would more likely meet the case, and assure a little soil below the bulbs; but what of Herbert's Tigridia at this depth? It reminds me of the foreigner's "tip" for Ixia-growing in England. He said the whole secret lay in deep planting, and they should be planted at least (he emphasised those words) 12 inches deep. What charming little things these would be—when they came up!—SPECIALIST.

### HOT WEATHER AND FRUIT TREES.

YOUR correspondent "Thinker" is not always right in his conclusions, at least so it seems to me. He appears to take for granted the accuracy of Mr. Abbey's deductions that the scarcity of fruit of the past few years has been more the result of immature wood in autumn than of frost in spring. I am unable to



agree with either of them. Hard firm ripe growths I will readily grant are conducive to the formation of blossom buds, and also, I willingly concede, to the perfect development of the flowers; but I am nevertheless unable to accept the dictum of your correspondents as to such blossoms being in any sense proof against injury or destruction by frost in spring. Although I always have endeavoured, and always shall endeavour, to do all that is possible to mature the growths of fruit trees in my charge whether they are under glass or in the open air, because that is a safe course to pursue for the production of blossom, I am yet nevertheless painfully conscious of what appears to me a stern fact—that blossom is killed by frost in spring, however well the wood may be ripened in the autumn. I go further than this, and assert that if the wood of fruit trees were what may be termed only fairly well matured, and no spring frosts followed, more fruit would be had than if the growths were ripened to the utmost, and sharp frosts prevailed in April and May.

Let the wood of the fruit trees be as hard as it may, that has no influence whatever in hardening the blossom. The pistils of the flowers of Apples, Pears, Plums, and Cherries—indeed of all fruits—are essentially tender, and will only endure a certain degree of cold, and when that is exceeded they succumb. The stamens and petals are more hardy; but I have known the pistils of fruit blossom killed time after time, however perfect the flowers were, and however hard and ripe the wood, and the same thing will occur again. If severe frosts occur next spring the same dearth of fruit will follow as so many persons are now experiencing in spite of the highly satisfactory state of the trees at the present time.

Nor do I consider that such growths which are not made hard and brown by long exposure to the sun are so inferior in fruit-producing capacity as many persons appear to imagine. Wood well ripened is more hardy and less liable to be injured by frost in winter—the forerunner of canker—than immature wood is; but I venture to say that that portion of the growth of an Apple, Pear, Peach, or Plum tree that is produced in May is not essentially more fruitful than portions produced two months later; yet the former ought to be, and is, harder than the latter.

I have many times seen the finest blossom, and fruit too, on those parts of shoots that are not the hardest and ripest. This is often the case with Peaches; and I have observed Plum trees that would have been practically blossomless but for the flowers that expanded towards the tips of the shoots, and these are, I think, younger than the base. Time after time I have gathered the best Apples from the extremities of the young shoots that could not have been regarded as “well ripened.” They were ripe enough no doubt, but were not hard in the sense that Mr. Abbey and his supporter “Thinker” appear to suggest as indispensable. This, however, is not the chief point on which I dissent from them.

If ripeness of wood in the autumn is of more importance than the absence of frost in spring in the production of fruit, how are we to explain the fact, for fact I believe it is, that there are more Apples in Northumberland than in Kent this year. I am told on good authority that the Kentish orchards, including old trees that made little growth last year, are practically barren, while trees 200 miles north are bearing excellent crops. Such trees I have seen, and I cannot suppose their growths were better ripened than were those of trees on the sunny slopes of Kent.

Roasting and starvation is not wood-ripening, at least for purposes of fruit-production, as many a stunted weakened fruitless tree in orchards proves; and even if such trees produce blossoms in shoals, no matter how hard the wood is, the blossoms will be just as tender and liable to destruction by frost in spring as flowers that are fewer on healthier and free-growing trees, the wood of which is not popularly considered so ripe as it should be, Mr. Abbey's and “A Thinker's” opinions to the contrary notwithstanding.—AN OLD GARDENER.

#### GILIAS.

MOST forms of Gilias that are widely known and deservedly admired in masses, and much used for vases when cut, are annuals. The biennial and perennial section are extremely rare, and although most of them are pretty and deserving a place in all collections, it is seldom they are seen outside a botanical garden.

*G. aggregata*, a handsome biennial, flowered beautifully about two years ago at Floore Weedon, where I believe it also ripened seed, which is a very rare occurrence in this country, owing to the late wet seasons; and to grow the plant well it must have a warm sheltered position, either against a south wall or other suitable place where the above conditions can be attended to. The flowers are extremely handsome, and are borne in loose corymbs, reddish purple, but variable.

*G. Brandegei*, the perennial represented in the annexed engraving (fig. 40), makes a compromise between *Gilia* and *Polemonium*, as it falls exactly between the two, and indeed in habit and outward appearance has more of the character of the latter than the former, yet differing in the colour of the flowers from both of these genera.

*G. Brandegei* forms tufts of small peculiar and pretty leaves, alternate on the leafstalk; the flower stems are erect, from 6 to 8 inches in height, giving a succession of bright primrose-yellow flowers all through the summer and autumn.

It is perfectly hardy, and seems to flourish best in a damp shady



Fig. 40.—*Gilia Brandegei*.

situation; if on rockery the natural drainage will be found sufficient. Planted out in a frame where it can be treated liberally it attains a large size for a *Gilia*, forming in one year a clump from 1 to 2 feet in diameter. The young growths or side shoots may be struck readily under a hand-glass in August and September. Native of the Rocky Mountains of South Colorado.—M. S.

#### NON-PRUNED APPLE TREES.

WILL some of your readers send in the names of Apples and also of Pears which bear on the last year's shoots? “Non-Believer” gives the normal type of growth in the Apple, Mr. Waiting and Mr. Bunyard have favoured us with some of the exceptions. As far as my limited experience extends it appears that certain varieties both of Pears and Apples fail to make what is commonly known as the “midsummer shoot,” and consequently mature some of the buds on the first growth. Amongst Pears Josephine de Malines is a good example, and I think Vicar of Winkfield. To the list of Apples mentioned by Mr. Bunyard Cornish



Gilliflower may be added. It is quite possible that a large number of varieties may possess the peculiarity I allude to, and that many trees grow too much wood in consequence of the pruning knife being used too freely.

The notes on Apples by "R. P. B." are very acceptable, and the subject might be enlarged upon to the benefit of many of your readers. The soil, subsoil, and climate here are all dry, but the typical second growth of Apples and Pears is well developed in many instances, so that the exceptional case of Josephine de Malines cannot be styled an "accident."—C. B.

MAY I suggest that your correspondents who say Apples bear freely on the last year's shoots send examples either to your office or somewhere else to be verified? Their evidence at present is unsatisfactory. One side says the fruit is borne at the "tips" of the last year's shoots only, and another correspondent, Mr. Young, writes this week to say that the fruit appears "over a length of 10 inches at least on the same season's growth, not measuring from the tips of the shoots, but from the base upwards." I feel confident that if Mr. Young will send you examples of the shoots he names you will find the fruit buds he speaks of on the last year's wood just below where this year's shoots start from. He has in all probability reckoned the two years' growth as one, hence his error. I speak of entire shoots, not spur-pruned trees.—NON-BELIEVER.

P.S.—Will Mr. Young please to post me one of his shoots through you?

[Mr. Waiting sent specimens bearing clusters of fruit undoubtedly on the shoots grown last season, the fruit being near the extremities, not at the base of the shoots.]

### HORTICULTURAL EXHIBITIONS AND JUDGING.

SCHEDULES are often very original in country places, and it is the same with judges. The latter often fail to discern the difference between winter and spring-sown Onions, as nine times out of ten winter Onions are shown amongst spring Onions, and as such get the prizes.

A witty writer in the Journal would like to know where Grapes, Melons, Peaches, and Pines were shown in collections of small fruit. At Kendal black and white Grapes were shown in a collection of six dishes of small fruits; the same has been done at Ulverston, Barrow, and many places around, and those are no exceptions to the rule.

At the late Kendal Show a handsome prize was given for the best tray of vegetables, and the collection that won was not on a tray, but staged on the table; some others had simply a frame around them. Now those should all have been disqualified by the reading of the schedule—firstly, because they were not on a tray; and secondly, because no one was allowed to arrange his own produce, but pass it over the stage outside the door. Judges at least ought to see that they read the schedules properly and act accordingly.—J. E. W.

[It would sometimes puzzle them to do so. In this case if the word "collection" had been substituted for "tray" there would have been no ambiguity. Since the fruits named are regarded as "small," it would be interesting to know what are considered "large" fruits by the committees of the shows referred to.]

### AUTUMN-SOWN ONIONS.

I QUITE agree with the gentleman of many initials as to the benefit derived from transplanting the autumn-sown Onions in the spring. I have tried both transplanting and leaving them on the seed bed, and I found I got nearly double weight off the transplanted ones. For exhibition I think it is absolutely necessary to transplant. My mode of culture is slightly different to that of "Y. B. A. Z." and Mr. Muir. I find that autumn-sown Onions require a quantity of rich dung about 16 inches below the surface, in addition to a well-manured top spit. It is well worth the trouble to trench the ground, digging into the bottom spit a very heavy dressing of partly decayed dung, and mixing with the surface soil a liberal quantity of old hotbed manure. Early in February I like to prick out the plants on to this bed, giving it a dusting of lime and soot. I am very particular in having the ground firm and the roots firmly established in the soil. Later on, in showery weather, a dressing of guano and salt will be a great help, well hoeing as soon as the soil is fairly dry. I have never tried nitrate of soda, but will take "Y. B. A. Z.'s" hint next year. This year I tried Daniel's White Elephant Tripoli and grew bulbs from 15 to 20 inches in circumference, but Rocca is a more weighty Onion, and I have sown Lemon Rocca and White Queen in preference. It is worthy of note that Onions seem to do best if planted year after year on the same ground. I may add that if procurable cess-pool liquid between the rows applied in June will be certain to help form exhibition bulbs so long as the liquid does not touch the bulbs.—H. S. EASTY.

### VALLOTA PURPUREA.

AT this season of the year the above plant is one of the most useful we have for embellishing the conservatory or dwelling. There are two varieties of Vallota purpurea: the best has longer and stouter flower stems, the flowers are better in substance and form and of a much brighter colour than the other variety, which is comparatively not worth growing. The secret of success in its culture is to produce strong growth, when its successful flowering will be a certainty. A great mistake in its culture is to dry off the points after they have bloomed. If

this is done the roots perish, the foliage decays, and the bulbs shrivel. It is not often that repotting is needed—that is, if the roots are in a healthy condition and the soil sweet. I have seen pots crowded with bulbs that had not been disturbed for five or six years, and they bloomed beautifully every autumn; but strong young plants must not be allowed to suffer by want of pot-room.

The best time for repotting is immediately after flowering. The pots should be well drained, and the soil to consist of two parts fibry yellow loam, with one part each of good peat and leaf soil, with a liberal addition of silver or river sand. Pot very firmly, and do not give large shifts. The plants should be placed in an intermediate house to start them into growth; if they have not been repotted they should be placed in the same position. Water carefully if they are fresh potted. By the first week in December place them in a cooler greenhouse, and only keep them in a slightly moist condition. In the spring they will commence to grow freely, when water should be freely but judiciously applied. If the plants have not been repotted, and the pots are well filled with roots, a little liquid manure will be beneficial during the growing season.—A. YOUNG.

### BATH FLORAL FETE.

SEPTEMBER 3RD AND 4TH.

THE third or autumn Show of the Bath Society is deservedly popular with all classes of the inhabitants of the city and vicinity, and as a consequence the competition is usually good throughout, while, should the weather prove at all favourable, the attendance of visitors is most encouraging to all concerned. Several large tents are required for the various exhibits, and in no one case were there any appreciable blanks owing to visitors failing to put in an appearance. Specimen flowering and fine-foliaged plants and Fuchsias were shown in great numbers and in excellent condition, the exhibitors including several noted prizewinners; but, in spite of this, the tents containing various cut flowers, fruit, and even vegetables were, and in fact always are, much more attractive to the throngs of people present. We experienced no difficulty in procuring the names of the successful plant-exhibitors and the exhibits, but the case was very different in the other classes, and, as a consequence, our report is not so full and complete as was intended.

*Fuchsias*.—These invariably receive the greatest attention at this Show, and the fairly liberal prizes offered attract some of the finest plants in the country, these coming from the Trowbridge district. The premier group of nine plants was staged by Mr. James Lye, gardener to the Hon. Mrs. Hay, these being perfect pyramids ranging from 8 feet to 9 feet in height, and consisting of such fine exhibition varieties as Lye's Favourite, Hon. Mrs. Hay, Charming, Star of Wilts, Final, Bountiful, Pink Perfection, Harriet Lye, and James Lye. Mr. G. Tucker, gardener to Major W. P. Clarke, was awarded the second prize for a group only slightly inferior to Mr. Lye's, the varieties being very similar. The third prize went to Mr. G. Snell, gardener to Mrs. Counsell, who also had highly creditable specimens. The first prize for six Fuchsias was taken by Mr. C. Fletcher, gardener to C. H. Gabriel, Esq., among these being fairly good pyramids of Bountiful, Arabella, and Annie Luster. Mr. J. H. Miller, gardener to Miss Barrow, was awarded the second prize in this class. With four Fuchsias Mr. J. Riddick, gardener to Mrs. Pinder, took the lead, these consisting of creditable specimens of Charming, James Lye, Bountiful, and Queen Victoria. The second prize went to Mr. A. Southard, gardener to F. J. Walker, Esq., who had good plants of Doel's Favourite and Charming; and the third prize was won by Mr. A. Hawkins, gardener to T. Jolly, Esq. Mr. Lye was first with a single specimen of a light-flowering variety, having a perfect pyramid of Gustave Doré, Mr. G. Snell being second with Marginata in excellent condition. In the corresponding class for a dark variety Mr. G. Tucker was first with a grand pyramid of Charming, Mr. Lye following with a good plant of Thomas King.

*Stove and Greenhouse Plants in Flower*.—The best twelve specimens were staged by Mr. J. Cypher of Cheltenham, these consisting of good examples of Dipladenia amabile, Erica Iveryana, E. Austiniana, E. McNabiana, Ixora Williamsii, I. Coleii, Allamanda Hendersonii, A. grandiflora, A. nobilis, Phoenocoma prolifera Barnesii, and poor examples of Dipladenia hybrida and Rondeletia speciosa. Mr. W. Long, gardener to C. Gardiner, Esq., was a close second, his group including good examples of Rondeletia speciosa (very highly coloured), Ixora Williamsii, I. Fraserii, Anthurium Schertzerianum, and A. Andreanum. Mr. J. F. Mould was awarded the third prize for a fairly good group. With six flowering plants Mr. Tucker was first, these consisting of creditable specimens of Allamanda Hendersonii, Lapageria rosea, Bougainvillea glabra, Statice profusa, a seedling Dipladenia, and Ixora coccinea rosea. Mr. W. J. Mould, gardener to E. E. Bryant, Esq., was second, Mr. D. Bloodworth third, and an extra prize was awarded to Mr. H. Jones, gardener to General Doherty. The latter had a plant of Yucca aloifolia variegata carrying a grand spike of nearly pure white blooms. Mr. A. Hawkins was first with four flowering plants, Mr. W. C. Drummond second, and Mr. G. Hallett (gardener to Mrs. West), all staging fairly good specimens. The best single flowering plant, a good pyramid of Ixora Williamsii, was staged by Mr. W. Long, Mr. J. Cypher following with Stephanotis floribunda in good condition.

A considerable number of fine-foliaged plants were shown, though but few of them were particularly good. The best fifteen were staged by Mr. Cypher, these including highly coloured medium-sized specimens of Croton Johannis, C. Prince of Wales, C. interruptus aureus, and C. Sunset, and fine examples of Kentia Canterburyana, Latania borbonica, Cycas revoluta, and other Palms. Mr. W. C. Drummond was awarded the second for a rather uneven group. Mr. D. Bloodworth had the best nine specimens, these including Croton Johannis, C. fasciatus, and Cocos Weddelliana in good condition. Mr. W. J. Mould had, among others, good plants of Latania rubra and Acalypha musaica, and was awarded the second prize, the third going to Mr. G. Hallett. With a single specimen Mr. J. F. Mould was first, staging a grand example of Gleichenia rupestris, Mr. W. C. Drummond following with a good Cycas revoluta. Mr. Cypher was the



only exhibitor of six Orchids, and was awarded the first prize for good examples of *Dendrobium formosum giganteum*, *Cattleya speciosa*, *Lycaste Skinnerii*, *Odontoglossum grande*, *Oncidium Lanceanum*, and *Lælia purpurata*. Mr. Cypher was also first with six Heaths, and was followed by Mr. W. C. Drummond; while the prizetakers with four Heaths were Messrs. J. F. Mould and W. J. Mould, and with a single specimen Messrs. Cypher and W. Long were the successful exhibitors. Mr. Cypher won the first prize for a single specimen greenhouse flowering plant with a well-flowered *Rhododendron* Duchess of Edinburgh, the second prize going to Mr. G. Tucker.

Several attractive groups of Ferns and Lycopods were shown, the specimens being more remarkable for their healthy appearance than for size. Mr. A. P. Stancombe was a good first with twenty varieties, and was closely followed by Messrs. W. J. Mould and G. Tucker, who took the remaining prizes in the order named. With twelve varieties Mr. T. Carr was first, Mr. H. Jones second, and Mr. A. T. Hall third, the exhibits being very creditable in each instance. Six flowering Zonal Pelargoniums were well shown by several growers. Mr. G. Tucker was placed first, his best being *Acme*, *Circulator*, and *Lizzie Brooks*; Mr. H. Jones was a close second, and the third prize went to Mr. A. T. Hall. Mr. J. Riddick had the best four Zonals, Mr. F. Slade being second, and Mr. G. Snell third, all having well-flowered plants. Balsams were well shown by Messrs. A. Southard, J. Weston, gardener to the Rev. C. C. Layard, and J. Carr; *Achimenes* by Messrs. H. Jones, G. Tucker, and A. Hawkins; *Cockscombs* by Miss Crockford and Mr. J. Lye; *Coleus* by Mr. Lye, Miss Crockford, and Mr. Jones; *Verbenas* by Mr. A. Hawkins; and *Petunias* by Miss Crockford and Mr. Lye, the prizes going in the order named in each instance. Several fine pots of *Lilium auratum* were shown, Mr. G. Hallett having the best, and was followed by Mr. A. A. Walters, the third prize going to Mr. Burnell, gardener to Miss Hellyer. In the class for three *Liliums* Messrs. G. Cooling and Sons were a good first, having fine pots of the lancifolium varieties; Mr. Burnell was a good second, and Mr. A. A. Walters third. Tuberous-rooted *Begonias*, with the exception of the first-prize lot staged by Mr. W. Clifford, were scarcely so good as last year. Mr. M. Hooper was second, and Mr. H. C. Mayell third.

#### CUT FLOWERS.

Twenty-seven classes were provided for these, and in every instance the competition was keen. Roses, *Gladoli*, *Dahlias* single and double, and *Asters* were the most extensively shown, and all were exceptionally good. The best twenty-four triplets of Roses were staged by Messrs. Jefferies and Son, Cirencester; Messrs. Cooling & Son being a very close second, and Mr. J. Mattock, third. With twelve triplets Mr. S. P. Budd took the lead, the second prize going to Mr. F. Harris, and the third to Mr. J. Burgess. Mr. Budd was also first with twelve single blooms; Mr. T. Hobbs being a close second, Mr. W. Narroway third; and an extra prize was awarded to Mr. Mattock for a stand of the pretty Tea Rose *William Allan Richardson*. Among the Roses shown the best were *Pride of Waltham*, *Alba Rosea*, *La France*, *Alfred Colomb*, *Louis Van Houtte*, *Duke of Connaught*, *Alfred Dumesnil*, *Maréchal Niel*, *A. K. Williams*, *Paul Jamain*, *Duke of Edinburgh*, and *Marie Baumann*. *Gladioli* were well shown by Mr. S. Dobree, who had the first prize for thirty-six spikes, and this successful grower also staged a considerable number of spikes not for competition—*Octavie*, *Niobe*, Mr. A. Brongniart, *Granny*, *Rosina*, and *Sealy Bridge* were particularly good. The second prize for thirty-six spikes was well won by Mr. S. Brown; the third prize going to Mr. J. Wheeler. Messrs. H. Hooper, S. Tottle, and G. Cooling & Son were respectively first, second, and third for twelve spikes of *Gladioli*, and in every case the varieties were good and well grown. *Dahlias*, again, are always particularly well represented at Bath, and this season there was a grand lot of bloom in competition, and also not for competition. With twenty-four varieties Mr. T. Hobbs, Bristol, was a good first, Mr. W. Shaw second, and Mr. J. Nation third. Mr. G. Humphries was first with twelve varieties; Messrs. G. Horsell and S. Tottle being respectively second and third. Mr. W. Shaw was first with nine *Fancy* varieties; Mr. G. Humphries being a good second, and Mr. J. Nation third. Single *Dahlias* were, as they always ought to be, shown in bunches of not less than six blooms with buds and foliage, and in this state are decidedly attractive, whereas single blooms look very meagre. Mr. T. Carr was a good first, Mr. A. A. Walters second, and Messrs. G. Cooling and Sons third. *Asters* were very fine, and a considerable difficulty here as in the preceding classes was experienced in awarding the prizes. The best twenty-four *German* varieties were shown by Mr. A. A. Walters, Mr. G. S. Walters being second, and Mr. J. Wheeler third. Mr. A. A. Walters was also first with *French* varieties, Mr. H. Pocock second, and Mr. H. Hooper third, and an extra prize was given to Mr. G. S. Walters. *Phloxes* were well shown by Messrs. W. Tuton, J. B. Blackmore, and H. Hooper; *Verbenas* by Messrs. A. Hawkins and T. W. Davis; *Hollyhocks* by Messrs. W. Smith, J. Burgess, and W. Davis; twenty-four bunches of cut flowers by Messrs. Howe, gardener to Lewis Fry, Esq., M.P., W. J. Mould, and W. C. Drummond; table ornaments by Messrs. Cypher, E. T. Hill, and M. Hookings; and bouquet for the hand by Messrs. Cypher, Hookings, and M. J. W. Lovibond, the prizes being awarded in the order the names are given. The bouquet shown by Mr. Cypher was very much admired, as were the other exhibits in this and preceding classes. Messrs. Cooling and Son had good stands of *Roses*, *Dahlias*, and other flowers not for competition; and from Messrs. J. Laing & Co. of Forest Hill, London, the well-known *Begonia* specialists, came a beautiful assortment of tuberous-rooted *Begonia* blooms.

#### FRUIT AND VEGETABLES.

Immense quantities of both fruit and vegetables were shown, and in many cases exhibits were very good indeed. Last autumn there were no collections of fruit shown; this year there were six lots of eight dishes in competition, the winning collections being most creditable, and nearly of equal merit. Mr. A. Miller, gardener to W. H. Long, Esq., M.P., was rightly awarded the first prize, his collection consisting of good *Alnwick Seedling* and fairly good *Foster's Seedling* Grapes, a handsome *Hybrid Cashmere* Melon, fine *Brunswick Figs*, *Prince of Wales Peaches*, *Elrue Nectarines*, and *Jefferson Plums*. Mr. W. Nash, gardener to the Duke of Beaufort, was a good second, his best dishes being *Black Hamburg Grapes*, *Dell's Hybrid* Melon, *Barrington Peaches*, and *Lord Napier Nectarines*. Mr. G. Howe was placed third for a good lot of fruit, including good *Alicante Grapes*, *Elrue*

*Nectarines*, and *Williams' Bon Chrétien Pears*; whilst Mr. W. Bannister, gardener to H. St. Vincent Ames, Esq., was awarded an extra prize.

Grapes, on the whole, were not particularly good. With eight bunches in four sorts Mr. Nash was first, having fine well-finished bunches of *Black Alicante*, *Gros Colman*, *Black Hamburg*, and moderately good *Muscat of Alexandria*. Mr. W. Taylor, gardener to J. Chaffin, Esq., was a very close second, his bunches of *Meredith's Alicante*, *Alnwick Seedling*, and *Madresfield* being of medium size, but remarkably well finished, but the collection was spoilt with an inferior example of *Muscat of Alexandria*. Mr. J. Marshall, gardener to M. Whitwell, Esq., was third, his collection including good *Muscat of Alexandria* and *Black Hamburg*. Mr. Taylor was first in the class for three bunches of *Black Hamburg* with fairly good examples, the second prize going to Mr. J. Goddard, gardener to R. H. Symes, Esq., and the third to Mr. H. Smith, gardener to A. Shipley, Esq. With two bunches of *Black Hamburg* the competition was much better, Mr. F. Edwards, gardener to J. Lysaght, Esq., taking the lead with small but well-finished bunches; Mr. J. Ellicott, gardener to H. W. Tugwell, Esq., being a good second; Mr. S. Wakeham, gardener to J. W. Lovibond, Esq., third, and an extra prize was awarded to Mr. J. Loosemore, gardener to W. Cooper, Esq. Mr. G. W. Shelton, gardener to W. K. Wait, Esq., was first for three bunches of *Muscat of Alexandria*, Mr. J. Ellicott second, and Mr. J. Marshall third, all having fairly good examples. In the class for any other white Grape Mr. W. Rye, gardener to J. Derham, Esq., was first with creditable bunches of *Golden Champion*, Mr. J. Marshall being second, and Mr. W. Phipps, gardener to the Marquis of Lansdowne, third. In the class for any black Grape Mr. Nash was first with heavy well-finished bunches of *Black Alicante*, the second prize going to Mr. W. Gibson, for the same variety. Mr. A. Miller was the only exhibitor of a *Pine Apple*, and was awarded a second prize for a neat fruit of *Prince Albert*.

Melons were shown in great numbers, the greater portion being of better quality than usual. For a green-fleshed variety Mr. Miller was first, having a handsome well-ripened *Hybrid Cashmere*. Mr. W. Taylor followed with a good fruit of *Musch-Musch*, an American variety of good quality. Mr. H. Chislett, gardener to Lady Dynevor, was third, and an extra prize was given to Mr. E. Thomas. Mr. Chislett was first in the scarlet-flesh class with a seedling, Mr. W. Salter being second with *Blenheim Orange*, Mr. Nash third, and an extra prize was given to Mr. E. Thomas.

With nine *Peaches* Mr. G. H. Richards was first, having *Barrington*, small but highly coloured; second Mr. T. Smith with *Walburton Admirable*; third Mr. H. Gay, gardener to L. Daubeney, Esq., with *Royal George*. With six *Peaches* Mr. Miller was first, having small well-coloured *Prince of Wales*. Second Mr. S. Wakeham; third Mr. J. H. Lintern, gardener to W. Butler, Esq. Mr. G. Pymm, gardener to J. Gouldsmith, Esq., was first with nine *Nectarines*, staging good *Pine Apple*; second Mr. G. H. Richards; third Mr. W. Shaw. Mr. Miller was first with six *Nectarines*, Mr. Lintern second, and Mr. E. Fisher third. For dessert *Plums* Mr. Miller was first, Mr. Bannister second, and Mr. J. Weston third, all staging *Jefferson*. The prizewinners with culinary *Plums* were Messrs. J. Carpenter, E. Hall, and A. Beavis; with *Green Gages* Messrs. E. Hall, G. H. Richards, and J. Moore; with *Figs* Messrs. M. Barnfield, J. Goddard, and T. Canning; with *Cherries* Messrs. F. Cox, gardener to J. Carr, Esq., H. Jones, and G. Pymm; with three dishes of *Pears* Messrs. E. Hall (who staged good dishes of *Brown Beurée*, *Summer Rose*, and *Williams' Bon Chrétien*), W. J. Smith, and H. Scott; one dish of *Pears* Messrs. A. Beavis, E. Hall, and G. Snell; dessert *Apples* Messrs. E. Hall, T. Evry, and J. T. Holmes; culinary *Apples* A. Miller, Colonel Grant, and G. Pymm; six dishes of *Apples* H. Taylor, R. H. Symes, and H. S. Dutton, the prizes being awarded in the order the names are given, and the competition keen.

One tent was almost entirely filled with vegetables, and good quality was noticeable throughout; but our report being already lengthy notes on the vegetable classes must necessarily be brief. Several good collections were staged in the classes for twelve, nine, and six varieties respectively, all the exhibitors evidently being both able to grow and also to select what usually finds favour with the Judges. The premier collection of twelve varieties was staged by Mr. W. Tylee, these consisting of fine dishes of *Snowball Turnips*, *Moore's Cream Vegetable Marrows*, *Bath Beet*, *Telegraph Cucumbers*, *Pride of the Market Peas*, *Veitch's Autumn Giant Cauliflowers*, *Suttons' White Celery*, *Intermediate Carrots*, *Fluke Kidney Potato*, and *Trophy Tomatoes*. Mr. G. Garraway was a very close second, and Mr. F. March a good third. Other successful exhibitors of collections were Messrs. W. Smith, W. Jordan, and W. Duck; James Lye, M. Barnfield, and J. Helps, who in each instance took the prizes in the order named. There were also classes for single dishes of all kinds of vegetables in season, open to cottagers only and a highly creditable competition resulted.

#### APPLES AND THEIR VARIETIES.

DURING eighteen years' experience here I have carefully observed the best varieties of Apples, and have taken special notice of the varieties which suit our own locality in Northamptonshire. I find the following very serviceable, and may remark that if circumstances so happened that I was obliged to grow one variety only, that would be *Barnack Beauty*. The seedling or mother tree has for seventeen years past borne a full crop every year, and the young trees planted here five years ago have borne three good crops of Apples. *Barnack Beauty* is of medium size and beautiful colour, and keeps until Apples come again. Its proper place is at the dessert table, but it is also good for cooking purposes. My next favourite is *Dutch Mignonne*. It is here especially valued by the cook for making that delicate appendage to the dinner table, an *Apple charlotte*. These two varieties bear fruit yearly.

Now follows my own selection. For early kitchen Apples *Lord Suffield* heads the list. This and *New Hawthornden* is doubtless the best, while *Waltham Seedling*, sometimes called *King Noble*, is a most useful mid-season kitchen Apple. Add to these for late varieties *Wellington*, *Round Winter Nonesuch*, and *Annie Elizabeth*. The dessert kinds run thus—*Red Quarrenden*, *Cox's Pomona*, *Ribston Pippin*, *King of the Pippins*, *Golden Harvey* or *Brandy Apple*, *Court Pendu Plat*, *Wyken Pippin*,



and Worcester Pippin. In an orchard planted here three years ago of some 300 trees, the following are bearing good crops this year: Lord Granville, Worcester Pearmain, King of Pippins, Barnack Beauty, Lord Suffield, King Noble, and Dutch Mignonne. Of the above varieties I have planted one dozen each, and so far am well satisfied with the results.

Being an Apple lover, I attended last year's Apple congress and selected three for trial—Laxton's British Queen, Queen Caroline, and Grenadier. The two latter I had from Mr. Bunyard in fine young pyramids, and that gave me half a dozen Apples this year, which I look upon as a good omen of their free-bearing properties.

Relative to Apple trees pruned and unpruned, looking through a noble duke's place in the sunny south recently, I noticed all the Apple trees round the borders of the kitchen garden looking trim and tidy, but appleless, while an orchard close by, belonging to the place, but unpruned, having a capital crop. There is no doubt "Thinker" hits the nail on the head when he says, "Prune when young judiciously, but when old let them alone."—R. GILBERT, *Burghley*.

### CACTUS DAHLIA CONSTANCE,

APROPOS of the reputed white Cactus Dahlia of which Mr. Welch inquires in the last issue of the Journal, I can assure him that it is a right good thing, and I hope if he has not seen good flowers of it he may yet live to behold them. It is difficult to be had in good form (indeed next to impossible) under ordinary treatment—namely, by striking cuttings in early spring and planting them out in due course, but cuttings which were rooted early in the present year in 2½-inch pots should, when bedding operations were completed, be shifted into 48's and plunged in coal ashes for the remainder of the season. By the end of the year good tubers will be formed, and if duly attended to when planting time comes round they will invariably produce excellent flowers. The same remarks hold good of D. Juarez.—E. J. C.

A CORRESPONDENT writes:—"During the early part of the first season I grew this good old variety, I, like Mr. Welch (page 214), was disappointed with it. It produced but few blooms during August, and these were not so white as anticipated and wished for. Later on, when the days and nights were colder, it flowered freely, and the colour was much nearer pure white than formerly. The blooms are double without being heavy, and they are in great request for church decoration. It is also much used in funeral wreaths and crosses, and very beautiful it proves when tastefully arranged with other white flowers and Fern fronds. The prettiest cross I have seen for some time was composed exclusively of Constance Dahlia blooms, white Japanese Anemones, and fronds of Maidenhair Fern.—W. I. M.

### OPEN AIR FLOWERS IN AUTUMN.

IN summer, when everything is growing luxuriantly and flowering profusely, it is unnecessary to attempt to prolong their beauty, but now much may be done to help the autumn flowers. "The beds have been fine, but they are over now," is an expression often heard about this time of the year; and although it may be correct to say they are over compared with what they may have been, it is yet far too early to allow them to be quite over. Whether, however, they may be bright again for long or dull and unattractive to the end rests, in a great measure, with those in charge.

The more freely anything blooms in summer the more liable it is to collapse early in autumn, and if all the old flowers are allowed to remain on they will soon prevent others from forming. Indeed, there is no better way of making a plant cease flowering than to allow seed pods to form, and in many cases there is too little attention given to taking off the old blooms in time to prevent any check to successional flowers. At this season every bloom past its best should be picked off all plants required to bloom as far into the autumn as possible. This applies to Pelargoniums and everything in the flower garden, as well as to Dahlias, Sweet Peas, Stocks, Asters, Carnations, and, in short, everything disposed to wither yet desired to flower. With us open air flowers are of no consequence just now, but in October and November we cannot have too many of them, and year after year we prove that nothing causes the plants to be attractive longer than a constant system of timely gathering of the decaying flowers. Dead leaves, too, should have no quarter, as they retain damp and cause decay, and these we are particular in removing when going the weekly rounds of our flower beds and borders at the present time.—J. M.

### CULTURE OF LACHENALIAS.

THESE rank among the most useful of dwarf flowering bulbous-rooted plants, and being so well adapted for front rows in conservatory arrangements during the spring months, the wonder is they are not more extensively grown by those who have large demands for decorative plants; their culture being so simple, too, should be a greater inducement to extend their numbers. To have them in the best possible condition doubtless the planting-out system as practised by Mr. Ware and others is the best, but in this way they would not prove so useful to many as in pots. Treated liberally very creditable examples can be grown in pots. Light is a very important factor in the well-doing of these plants, therefore from the first they should be kept as near the glass as possible

and given plenty of air, as when drawn they do not prove so beautiful either in leaf or flower spike, neither do they last long in perfection.

The time for potting varies according to the treatment they have received. When they show signs of growing is the time we pot our bulbs, and that is generally about the first week in September. Anyone not having seen to them should do so at once, as it not unfrequently happens they are left under stages in the greenhouse too long, thereby becoming unduly drawn. The soil we find best suited to these little bulbs is three parts good turfy loam to one of well-rotted cow manure, with a liberal addition of sand or road grit, a layer of manure also being spread over the crocks. Pots ranging in sizes from 4-inch to 6-inch are best suited to their culture, and the former is preferred with us. From five to eight bulbs are sufficient for each, and they should be quite covered with soil. Cold pits or frames are the best places to grow these in from now until there is danger of sharp frost, when they are better removed to a greenhouse shelf. Watering should be carefully attended to, never allowing them to become dry or very wet.

There are several varieties in cultivation, those extensively grown being, however, limited in number. *L. pendula* and *tricolor* are good with red and yellow flowers; *luteola* is a good yellow variety; *quadricolor* is extremely pretty; and *Nelsoni* is another handsome kind, but is difficult to obtain true, being so rare. After flowering they may be gradually dried off and the pots laid on their sides under a wall outdoors, or under the greenhouse stage, until the growing season again comes round.—SOMERSETSHIRE FOREMAN.

THE different varieties of *Lachenalias* are very beautiful for the conservatory. The bulbs should be potted early in the autumn, as they commence to make growth early. Although not hardy, it is a great mistake to grow them where they are likely to receive much artificial warmth, as they utterly dislike being coddled. Place the bulbs about 2 inches apart in well-drained pots, the soil to consist of good fibry yellow loam. After they are potted place them in a cold frame until they commence to grow, when they should be arranged near the glass in a cool greenhouse. When in full growth they must receive copious supplies of water.—A. L.

### LIME AND CHALK.

WILL your versatile correspondent, "A Thinker," be good enough to state how he manages to make chalk out of lime, and if he can do this why he would be at the trouble of making it instead of using the lime for Peach tree borders? What I desire to know—and I think there may be others to whom the information may be useful—is the essential difference between lime and chalk, and also the different effects (if any) they have on the soil and on vegetation. I have seen lime recommended—indeed, have seen it used successfully on Vine and fruit-tree borders; but now we are distinctly informed that chalk is better. I have been told that lime cannot be converted into chalk, but that chalk can be made into lime, and is so made for applying to land. But why be at the expense of thus converting it if it is better in its normal state, as your correspondent suggests? Any information on the subject will be valued by—A LEARNER.

### A DAY AT BEXLEY HEATH AND SWANLEY.

"WOULD you like to have a run over to Bexley Heath and see Philip Ladds' wonderful crops of Grapes and Tomatoes? I promise you one of the finest sights you have ever beheld in the way of Grape and Tomato-growing." This was the purport of a note which I received from a gardening friend a few days ago. Having heard so much of this vast establishment I naturally felt anxious to accept my friend's invitation; but owing to indisposition, the effects of the fierce heat of late, I knew it would be unwise to venture thither just then. A change to cooler weather having come, my friend put in his appearance with his horse and trap, and I gladly accepted his invitation to take a ride of some few miles across country to Bexley Heath.

It is a very pleasant drive from the south-eastern suburbs of the metropolis, especially during the fruit season. This part of Kent abounds in fruit and vegetable gardens. Hundreds of acres of Strawberries are grown for supplying markets with fruit and the jam manufacturers for preserving. Tons of fruit are gathered and sent up from one farm alone daily. The varieties grown chiefly for this purpose are Sir Joseph Paxton and President. A plantation is not considered profitable after three years, as a rule, hence new plantations are constantly being formed to succeed the former. Raspberries, too, are grown to an enormous extent, some of the plantations being upwards of fifty acres. Carter's Prolific is the principal variety grown, and it is a grand sight to see the immense stools with their short sturdy canes. The duration of a plantation varies from ten to fifteen years, according to soil, &c. No stakes are needed to support these sturdy canes; indeed it would involve a heavy expenditure to supply the thousands of stools were such required.

Red and Black Currants and Gooseberries also occupy a large share of the fruit-grower's attention. These are generally grown in the large plantations of Apples, Pears, and Plums, thus occupying the space between the larger trees. Here and there, however, one may see them growing by themselves. The fruit farmer adopts a rather novel but simple plan in "rooting-out" bush fruit trees in an exhausted plantation. When he wishes to clear the land of these trees for another crop of a different nature he employs two men and a horse. Attached to the traces is a strong chain, which one of the men holds in his hand to bind round the stem of the tree. When the chain is bound round, the other man causes



the horse to give a sharp pull, and out comes the tree with its mass of roots. This is effected in a few moments, and is a speedy way of clearing exhausted plantations.

The Potato crop appeared in excellent condition; not a trace could be seen of its parasitic foe having commenced its destructiveness. Scarlet Runner Beans, notwithstanding the severe drought, seemed to be thriving well. These are generally grown in a dwarf state by continuous pinching, but this season growers have found the crops more profitable by using supports in the shape of pea-sticks. It was an interesting sight to see a large field of these grown thus laden with blossom and beans. Leaving this interesting portion of our ride behind we soon came to a still more interesting spot—the object of our pilgrimage.

#### MR. LADDS' ESTABLISHMENT.

Mr. Ladds' Grape and Tomato-growing has, long ago, been looked upon as one of the wonders of gardening, and it only needs a personal inspection to satisfy oneself as to its accuracy. No one but a man of Mr. Ladds' stamp, combining energy and great business enterprise, could have attained such success in producing such immense crops of Grapes and Tomatoes. The glass erections are very extensive. There are truly acres of them. Some of the houses are upwards of 400 feet long, and all built from Mr. Ladds' own designs, being constructed in an economical and serviceable manner. There is no attempt at ornament, and the best possible use is made of all available space. Everything is done in a rough-and-ready style, even in the arrangement of the heating apparatus. The orthodox gardener who has been accustomed to mathematical precision in the arrangement of his houses, plants, &c., would be perfectly shocked to behold the style of doing things here. For instance, the hot-water pipes diverge and converge in every direction, being roughly laid down, independent of levels and straight lines. Old flanges of hot-water pipes are used for attaching to the end of the ropes for keeping the ventilators in position. One of the ends of these flanges is filled with Portland cement, with a hole in the centre to admit of the rope for the purpose just mentioned.

The houses are all span-roofed. The large vinery measuring upwards of 500 feet in length and 24 feet wide is a splendid sight. The varieties grown in this house are Gros Colman and Lady Downe's, and in size of bunch and berry are not to be surpassed. Some idea of the quantity grown in this house may be gained when I state that I was informed that upwards of 2½ tons are gathered annually. It is truly a magnificent sight to stand at the bottom end of this house and behold the almost countless numbers of black Grapes suspended from the roof. There is no scientific border-making employed here. When a new house is built an immense quantity of stable manure—some tons—is trenched into the ordinary soil, a gravelly loam, and in this the Vines are planted. When they come into full bearing they are liberally assisted with artificial stimulants. There is no undue crowding of foliage, and abundance of air is given. The fine plump brown shoots testify strongly to Mr. Ladds' success in the thorough ripening of the wood—a great point in good Grape culture.

In addition to this large house there is a house of Muscats 130 feet by 25, in which there is an immense crop of really splendid fruit, the bunches and berries being of enormous size. To produce this heavy crop recourse is had to a liberal application of such artificial manures as sulphate of ammonia, nitrate of soda, and guano. There are five more large vineries, two of them being 160 feet by 25, and the other three 300 feet by 25. The two first named are planted with two-year-old Gros Colmans. These had been cut back to half their length last season, which portion of the canes are now carrying about a dozen very large bunches each. Next year these will carry a full crop. The other three houses are planted with Black Alicantes of the same age as the Gros Colmans just referred to, and are bearing similar crops. The canes are wonderfully robust, and evinced strong evidence of good feeding in their growing and fruiting stages. The roots of the Vines are entirely inside, and, what is of great importance, have an immense mass of feeding roots near the surface. Water is laid on all the houses, therefore by means of a good hose a needful quantity can be given without much trouble.

It is really marvellous to what extent Vines can be cropped by the aid of various artificial stimulants, but it is a question whether they can attain more than a moderate age and yield profitable crops, which time and more experience alone can answer. In Mr. Ladds' case the prospect is considerably different from that of the private gardener. In the former case, if after a few years the crops cease being profitable, they can be rooted out and the house occupied with a more remunerative crop. It is very different in the case of the private gardener. He has to maintain a constant supply of fruit of average quality, and cannot afford to lose a season or two whilst new Vines are being prepared for fruiting every few years. This high-pressure Grape-growing, then, is suitable for market purposes, but not for the average private garden.

Tomatoes are grown here on a much larger scale than Grapes. An immense number of span-roofed houses, each measuring over 200 feet in length, are devoted to the production of Tomatoes, of which over a ton a day is gathered for market during the season. The Tomatoes are planted about 2 feet apart in the borders on each side of a narrow path which runs through the centre of each house. The plants are trained to a single stem, and are supported by means of stout strings suspended from the roof. A great quantity of manure is dug into the borders, and with the assistance of abundance of water and stimulants a marvellous crop of fruit in all stages of development is to be seen. No sooner is the Tomato crop over than the houses are refilled with tens of thousands of Strawberries in pots for forcing.

Mr. Ladds does not confine his attention to fruit-growing alone, but goes in largely for cut flower production—chiefly Gardenias, Stephanotis, and Tea Roses. One large span-roofed house, over 300 feet long, is a perfect forest of Stephanotis and Gardenias. The former are planted in little mounds of earth on each side of the house, and the foliage trained up two-thirds of each side of the roof. The Gardenias occupy the central bed, and are planted out in mounds too, the latter being one mass of roots. No plants could possibly appear in better health than these, and the quantity of cut blooms obtained daily is astounding. Abundance of water and stimulants are given daily to these plants.

Two more similarly large houses are filled with that grand Tea Rose Niphetos, grown in pots. Tens of thousands of fine healthy specimens bristling with buds of this charming Rose, as grown at Bexley, is a sight well worthy of a special journey alone. It is indeed wonderful to see such excellent results produced in a rough-and-ready style. With the exception of Mr. Ladds and his skilful manager, Mr. Bailey, we are informed that no skilled gardeners are employed, ordinary labourers doing all that is required.

Mr. Ladds' enterprise does not end at Bexley Heath. He has another large establishment at Dartford Heath, which, with Messrs. Cannell's, I will refer to in a future issue.—T. W. S.



FRUIT GROWERS and those interested in pomological studies will be glad to know that the fifth edition of Dr. Hogg's "Fruit Manual" is nearly ready, and will be published early in October, probably on the 1st. Further particulars will appear in future advertisements.

— DUNDEE INTERNATIONAL SHOW.—This Exhibition, which is opened in the Drill Hall, Dundee, to-day, Thursday, is in numbers and quality of the productions an extremely satisfactory one. There are no less than 350 competitors, the entries in the respective divisions being as follows:—Plants, 330; cut flowers, 835; and vegetables, 765; fruit being grandly shown, no less than 530 dishes and collections being entered. These exhibits occupy two large halls, one 161 feet long and 80 feet wide, the other 100 feet long and 80 feet wide. The cut flowers are arranged in a covered space in front of the Hall 300 feet long and 85 feet wide, a slightly smaller space at the rear of the Hall being devoted to vegetables in the principal fruit classes. The leading exhibitors are Messrs. McIndoe, Hutton; Murray, Culzean; Goodacre, Elvaston; and Johnston, Glamis. In the plant classes Messrs. Ireland & Thomson, Edinburgh; Clark, Bros., Carlisle; Laird & Sinclair, Dundee; Stewart & Son, Dundee, and D. W. Croll, Dundee. The principal gardeners exhibiting plants are Messrs. Hammond, Brayton; Alison, Monifieth; Brown, Orchill; MacArthur, Newport. The great features of the Show are the cut flowers and fruits, the latter being extremely fine.

— THE OFFICIAL REPORT OF THE COMMITTEE OF THE NATIONAL APPLE CONGRESS.—The Royal Horticultural Society will issue in, or about October next, a full report of the above, compiled by Mr. A. F. Barron, Superintendent of the Royal Horticultural Society's Gardens, and Secretary of the Committee. It will be in book form, octavo size, and contain about 200 pages, embracing:—1, A general report on the whole of the exhibits—arranged in ten separate groups or divisions, according to district—including the observations of the Committee, with cultural and other details by the several exhibitors, &c. 2, Tabulated lists of selected varieties of Apples for each separate district, &c. 3, A Descriptive Catalogue, with classification of the whole of the varieties exhibited, numbering over 2000.

— WE are requested to state that Mr. R. S. DUNBAR has ceased to be a member of THE THAMES BANK IRON COMPANY, with which and its predecessor he has been connected for the past twenty-four years.

— APPLES ON LAST YEAR'S SHOOT.—I have this day counted eight large Apples on a last year's shoot of Keswick Codlin, and it is the rule over several trees, so this excellent old culinary variety appears to be an exception to the rule, as stated by "Non-Believer."—W.

— FINE HYDRANGEAS.—A correspondent informs us that the



Hydrangeas are very fine at Margam Park, South Wales, this season. The largest of the bushes are bearing as many as 700 massive heads of bloom. In the lower part of the grounds they are a beautiful pink colour, while further up they are a bright blue. Nothing could be more showy. They are equally as attractive as Rhododendrons in spring, and in situations where Hydrangeas succeed they might be introduced extensively with splendid effect in the autumn.

— **LILIUM AURATUM.**—"H. S." writes:—"At The Cottage, Sandgate, the residence of J. J. Lonsdale, Esq., we recently saw an example of *Lilium auratum* worth recording. This grand specimen, growing in a pot 2 feet in diameter, had twenty-five stems, many measuring 8 feet from the pot's edge, and carrying 210 fine expanded flowers. It has a local reputation. Mr. Lilly (happy name), the gardener, informed us that seventeen years ago a single bulb was potted, and each year or two since has been shifted into a pot a trifle larger, but the soil has never been shaken out nor the bulbs disturbed—a hint to be followed by all who would be successful with the golden-rayed Lily of Japan."

— **MR. B. COWAN** sends us the following NOTES FROM THE NORTH:—"At Rokeby Park, the seat of R. A. Morritt, Esq., where Mr. William Bowzer is gardener, one of the stoves is just now very effective. The pillars that support the structure are beautiful with the following climbers and foliage plants, which form very pleasing and agreeable contrasts. *Bougainvillea glabra* (profusely flowered) *Allamanda Wardleana*, *Nephrolepis tuberosa*, *Cissus discolor*, *Adiantum farleyense*, and *Acalypha Mackeana*. In the same place we noticed a fine lot of *Poinsettias* grown in a cool frame, and Mr. Bowzer informs us it is no uncommon occurrence to have the bracts 18 to 21 inches across.

— **CHESTERS.**—At this fine old place archaeologists have recently discovered another 'new' village. The crevices of the walls are studded with *Erinus alpinus* and the lovely *Corydalis lutea*. No one can give any clue as to how these lovely plants so predominate amongst these old ruins. The venerable owner, H. Claxton, Esq., many years Town Clerk of Newcastle, is now in his ninetieth year, and has been a thorough devotee to archaeology. In one of the greenhouses, 21 feet by 15, is a fine *Fuchsia Riccartoni*, which fills the house; the stem is 14 inches in circumference. The gardens are under the charge of Mr. Charlton.

— **ARMSTRONG PARK, NEWCASTLE.**—The tree planted in this park by the Princess of Wales, which has been recently presented to Newcastle by the generous and philanthropic owner, Sir W. Armstrong, was likely to be destroyed by the curious taking leaves and twigs off as mementoes; it is now protected. It is an Italian Oak, supplied by Messrs. Fell & Co., Hexham."

— **PRESENTATION.**—After the luncheon held in connection with the Bath Floral Fête, reported on another page, a presentation was made to MR. HOOPER TAYLOR. This gentleman has long been one of the most active workers on the Bath Floral Fêtes Committee, and in the course of his duties has gained the respect of all with whom he has come into contact. At the Rose Show it was decided among a few of the visitors, including several exhibitors and judges, that some kind of recognition of his courtesy and kindness was desirable, and as a consequence a subscription list was opened, with the result that sufficient funds were forthcoming to enable the promoters to present a handsome silver goblet to Mr. Taylor, and that, too, without the assistance or cognisance of any members of the Bath Committee. The presentation was made by Mr. Webley, Hon. Sec. Bristol Horticultural Society, who did full justice to the merits of Mr. Taylor, to whom the compliment was apparently a great surprise, and he expressed the great pleasure he felt at the honour done him. Such marks of respect are worthy of record, and may serve to encourage many zealous workers on various horticultural committees.

— **GLADIOLUS BRENCHELEYENSIS.**—"A. M. B." writes:—"The brilliant spikes are with me just over. In a small bed by themselves the corms remained undisturbed all the winter in the ground, and the flower spikes were very fine."

— **FINE VARIETIES OF GLADIOLI.**—The splendid collection of Gladioli staged last week at the Crystal Palace by Mr. Campbell, and referred to in our report of the Show, contained, amongst others, the following superior varieties:—*Amalthee*, pure white, tinted violet, large violet-red blotch; *Ambroise Verschaffelt*, white ground, carmine flamed, large rose blotch; *Anna*, cherry, tinted bright orange, carmine stripe

on white ground; *Archduchess Maria-Christina*, white, tinted lilac, flamed rosy carmine; *Belladonna*, white, shaded clear lilac, lower petals striped bright carmine; *Bicolore*, large flowers of bright rosy salmon colour, lower petals ivory white, suffused with rose at the edges; *Camille*, light lilac, flamed and feathered dark lilac; *Canova*, white, mottled rosy-lilac; *Carnation*, fleshy white, tinted carmine at edges; *Celiméne*, orange red, flamed vermilion red; *Colbert*, cherry red, tinted orange, white lines; *De Mirbel*, fine rose, tinted lilac-violet, striped and flamed carmine; *Dumont d'Urville*, very long spike, bright cherry, flaked and striped rich carmine, distinct pure white blotch; *Giganteus*, very tall spike, flowers of a fine rose colour, shading off to cherry, upper petals transparent rose, blotch dark carmine, veined white all over; *Hermione*, white ground, striped lilac and carmine, white blotch streaked violet; *Horace Vernet*, brilliant purple-red, white centre feathered red; *Jupiter*, light red, largely flamed dark crimson; *Lady Bridport*, flesh colour, tinted pink, flamed and mottled carmine; *L'Unique Violet*, dark lilac, tinted violet, flamed dark carmine; *Ondine*, pure white, tinted lilac, deep violet blotches; *Opale*, fine spike of large flowers of extremely delicate rose, a charming variety of the freshest colour; *Papillon*, compact well-formed spike of flowers with a yellow ground, flaked and bordered carmine; *Penelope*, blnsh white, lower petals tinted yellow; *Seduction*, salmon, white blotches, carmine stripes; *Sir Wm. Hooker*, cherry, carmine spots, white ground; *Sylphide*, white, flamed carmine, purple-carmine blotch; *Sylvia*, white, edged delicate cherry-rose, ivory throat; *Tour-du-Mond*, dark cherry-red, white blotch, edged lilac; *Velleda*, rose, violet blotch.

— **"A GLEANER"** sends us the following series of acceptable notes:—**POMPON DAHLIAS.**—Some growers are already alive to the fact that one-year-old pot plants of these produce a great quantity of flowers more uniform in size than those from spring-struck cuttings. This is an advantage, for it requires no cunning observer to discover the danger of this section so increasing in size as to presently render it difficult to distinguish these from small-flowered Show varieties, and when this is so where shall we draw the line? Their intrinsic beauty and value as cut flowers must stand in their small well-formed flowers.

— **DOUBLE TUBEROUS BEGONIAS** with a circumference of 9 inches are something to remember, especially when the well-formed flowers of the Turban *Ranunculus* cannot vie with them; and may it not safely be presumed that this is a very near approach to the ideal of perfection, at least so far as doubling and size are concerned?

— **CLEMATIS FLAMMULA.**—This fine old climber can be placed in a variety of positions much better than "on wire arches over a path" (see page 192), for you want of necessity to be above it when thus placed to admire it. Just try it against a dead Larch or a *Wellingtonia* rendered unsightly by previous winters, allowing it to ramble and festoon amidst the branches, and see its effect—nay more, see it at home, for it is at home thus, and instead of removing such trees as these they might be made features in the garden or woodland.

— **FERNS FOR BASKETS.**—Among new departures in this direction may be mentioned *Adiantum farleyense*, which is being adopted by Mr. Lynch in the Botanic Gardens at Cambridge. It is doing well, too, and saying this the reader can easily imagine the rest, for the prince of *Adiantums* is well known. This circumstance also reminds of a *Davallia Mooreana* grown as a basket plant in the late Mr. Joad's garden at Wimbledon, and which was some 6 feet through. Very effective it was, as may be imagined. This, like the preceding, is so well known for its general decorative qualities as to need no special description here.

— **CETERACH AUREUM.**—Touching on Ferns reminds one of the days when very small plants had to realise from a guinea to 30s. or remain unsold, and at the former price I was the happy possessor of two plants, which were prized considerably. For a time these grew very satisfactorily, but as winter came and went they presented anything but a pleasing appearance, although they had been given all that had been prescribed for their requirements. Eventually one of them was repotted and placed in a cold frame with *Dionæas*, *Cephalotus follicularis*, and similar plants. The result was that in this humid frame it promised a speedy recovery, notwithstanding that it appeared altogether the wrong spot for the scaly Ferns. The circumstance was almost forgotten until a short time ago it was met with in a Cheshire garden growing in a close case with *Todeas* and *Trichomanes*, receiving similar treatment and in luxuriance, the fronds large and well developed. Those who



have not grown this plant well may improve it by adopting similar treatment.

— A GOLDEN WEDDING. — With the celebration of a golden wedding we are convinced that maturity has been reached by those whose wedded lives have reached half a century. The present case is that of MR. AND MRS. W. HEATH of the College Nurseries, Cheltenham, a well-known and much-respected nurseryman. In honour of the occasion Mr. Treseder (Manager) gave a dinner, of which some fifty workmen and a few friends partook. Justice having been done to the repast, and the usual loyal toasts given, Mr. J. Frost proposed the toast of the evening, "The health of Mr. and Mrs. Heath," which was enthusiastically received, after which Mr. Frost presented them with a handsome silver salver, bearing the following inscription:—"Presented by the employés of Messrs. Heath & Son to Mr. and Mrs. W. Heath on the occasion of their golden wedding day, September 1st, 1884." Mr. Heath briefly responded. In congratulating Mr. and Mrs. Heath on the joyous event we hope they may long live and prosper. Mr. Heath in his early days grew and exhibited hardwooded plants successfully, and his name is at present associated among growers of the choicest plants and flowers.

— CAUTION! — Our passing summer has been a tropical one. Methinks I hear the murmuring of many voices to the effect that that is no news. Perhaps not, but what follows may be. With the tropical heat many hardy plants have had a good "baking," many considerably injured, too. But to the point. My words of warning are to the uninitiated, and are these: Take care that a variety of plants, such as *Pinguicula*, *Saxifraga Mawiana*, *S. gibraltarica*, *S. granulata* and varieties, *Sedum retortidum*, and such plants are not lost sight of. Only the other day I was just in time to save a fine pot of *Saxifraga granulata plena* from being cast away as dead by an amateur simply because he was unaware of the nature of the plant, nor had he (though a learned man) taken the trouble to inquire into the meaning of its specific name, which alone would have convinced him that some little granules or small bulbs were hidden beneath the soil. So it is with many plants. Most of those cited above, however, lie loosely on the surface, hence the danger. They are frequently lost and declared dead, owing to their belonging to a group of plants which, as a rule, do not die down, and thus their characteristic rest is mistaken for the last dissolution. With the autumnal rains, however, most of them commence active growth.

— It would form a curious and interesting statistic to learn how many hardy herbaceous perennials or like plants there are which have apparently been really benefited by the scorching summer. I know of two. These are *Zauschneria californica* and *Tritomas* generally. Both the former and the members of the latter genus are above the average from a decorative standpoint; *Anemone japonica* and varieties are as usual; the decussata section of *Phloxes* very much below the average; *Dodecatheons* I never saw in a worse condition, though I do not consider them permanently injured.

— LONGEVITY OF FERN SPORES. — Spending an hour or two at Bath recently I was much interested by a short visit to the old Roman Baths there, and which have excited considerable enthusiasm among antiquaries. On a wall, said to have stood there more than 1750 years, is an inscription to the effect that they were founded 860 years before the birth of Christ. But I did not wish to speak of its antiquity; I was more particularly interested in one or two seedling Ferns among the ruins, which, according to Professor Oliver, F.R.S., is the barren form of the common Brake, *Pteris aquilina*, which, he says, is rarely met in this state. It is not an unusual occurrence for seeds to retain vitality for thousands of years under certain conditions; still there is a certain amount of interest attaching to this, and where we have evidences of the longevity even in the case of a minute particle such as a Fern spore.

— THE FRUIT TRADE IN NEW ORLEANS AND HONDURAS. — An American paper says that eight years ago a steamer was rarely seen in a port of Spanish Honduras, and all the trading was carried on in schooners. Now there are six steamers plying regularly between New Orleans alone and the Honduras ports, all engaged in the fruit trade, and there is not a day but a steamer is seen landing at short intervals along the coast and at the Bay islands, taking on the cargoes of Bananas, Cocoa Nuts, Pine Apples, Limes, Lemons, and Oranges. A steamer will bring to New Orleans 15,000 to 20,000 bunches of Bananas, and an equal number of Cocoa Nuts. The effect of this trade has been to stimulate the cultivation of fruit in that lazy country and increase the price.

Cocoa Nuts now bring 20 to 30 dollars (about £4 to £6) per thousand on the coast, and at these prices the cultivation is very profitable. Land is cheap; it may be had for nothing in some places, and for a trifle in the best regions. It requires seven years for a Cocoa Nut tree to bear, but from that time on it yields a never-failing crop of 120 to 150 nuts a year. The Banana bears a crop of bunches nine months from the time the sprout is planted, and as the soil is very rich the yield is large—larger than that of any other article of food grown in the same area.

### LILIUM HARRISII.

How quiet this has become! Twelve short months ago its praises were sounded far and wide as something which must at once and for ever shut out all its relations. But why? Are we not sufficiently old to trust to older and well-tried members before admitting any newcomers? It was reputedly a distinct species, the principal groundwork for this assumption being that it was a profuse bloomer, or an approach to it at least. But I never regarded it as a novelty; indeed, the first plant I saw of it was so peculiarly like *L. longiflorum eximium* that I took it for that variety. However, I got a few bulbs, which certainly were distinct from *longiflorum* type, and in this appears to me the most distinct character of the plant, the bulbs being somewhat conical and not roundish, with somewhat flattened tops as in *longiflorum*, and the growth like a slender *Krameria*. But while we have such excellent kinds as *longiflorum*, with the varieties *eximium*, *Wilsoni*, *Takesima*, and others, we need not crave for the Bermuda Lily. I like novelties when good and distinct, but who cares to pay a long price for the mere creation of a name? I wonder who! — AN OLD HAND.

### BUTTONHOLE BOUQUETS.

I HAVE waited a week to see if anyone should give to "A Young Scotch Gardener" the information he requires respecting the making of buttonhole bouquets for exhibition, and after the very able and instructive article that appeared in last week's issue I should not have attempted to write these remarks had not the Editor still desired the opinions of correspondents.

The subject is one in which I have always taken a particular interest, and when visiting many of the best exhibitions, where bouquets of all styles are a strong feature, and the awards made by some of our most competent judges, I have been able to pick up many valuable hints, which I have found useful in my own practice. As a rule, the competition is very close, so that it is always best to set up several bouquets for the judges to select from.

In making them up the principal points to be aimed at are simplicity and lightness in arrangement, a judicious blending or accurate contrasting of colours, together with a neatness and finish about the whole. I have always found it best to confine myself to one kind of Fern for each buttonhole, and I think there is nothing better for the purpose than either *Adiantum gracillimum* or *A. cuneatum*.

The stem of each spray should have some very fine wire twisted around it, so that it can be placed exactly where required. Small Ivy leaves are sometimes placed underneath to keep the Fern in position, but if it is wired in the way described they are not required.

In arranging colours there are two distinct styles to be borne in mind. One is to blend together in pleasing harmony several shades of one colour, or several colours resembling each other; such, for instance, as the delicate and lovely shades of pink and rose, or the more decided tints of scarlet and crimson, with a liberal admixture of white and green. And it is generally considered that when the colour of the flower is rich and full the accompanying green should also be of a deep hue. The other style of arrangement is to contrast two colours—scarlet or purple, or crimson and blue, set in a white ground always look well; or any one colour might be used with the white and green.

But it matters not how well chosen the colours may be if the flowers are not arranged in a light and graceful manner, and I have found the following flowers very useful when well arranged to give the essential element of lightness and grace:—*Spiraea japonica*, *Rhynchospermum jasmoides*, *Lily of the Valley*, *Forget-me-not*, different varieties of *Jasminum*, with *Plumbago capensis* and *P. rosea*.

In conclusion, I may state I should not have penned these lines had it not been for the timely encouragement and useful hints given to young aspirants by "An Old Scribe," so I hope that even a relentless editor will not be too hard on the first contribution of — A YOUNG SCRIBE.

[While editors are compelled to be relentless they are also appreciative, and more similarly well-written letters from "A Young Scribe" will find ready admittance in these columns.]

CORNS. — I am not desirous of turning your Journal into a medical journal, as that would spoil a very good work, but I cannot allow the articles on corns in last week's number to pass without recommending a remedy that has proved a greater comfort to me than plaisters, caustics, and a host of other things. It is "Celandine." I have had corns for nearly half a century, and for the last few months have walked with more comfort than I can remember. A bottle costs 1s., and is well worth it. There are directions with each bottle, and I will not take up your space by giving any, but I may say it must be kept well corked and not standing upright, and in a cool place. I shall be happy to give any



advice your correspondent may require. A corn should never be cut.—  
A SURGEON.

### WICKHAM COURT.

"If you want to see some of the finest Yew hedges in the country go to Wickham Court," was the remark of a gardener who knows what is good and of interest to horticulturists. As I have seen some good Yew hedges in my time—namely, at the Earl of Chesterfield's, Holme Lacy, Hereford, and Sir H. A. H. Cholmeley's, Bart., Easton Hall, Grantham—I felt a desire to see if those above referred to were of similarly commanding appearance. Therefore, after a pleasant drive across the furzy common of Tooting, through the quaint old village of Mitcham—which is an aggregation of wooden houses mainly, and the headquarters of the herb-growing industry in this country—through the busy town of Croydon, I found myself in the hilly and valcy and woody county of Kent, and anon in the pretty village of Wickham, where half the houses are embowered in trees, and those trees still almost as freshly green as in spring. What a change from the dried and dusty environs of South London, where Lime and Horse Chestnut trees have been leafless for some time, owing to the excessive heat and dry gravel subsoil, while Elms and Beeches are casting their rusty shrivelled foliage rapidly.

But to Wickham. Wickham Court is the ancient seat of Sir John F. Lennard, Bart. It is an imposing castellated building, picturesquely mantled with Ivy—with the equally picturesque church on a mound contiguous—overlooking a far-reaching pastoral valley, bounded by heavily wooded hills. The situation is, therefore, commanding, but there is nothing rugged about the surrounding scenery. The country is boldly diversified and beautiful, but it is of a quiet beauty, the configuration of the ground being represented by smooth curves, not broken, angular, and abrupt, like some parts of Derbyshire, Yorkshire, and romantic Scotland.

The soil around Wickham is evidently good, deep, and moist, or the pastures could not be so green as they are nor the trees so fresh, the Oaks especially on the estate being remarkable by their luxuriance and their deep, thick, leathery foliage. Wickham Court, though standing when Henry VIII. was king, and was, so it is said, occupied from time to time by that monarch, is yet in excellent habitable condition, and looks as if it would endure the wear and tear of a few more centuries. It is a fine old English seat, not of startling size, but has a comfortable home-like appearance that is not seen in the new spick and span residences on which the architect has exercised his ingenuity, "regardless of expense." At Wickham the mansion and all the appurtenances are practically in the same pile, the capital gardener's residence being almost a part of it, and the gardens and the stables closely adjoining.

The pleasure grounds, mostly on the east side of the Court, are tolerably extensive and decidedly enjoyable. The lawn is sufficiently occupied with shrubs and Conifers without being overcrowded, and in the distance the trees increase, merging almost into a wood; but not wild and neglected, for every tree appears to be cared for, the evergreens kept in order, and the embowered walks are neat and clean. Very conspicuous on the lawn, and withal attractive, are some good examples of the deciduous Cypress—cones of palest green showing to advantage against the dense background of dark foliage. Near the mansion are a few bright modern flower beds flanking the flight of steps, which are *not* modern, but are carpeted with the Ivy-leaved Toadflax, *Linaria Cymbalaria*, which springs from every crevice in the old stones and is left to ramble in its own wild way. This is just as it should be, and on the south side of the building we find with equal appropriateness old herbaceous borders, with always something in flower in them in summer, and packed full of bulbs for producing a wealth of beauty in spring.

At the end of these borders are the Yew hedges, two of them running due south from the mansion with a grass glade about 15 feet wide and 60 yards long between them. This is known as Anne Boleyn's Walk, and a delightful promenade it is, whatever it may have been when it was frequented 350 years ago by the unfortunate Queen whose name it bears. The hedges are certainly splendid examples of their kind, and must rank among the finest in the kingdom. They are in the shape of a span-roofed house—that is, have upright sides to the height of 7 feet, then sloping to a ridge in the centre 13 feet 6 inches from the ground. The roof on each side is 10 feet, so that, measuring from the ground on one side to the lawn on the other, we find a clipped surface of 34 feet; and perfect the clipping is, the sides especially, which are as true and level as a brick wall. It is quite certain that a better example of hedge-clipping is not to be found, and the workman is to be congratulated accordingly.

As inquiries are not infrequent as to the best time for clipping Yew hedges, it may be stated that these and all other famous Yew hedges that I have seen are trimmed in August. That is the best period of the year for the work, for there is just time for a fresh face of young growths to form, harden, and remain green, yet smooth, all the winter. If the clipping is deferred till spring and then done too soon the tender young growths are often injured by late frosts, while if the work is deferred till April the hedges are rough during the greater part of the year. August, then, is the best month in the whole year for the work in question.

Mr. Griffeth, the gardener at Wickham, has found, too, the advantage of not clipping as close as it is possible to drive the shears. Observing weak places in the sides of the hedges five years ago he had them clipped "lighter," that is, a very small portion—a quarter of an inch or so—of the annual growths were left. The improvement has been very marked,

and now a fault in the walls of Yew trees has to be sought for. These magnificent hedges were certainly worth going to see. They are the pride of Wickham, and cherished by the owner and his gardener.

The garden generally is evidently cherished, plants and flowers being extensively and well grown, the vegetable garden well stocked and pyramid Apple trees well trained, but not bearing heavily. Like the forest trees they grow with great freedom, and the branches need thinning and the roots pruning, of which the gardener is well aware; but, like many other gardeners, he cannot do everything at once—he simply does the best he can, and he does well. It is not often that healthier stove plants and Ferns are seen, nor finer bushes, white as snow with flowers of *Bonvardia Humboldti corymbifera*, the best of all the genus for summer. We must go far, too, to see better *Chrysanthemums*, *Poinsettias*, *Cyclamens*, and all plants of that character; while Heaths and *Epacris* grow like Willows. To these plants Mr. Griffeth gives sulphate of ammonia, which is by no means a common practice, and to that stimulant he attributes their remarkable health. It is used in liquid form at the rate of a teaspoonful to a gallon of water, but not given after August, or the growth would be so vigorous that flowers would not be freely produced. It may not be generally known that some of the best growers of Heaths for market use sulphate of ammonia in the manner indicated for such kinds as *Erica hyemalis*; therefore the practice is safe, good, and worthy of record here.

It only remains to recognise the consideration of Sir John Lennard in supplying everything needful for personal comfort, and the courtesy of his gardener in rendering our visit to Wickham Court in every way enjoyable.—J. W.

### A GOOD DAHLIA.

"A YOUNG FLORIST" has sent us some Dahlia blooms, with a request that we will state if any of them are perfect flowers, and, if not, what standard of excellence he is to strive for. Not one of the blooms was of sufficient merit to be included in a good stand. With the object of affording our correspondent and other young florists information on the point in question we have had a good flower engraved, and there were many equal to it at the National Dahlia Show last week. The only fault of this flower is that the florets are cupped a trifle too much; it is, however, a good if not a perfect flower nevertheless. The following are the properties and defects of a Show Dahlia as recorded in our "Florists' Flowers" manual:—

1, *Form*.—Viewed in front the flower should be a perfect circle; the petals broad at the ends, smooth at the edges, thick and stiff in substance, perfectly free from indenture or point, and should cup a little, but not enough to show the under surface. They should be in regular rows, each row forming a perfect circle without any vacancy between them; and all in the circle should be the same size, uniformly opened to the same shape, and not rubbed nor crumpled. 2, *Looked at sideways* the flower should form two-thirds of a ball. The rows of petals should rise one above another in rows; every petal should cover the join of the two petals under it, which the florists call imbricating; by this means the circular appearance is perfected throughout. 3, *The centre* should be perfect; the unbloomed petals lying with their points towards the centre should form a button, and should be the highest part of the flower, completing the ball. 4, *The flower* should be very double. The rows of petals lying one above another should cover one another very nearly; not more should be seen in depth than half the breadth; the more they are covered, so as to leave them distinct, the better in that respect; the petals, therefore, though cupped, must be shallow. 5, *Size*.—The size of the flower when well grown should be not less than 4 inches in diameter. 6, *Colour*.—The colour should be dense, whatever it may be—not as if it were a white dipped in colour, but as if the whole flower were coloured throughout. Whether tipped or edged, it must be free from splashes or blotches, or indefinite marks of any kind; and new flowers, unless they beat all old ones of the same colour, or are of a novel colour themselves, with a majority of the points of excellence, should be rejected.

*Defects*.—If the petals show the under side too much, even when looked at sideways; if they do not cover each other well; if the centre is composed of petals pointing upwards, or if those which are round the centre are confused; if the petals are too narrow, or exhibit too much of their length; or if they show any of the green scale at the bottom of the petals; if the eye is sunk; if the shoulder is too high, the face flat, or the sides too upright; if the petals show an indenture as if heart-shaped; if the petals are too large and coarse, or are flimsy, or do not hold their form—in any or all these cases the flowers are objectionable; and if there be one or two of these faults conspicuous the flower is second or third-rate.

### CRYSTAL PALACE SHOW.

SEPTEMBER 5TH AND 6TH.

By a continuation of the same policy that the Directors have adopted this season the Crystal Palace Shows will again become famous. In response to their liberal prizes and generally well-arranged schedules, the entries have been fully as good as could be expected, and as each exhibition appears to be larger and better than the last there is good hope that future displays will be still further successful and worthy of the place in which they are held.

On the present occasion we have two Shows to report, for associated with the exhibition of fruit, which was an excellent one, was the Grand National Dahlia Show; this was also in every way successful, and the aggregate result was a display of great magnitude, and sufficiently diversified to meet the varied tastes of the large number of visitors. The fruit and Dahlias were arranged in a marquee upwards of 200 feet long, the centres of the tables



occupied with plants from the Palace collection; another marquee at right angles being devoted to cut flowers and plants, for which prizes were offered; the International Show of works of art occupying the great transept, in which garden products were staged in previous years.

#### THE FRUIT SHOW.

As we have intimated this was extensive and excellent. Grapes were strongly represented, and the great majority were very good, not a few

offered only two collections were staged, one in each class; and we cannot help thinking that the £30 awarded to them might have been more advantageously applied by having a class for six dishes for instance, in which many persons could compete, and in other ways. Twenty-four dishes of fruit are too many to ask for, and such a number cannot be arranged even if four varieties of Grapes are admitted, the remaining twenty dishes to be distinct, without inferior produce being staged. Filling such a class means a scraping-up of everything, and does not represent the best examples of different kinds



Fig 41.—A GOOD DAHLIA.

superior, especially in shape of bunches, size of berries, and general finish; but there were a small minority both of so-called white and so called black Grapes that would have been as well at home. Collections of fruit were good, at least most of them were. Peaches and Nectarines were admirably shown, as were Melons; Apples and Pears in competition, good; Morello Cherries, splendid throughout the collections; but the display of Plums was limited, this not being a "Plum year." We will now glance at the classes.

**COLLECTIONS OF FRUIT.**—The first class in the schedule and the last we are bound to consider somewhat disappointing, inasmuch as for the £87

of fruit. In that exacting class Mr. Goodacre, Elvaston Castle, was alone, and it is a matter of surprise considering his success in other classes that he staged so well. In the great all-alone class he won the £15 with two well-crowned Pines; Black Hamburg Grapes, with fine berries; large Muscats, not over-ripe, and good Foster's Seedling; fine Melons, Peaches, Plums, and Cherries; good Nectarines, Pears, and Gooseberries; the remaining dishes consisting of Currants, Blackberries, Apricots, Alpine Strawberries, Figs, Mulberries, Apples, and a dish of Filberts.

Four collections were staged in the class for twelve dishes, though the prizes were only a little more than half the value of those offered in the preceding class.



Mr. J. Roberts, The Gardens, Gunnersbury Park, well won the first position with an extremely neat Queen Pine, splendid Madresfield Court, and full heavy Muscat Grapes; very fine William Tillery and Golden Perfection Melons; excellent Sea Eagle Peaches, Humboldt Nectarines, Williams Bon Chrétien Pears, Morello Cherries, Quatre Saisons Strawberries, Jefferson Plums, and a dish of Figs. The second prize fell to Mr. Thomas Blair, gardener to Sir G. O. N. Brooke Middleton, Bart., Shrubland Park, Needham Market, the collection containing excellent Grapes, fine Melons, good Figs and Pears, a dish of Granadillas, and a fine but not over-fresh Pine. Mr. Goodacre was a good third, his Melons, Peaches, Nectarines, Black Grapes and Cherries being extremely fine, Pine and Apricots small. Mr. Miles, Wycombe Abbey, admirably won the chief prize with a collection of eight dishes with a splendid Queen Pine weighing 6 lbs. 3 ozs., and not yet ripe, fine Madresfield Court and Muscat Grapes, a good Melon, Peaches, Nectarines, and Plums.

**GRAPES.**—In the class for a collection of ten kinds, six black and four white, two bunches of each, prizes of £8, £6, and £4 were provided. Mr. Roberts was again the chief prizewinner with a most commendable collection. The black varieties were Gros Colman, small bunches, but good well-finished berries; Alicantes good, but not quite ripe; Gros Maroc, medium bunches, magnificent berries; Black Hamburgh, good average quality; and splendid examples of Madresfield Court. The white Grapes were Foster's Seedling, large and good; Muscats, regular, well-filled, and finished examples; Trebbiano, large bunches, but rather loose; and neat bunches of Buckland Sweetwater. Mr. J. Woodbridge, The Gardens, Sion House, was the only other exhibitor in this class, and he well won the second prize. His Muscats were highly finished: Lady Downe's extremely fine, Madresfield Court excellent, and capital examples of Golden Champion. Trebbiano was also finer than in the other collection, while Alnwick Seedling and Muscat Hamburgh were full and well-coloured. In the class for two bunches each of five kinds, two white, three black, there were four collections, the prizes going in the following order:—First, Mr. Miles, Wycombe Abbey; second, Mr. Hudson, Gunnersbury House, Acton; third, Mr. A. Smith, gardener to W. H. Sewell, Esq., Warren Hill, Loughton, Essex. Mr. Miles' Grapes were neat, uniform, and in excellent table quality, though the Muscats and Lady Downe's were small, Alicantes and Madresfield Court excellent, and Foster's Seedling large in bunch but small in berry. In regard to Mr. Hudson's Grapes we must say that we never saw a second prize follow a first more closely. Alnwick Seedling was very fine, Muscats better than in the first-prize collection, Madresfield Court good, and there was not much the matter with Black Hamburgh and Foster's Seedling. We suspect Mr. Miles would feel himself lucky here, and we feel confident he would not have found fault had the two awards been reversed. The third-prize collection was only remarkable by the very fine Gros Colman in it, which surpassed everything else.

Eight competitors entered the lists with three bunches of Black Hamburgh—a very good class, first honours being well won by Mr. Thomas Moorhouse, gardener to J. W. Temple, Esq., Leyswood, Groombridge, Tunbridge Wells, with well-shaped bunches, weighing 2 lbs. each, the berries very good and admirably coloured. Mr. Roberts, Gunnersbury, was a good second with well shaped and finished bunches. Mr. F. Jordan, gardener to Birkett Foster, Esq., The Hill, Witley, Godalming, third with larger examples but irregular, and the berries somewhat rubbed.

A similar number of bunches were staged in the Muscat class, but though many of them were large the berries were small and unripe. Still, the prize-winning examples were good; those of Mr. Middleton, gardener to R. Pilkington, Esq., Rainford Hall, St. Helen's, splendid; in fact, considering the size, regularity, and beautiful finish of the berries, it is questionable if more meritorious Muscats have been seen for years. They were grand. Mr. Woodbridge was second and Mr. Hudson third, both staging well. Mr. Goodacre was the only exhibitor in the Gros Colman class—small bunches, but large and beautifully finished berries.

Six collections were staged in the Madresfield Court class, Mr. Woodbridge being first with medium-sized bunches, full of splendid and well-coloured berries; Mr. Jordan second with much larger bunches, but not equal in quality of berries; and Mr. Goodacre an exceedingly close third. A few of the exhibits in this otherwise good class were not ripe.

Five collections of Alicantes were staged. Mr. Wm. Howe, gardener to Henry Tate, Esq., Park Hill, Streatham Common, distanced all competitors with handsomely shaped 2 lb. bunches, and fine, regular, well-finished berries. Mr. Henry Folkes, gardener to J. F. Halsey, Esq., M.P., Hempstead, Herts, was second with much heavier bunches, but the berries smaller, yet excellently coloured. Mr. Charles Forbes, gardener to E. Bird Foster, Esq., Anstey Hall, Trumpington, Cambridge, secured the third prize with creditable examples.

In the white Grape class, Muscats excluded, five collections were staged. Mr. Woodbridge was a long way ahead, winning first honours with Golden Champion, large, regular, and fine; Mr. H. Folkes was second with large well-shaped bunches and good berries of Golden Queen—greenish gold, however, and they were worthy of a higher position; Mr. J. Lowry, gardener to J. MacAndrew, Esq., Belmont, Mill Hill, Hendon, being third with very large and clean Foster's Seedling. We have, in fact, never seen finer. In the class for any other black Grapes besides those above mentioned only three collections were staged, Mr. Moorhouse being distinctly first with splendid examples of Lady Downe's; Mr. Hudson second with Alnwick Seedling of excellent quality; and Mr. Wells, Earlswood, Redhill, third with Lady Downe's.

Prizes of £3, £2, and £1 were offered for baskets containing not less than 12 lbs. of black and white Grapes respectively. In the former class Mr. Hudson was first with grand examples of Alnwick Seedling—something to be proud of; Mr. Howe second with fine Alicantes, and Mr. Waterman third with good Black Hamburghs. In the latter class Mr. Pilkington was first with splendid Muscats; Mr. Goldsmith, gardener to C. H. Hoare, Esq., Kelsey Manor, Beckenham, second; and Mr. Wells, florist, Earlswood, Redhill, third with good examples of the same variety.

**PEACHES AND NECTARINES.**—Five collections of four dishes of Peaches were staged, the fruit throughout being wonderfully good. Mr. Blair and Mr. Haycock, Barham Court, being placed equal firsts, the former with Noblesse rather small, Barrington and Violette Hâtive, very fine, and Princess of Wales good; the latter staging Barrington, Walburton Admir-

able, Bellegarde, and Lady Palmerston, all in fine condition. Mr. Oclee, Blickling Hall, Aylsham, was a good second, his Desse Tardive being very fair, and Violette Hâtive well coloured. Eight single dishes were staged, Mr. Haycock being first with splendid examples of Walburton Admirable, Mr. Blair second with fine fruits of Barrington; and Mr. Gibson, gardeur to J. F. B. Atkins, Esq., Halstead Place, Sevenoaks, third with Princess of Wales.

Nectarines on the whole were very good indeed. Five collections of four dishes were staged, Mr. Hannagan, gardeur to R. C. Naylor, Esq., Hooton Hall, Chester, clearly taking the lead with Pine Apple, Rivers' Orange, Pitnaston Orange, and Boston, all fine fruit, richly coloured. Mr. Oclee was second with well-coloured but smaller fruit, and Mr. Haycock an exceedingly close third. In the single-dish class Mr. Holliday, gardener to James Norris, Esq., Castle Hill, Bletchingley, was first with beautiful examples of Pine Apple; Mr. Miles second with Albert Victor, the finest Nectarines in the Show, but not quite ripe; and Mr. Gibson third with Pine Apple.

In the class for a collection of six dishes of Peaches and six of Nectarines, distinct, four fruits of each, Mr. Roberts secured the first position; his Peaches being Barrington, Violette Hâtive, Princess of Wales, Bellegarde, Sea Eagle, and Grosse Mignonne; Nectarines, Pitnaston Orange, Victoria, Lord Napier, Rivers' Orange, Humboldt, and Violette Hâtive. Mr. Haycock was a close second, staging among others a fine dish of Stump the World Peach and well-coloured Humboldt and Balgown Nectarines.

**MELONS.**—Of these there was an excellent spread, twenty-one fruits of green-flesh and fifteen scarlet-flesh varieties, and the Judges very properly tasted every one of them in making their awards. In the former class Mr. Goodacre was first with Hero of Lockinge; Mr. Neighbour, Bickley Park, second with Victory of Bath; and Mr. Bailey, Shardeoles, Amersham, third with Hero of Lockinge. In the scarlet-flesh class Mr. Neighbour was first with Scarlet Gem; Mr. Bailey second with Victory of Bristol; and Mr. Oliver Goldsmith, Polesden, Dorking, third with Captain Lark's Melon, which closely resembles Victory of Bristol.

**PLUMS AND FIGS.**—Of Plums there was only a moderate display. In the class for four dishes of red varieties Mr. Neighbour well won the first position with Cox's Emperor, Victoria, Cooper's Large, and Pond's Seedling; Mr. Haycock being second, and Mr. Goodacre third. With the same number of dishes of white and green Plums Mr. Neighbour was again first with white Magnum Bonum, Jefferson, and two Gage Plums; Mr. Haycock was second, the remaining collection being disqualified. Mr. Goodacre was first in the class for four dishes of purple Plums with Kirke's Prince Englebert, Reine Claude Violette, and a small unnamed dish; and Mr. Gibson second. Mr. John Wallis, Keele Hall Gardens, secured the first prize for two dishes of Figs with Brunswick and Brown Turkey; Mr. Folkes second, and Mr. Oclee third, with the same varieties.

**PEARS AND APPLES.**—In the class for three dishes of ripe Pears Mr. Waterman, gardener to H. A. Brassey, Esq., M.P., Preston Hall, Aylesford, was first with Brockworth Park, Williams' Bon Chrétien, and Theodore Eyre; Mr. Goodacre second, and Mr. Neighbour third. For three dishes of ripe Apples Mr. Waterman secured the first place with Devonshire Quarrenden, Kerry Pippin, and Graveustein; Mr. Lane, St. Mary's Cray, second with Reinette du Lark, Coe's Golden Drop, and Shepherd's Newington, a pretty Apple streaked after the manner of the Hoary Morning. In the classes for twelve varieties of Apples and Pears the prizes were won by Messrs. Haycock and Waterman with magnificent fruit of the leading well-known large varieties.

**FRUITERERS' CLASS.**—The last class in the schedule was for fruiterers only—a collection of various fruits, home and foreign, such as are obtainable in Covent Garden Market; but the prizes of £15, £10, and £5 only brought one exhibitor—Mr. G. H. Wingfield, 37, Market Street, Brighton; and, although he had an imposing display and merited the prize, the response was inadequate.

Several miscellaneous exhibits contributed to the interest of the Show. Messrs. Cheale & Son, Crawley, had a large display of Apples and Plums, also American Blackberries; Messrs. Paul & Son, Cheshuot, an extensive collection of Apples; Messrs. Saltmarsh & Son, Chelmsford, beautiful specimens of their new Apple, The Queen; Mr. Neighbour an excellent collection of twenty dishes of creditable fruit; Mr. Walker, Thame, Lemons, Figs, and fine Red Currants; Mr. Roffey, Croydon, ripe fruits of his selected strain of Telegraph Cucumber as a sample—and a fine one—of the hundreds that he grows for seeds; and last, but not least, Mr. Rivers had a truly Sawbridgeworthian collection of fruits, including among Plums Rivers' Grand Duke and Sultan, splendid; Golden Esperine, Boulouf (Red Gage), Rivers' Autumn Compôte, red; and fine Pond's Seedling. Noticeable among Peaches were splendid examples of Lord Palmerston, with good fruits of Crimson Galande and wonderfully coloured Golden Rathripe. Of Pears Clapp's Favourite, Souvenir du Congrès, and Pitnaston Duchess were the most striking; but the most remarkable feature were the Nectarines, inasmuch as they were not only fine but all home raised—Chaucer, Milton, Victoria, Spenser (fine colour), Newton (pale), Byron (fine), Lord Napier, Humboldt (excellent), Pine Apple, Orange, and a seedling, No. 34—grand fruit, not surpassed, if equalled, in any of the prize collections. This collection may be termed a good finish to a good fruit Show.

**PLANTS AND CUT FLOWERS.**—Good prizes were offered to nurserymen and amateurs, and the collections staged in competition for them with groups arranged not for competition by nurserymen and florists filled most effectively the allotted space. It has almost become the fashion to talk of the Gladiolus dying out, but so far from this being the case they were exhibited in greater numbers and of finer quality than has ever been seen before at the Palace. The display was simply magnificent. In the open class—a collection of not less than thirty-six spikes—the first prize was nobly won by Mr. Alexander E. Campbell, florist, Cove Gardens, Gourock, N.B., and those who inspected his towering spikes and smooth broad-petalled flowers will not soon forget them, while the colours were as clear and brilliant as could be imagined. It is not too much to say that this was the grandest collection of Gladioli that has ever been seen in the south of England, and it seems to prove that the plants grow more vigorously in the north than the south. The second prize was awarded to Messrs. Harkness & Son, Bedale, Yorkshire, for good examples, but they were not by any means equal to the brilliant



collection of massive spikes staged by Messrs. Kelway & Sons, Langport, not for competition. These were, however, not so fine as we have seen them in previous years. The hot and dry summer has doubtless checked the vigour of the plants in the south. This, however, will not injuriously affect the corms, but, on the contrary, they ought to be exceptionally well ripened. In the amateurs' class of twelve spikes the prizes were awarded to Mr. William Oates, Wighill Park, Tadcaster, and Mr. Cattley, Bath, for creditable collections. We omitted to state that Mr. Oates had the third prize in the open class.

The next flowers worthy of note were Hollyhocks. It is quite a novelty to see stands of these grand autumn flowers in the south, but really fine examples were staged on this occasion by Mr. G. Finlay, gardener to Mrs. Maynard, East Layton Hall, who well won the first prize offered for twenty-four varieties; also by Messrs. Harkness & Son, Bedale, who followed not afar off. These stands appeared to be especially interesting, awakening as they did memories of past times before the invading fungus devoured the plants and drove the stately Hollyhock out of our gardens. Fortunate will it be if the enemy has perished by famine, or if, as in the case of Potatoes, varieties have been raised of sufficient vigour as to render them practically invulnerable to its attacks.

A bid was made for Asters, £5 being offered in two classes—namely, twenty-four quilled, and the same number of French varieties, distinct. It is not that the prizes are too high, but it is practically impossible for anyone to stage so many varieties to be good as well as distinct; and if not good they are nothing; while "distinct" means little if the differences between them have to be sought for with the aid of a powerful eye-glass. Stands of twenty-four blooms in twelve or eighteen varieties would be very much superior. The hot season has been against Asters; still some good examples were staged, Messrs. Saltmarsh & Son taking the lead in both classes, followed by the two exhibitors from Bath, Messrs. Hooper and Cattley respectively. Zinnias and Verbenas were honoured in the schedule, but the display was the reverse of imposing, and most of the prizes were withheld. Stove, greenhouse, and hardy cut flowers, arranged in three sections, were far more attractive, a very superior collection arranged by Mr. James, Castle Nursery, Lower Norwood, worthily securing the first prize. The flowers were arranged in glass bottles and tall glasses, and had a pleasing effect. We cannot enumerate them, but observed the new white fragrant Petunia Floral Wreath as not the least attractive.

Groups of plants contributed effectively to the appearance of the flower tent. The collection of Tuberous Begonias arranged by Messrs. Laing and Co., Forest Hill, was truly magnificent, and well merited the first prize of £6 which was offered. We were informed that many of the larger plants were exhibited at the May Show at the Palace, and their splendid condition on the present occasion afforded conclusive proof of the free and continuous flowering properties of these plants when well cultivated. Some of the newer varieties, of which a few were certificated, were strikingly meritorious.

Good prizes were offered for collections of early-flowering Chrysanthemums, which were won respectively by Mr. Davis, Lilford Road, Camberwell, and Mr. Piercy, 89, West Road, Forest Hill. The first-prize Camberwell group was tastefully arranged, and contained well-grown plants of large and small-flowered varieties. Amongst the former Madame Desgrange, the valuable early-flowering Japanese form was prominent, while brightness was imparted by Simon Delane, which has a general resemblance to Triomphe du Nord; and Pynaert Van Geert, a distinctly early Japanese, more resembling Fulton than any other, but with twisted florets of a reddish gold colour. Of the medium-sized varieties, Nanum, which is still one of the most useful whites, was covered with attractive flowers. The valuable rosy purple variety Lyon was represented, also the small free Petite Mary and several others, and the group was an excellent one. Mr. Piercy's plants were well grown, but had not been arranged with the same care as the others. Mrs. Cullingford, white, was very good; an early variety of "Late Flora" of the brightest yellow and very free—the only yellow variety that surpasses Précoceité; and St. Crouts, a dwarf floriferous pale pink form, was distinct and attractive.

Several miscellaneous groups of plants and flowers attracted, as they deserved, the attention of visitors. Messrs. William Paul & Son, Waltham Cross, had a great arrangement of cut Roses, amongst which a seedling, rich velvety crimson-scarlet, shone very brightly; and a similarly large collection was arranged by Messrs. Paul & Son, Cheshunt. Messrs. Cutbush & Son had a diversified group of stove and greenhouse plants; Mr. Turner, Slough, an effective mass of well-grown Lilium auratum; Mr. James a fine mixed group of plants, in which Chrysanthemum Madame Desgrange was prominently attractive; while last, but not least, Messrs. Cannell & Sons showed something of what is grown at Swanley on a splendidly furnished table about 30 feet long and 6 feet wide. The centre was occupied with dwarf well-flowered Tuberous Begonias in great and choice variety, the edge of the table margined chiefly with small plants of Polemonium caeruleum variegatum, the remaining space occupied with Dahlias, representing every type of flowers—Shows, Fancies, Pompons, singles, and the Cactus or Decorative type with pointed or lacinated florets. Amongst the latter was Picta formosissima, which it is almost a wonder was not called The Blazer, Glare of the Garden, the most effective of all in the grounds of the Crystal Palace; Mrs. Tait, white, serrated; Imperial Prince, ruby-red; Cochineal, very rich; Parrot, orange-scarlet; and the semi-double dazzling scarlet, Lord Lyndhurst, which was a favourite thirty years ago, and now snatched from oblivion. Some of the singles were very small and very pretty, such as Mrs. F. Moore, Midget Improved, Concinna, and many others which we must pass. Altogether this was perhaps the best exhibit that has been seen from Swanley, as it was undoubtedly a commanding feature of this excellent Show.

The liberality of the Directors of the Crystal Palace in providing such a good schedule must be recognised, and the untiring efforts of the Garden Superintendent, Mr. Head, appreciated in rendering the Show, what it unquestionably was, a success.

#### NATIONAL DAHLIA SHOW.

As above intimated, a great success was scored by the National Dahlia Society in the Show under notice, for exhibitors mustered in strong force, and staged blooms of splendid quality. In every case the classes were well filled, and we more than once heard the remark, "There is not a bad flower in the Show." The most noticeable feature was the decided increase of the exhibits

in the Pompon classes, and these cut and staged with a free admixture of their own foliage looked charming; they are evidently rapidly increasing in popularity. Single varieties were brilliant, but for substantial satisfaction we must rest on the massive and symmetrical Show and Fancy blooms. In addition to the competing collections, miscellaneous groups were also shown, and these, together with the Palms and Ferns tastefully interspersed amongst the exhibits, added in no inconsiderable degree to the effect of the Show, which, everything considered, was undoubtedly one of the best that has been held by this Society.

**NURSERYMEN'S CLASSES.—Show Varieties.**—The competition was very keen in the largest class, that for forty-eight blooms, although only three exhibitors entered the lists. All the collections, however, were admirable, the first prize being awarded, after mature consideration, to Mr. Chas. Turner, Slough, who staged flowers of remarkable colour and symmetry; the following being the varieties shown:—Back row.—Rev. J. Godday, Constancy, Herbert Turner, W. Rawlings, Mrs. Forman, Alexander Cramond, Mrs. Gefferd, Imperial, Seraph, John Standish, Muriel, Statesman, Hy. Walton, Jas. Cocker, Royal Queen, George Rawlings. Middle row.—Mrs. Gladstone, Burgundy, John Wyatt, Mrs. Harris, Jas. Stevens, Goldfinder, Rosetta, Hope, Lady Gladys Herbert, Julia Wyatt, Henry Bond, Hon. Mrs. P. Wyndham, Prince of Denmark, J. N. Keynes, Sir G. Wolseley, Sunbeam. Front row.—Lord Chelmsford, Lady Wimborne, Ethel Britton, Ruby Gem, Acme of Perfection, Michael Saunders, Condor, Flag of Truce, Jas. Vick, Joseph Ashby, Jas. Service, Champion Rollo, Mrs. Shirley Hibberd, Cardinal, Clara, and J. B. Service. The names are printed in the order the blooms were placed. Messrs. Keynes, Williams & Co., Salisbury, were a close second, their flowers being of equally good size and colour, but one or two were a little less shapely than those in the first-prize collection. It is invariably a matter of great difficulty to decide the question of superiority when such grand collections as these are in opposition. This is the second year in succession that Messrs. Turner and Keynes have occupied the respective positions assigned to them on Friday. The third prize was won by Mr. Boston, Bedale, Yorks, who also showed boxes of excellent blooms, smaller, however, than the preceding.

There were no less than eight competitors in the class for twenty-four blooms, and again the flowers were of splendid quality. The first prize was secured by Messrs. Saltmarsh & Son, Chelmsford, with the following varieties:—Back row.—James Cocker, Mrs. Shirley Hibberd, Burgundy, Constancy, Shirley Hibberd, Mrs. Dodds, Hon. Mrs. P. Wyndham, Royal Queen. Middle row.—Henry Walton, Mrs. Harris, Mrs. G. Harris, Earl of Beaconsfield, Lady Gladys Herbert, Rev. J. Godday, J. N. Keynes, Sunbeam. Front row.—Rosy Morn, Mrs. Stancomb, Revival, Vice-President, S. Plimsoll, Ethel Britton, John Wyatt, and Helen McGregor. This was a superb collection, the blooms being grandly symmetrical. Messrs. Harkness & Sons, Bedale, Yorkshire, were placed second, also with a very fine stand; Messrs. Paul and Son, Cheshunt, third; and Messrs. Gilbert, Ipswich, fourth. This class occupied a considerable amount of space, and is evidently a popular one. As was the case last year, Mr. J. Walker, Thame, Oxon, took the lead in the class for twelve varieties, four other collections being also entered. Mr. Walker's stand consisted of grand blooms of the following:—Back row.—Seraph, Champion Rollo, Perfection of Primroses, James Cocker. Middle row.—William Rawlings, Mrs. Shirley Hibberd, George Rawlings, John Bennett. Front row.—Henry Walton, Joseph Ashby, Herbert Turner, and Prince of Denmark. Mr. T. Painter, Stoke-on-Trent, was second; Messrs. Rawlings Bros., Romford, third; and Mr. S. Humphries, Chippenham, fourth. Mr. Painter showed good blooms, but the flowers were all too light in colour to form an effective box.

**Fancy Varieties.**—For these two classes were provided—the first for twenty-four blooms, producing another close contest between Messrs. Turner and Keynes, although the result in this case saw their relative positions reversed, Messrs. Keynes securing first honours. Their collection consisted of splendid blooms of the following varieties:—Back row.—George Barnes, Rev. J. B. M. Camm, Mons. Chauvière, Miss Lily Large, a sport from Gaiety; Chorister, Flora Wyatt, Rebecca. Middle row.—James O'Brien, General Gordon, Fanny Sturt, Duchess of Albany, James Forbes, Frederick Smith, Lottie Eckford, Gaiety. Front row.—Maid of Athens, Professor Fawcett, Miss A. Melsome, John Lamont, Miss N. Hall, Parrot, Alderman, and John Saunders. Mr. Turner's stand was little inferior in quality, and easily secured second prize, the third being awarded to Mr. Boston. Messrs. Saltmarsh easily won the first prize from nine other competitors in the class for twelve, showing beautiful blooms of the following:—Back row.—Egyptian Prince, Rev. J. B. M. Camm, Rebecca, Richard Dean. Middle row.—Wizard, John Lamont, Oracle, Galatea. Front row.—Hercules, Flag of Truce, Lady Antrobus, and Gaiety. Neither in size, colour, or symmetry did these flowers leave anything to be desired. Messrs. Paul, Walker, and Gilbert respectively secured second, third, and fourth prizes, also with meritorious blooms.

**AMATEURS' CLASSES.—Show Varieties.**—To these three classes were appropriated, respectively for twenty-four, twelve, and six blooms. In the largest class eight admirable collections were staged, premier honours being won by Mr. Thos. Hobbs, Lower Easton. He, however, was run exceedingly close by Mr. H. Glasscock, Bishop Stortford. Mr. Hobbs' varieties were:—Back row.—Rev. J. B. M. Camm, James Cocker, Henry Walton, Herbert Turner, James O'Brien, Harrison Weir, Prince Bismarck, Mrs. Cannell. Middle row.—Mrs. Stancomb, Rev. Edwards, Mrs. Dodds, Senator, Mrs. Harris, John Standish, Ethel Britton, James Vick. Front row.—Lord Chelmsford, Mrs. Shirley Hibberd, J. B. Reid, Lady Golightly, H. W. Ward, Emily Edwards, O. E. Cope, and Hon. Mrs. P. Wyndham. In every respect the blooms shown were remarkable, great size, colour, and symmetry being combined in them. Mr. Glasscock also showed a splendid collection, while excellent blooms were shown by Mrs. R. Petfield, Diddington, Buckden, who took third prize, and Mr. Hockley, Stokesley, who was placed fourth. A large entry was secured in the class for twelve blooms, fourteen collections being staged. Mr. J. Tranter, Henley-on-Thames, took the lead with remarkably fine blooms of the following:—Back row.—Hon. Mrs. P. Wyndham, Clara, Henry Walton, James Cocker. Middle row.—Hope, Mrs. Gladstone, William Rawlings, H. W. Ward. Front row.—John Wyatt, Joseph Ashby, Goldfinder, Ethel Britton. Messrs. Hussey, Norton Court, Taunton; Tunbridge, Broomfields; and Steer, Eltham, were placed second, third, and fourth in the order named.



The class for six blooms produced some very keen competition, the first prize being adjudged to Mr. A. Painter, Moreton Hall, Congleton, who staged very fine and symmetrical blooms of the following varieties:—John Henshaw, Henry Walton, Ethel Newcome, Mrs. Gladstone, Clara, and Percival. Mr. Harris was a good second; Mr. G. Tanner, Chippenham, third; and Mr. G. J. Moorcroft, Maidstone, fourth. There were seven entries in this class.

**Fancy Varieties.**—Nine collections had to be scrutinised before the prizes were awarded in the class for twelve Fancy blooms, the result being that Mr. Glasscock was placed first; second, third, and fourth places being filled respectively by Messrs. Petfield; Boothroyde, gardener to H. Coleman, Esq., Dover; and Tranter. Mr. Glasscock's excellent stand was composed of the following varieties in fine condition. Back row.—Miss Lily Large, Mrs. Saunders, Henry Glasscock, Gaiety. Middle row.—Miss N. Hall, John Forbes, Peacock, Barnaby Rudge. Front row.—Mandarin, Flora Wyatt, Professor Fawcett, and Egyptian Prince. Mr. Hobbs was again to the fore with six blooms, twelve other stands being sent. His collection was a grand one, the blooms being both large and shapely. The varieties shown were Flora Wyatt, a seedling, Professor Fawcett, Hercules, Lottie Eckford, and John Lamont. Mr. Tunbridge and Mr. Buss, Parkside Gardens, Ewell, were placed second and third, the fourth prize being awarded to Mr. Painter.

**OPEN CLASSES.**—The classes provided respectively for the best Show and the best Fancy bloom in the Show threw a very difficult task upon the Judges, so many magnificent flowers being staged that to decide which was absolutely the best seemed to be a matter of impossibility. The award for the best Show flower, however, was ultimately given to Mr. Glasscock for a beautiful bloom of Mrs. Gladstone (blush), which was included in the collection which won for him the Veitch Memorial prize. In freshness, substance, and symmetry this flower was perfect, and richly deserved the honour it won. The best Fancy bloom was shown by Messrs. Keynes, the prize being awarded to General Gordon, a grandly symmetrical flower, the colour being a beautiful combination of crimson and gold.

**Pompon Varieties.**—Three classes were provided for these, the first prize for twenty-four varieties falling to Mr. Turner, the second to Messrs. Keynes and Williams, and the third to Messrs. Rawlings Bros. These were the only exhibitors, Mr. Turner's stand containing the following:—Back row.—Middle. N. Faconat, Favourite, Lady Blanche, Gem, Prince of Liliputians, Isabel, White Aster, Coquette. Middle row.—Gros au Wien, Garnet, E. F. Jungker, Hedwig Polwicz, Golden Gem, German Favourite, Nymph, Fair Helen. Front row.—Little Duchess, Comtesse von Sternberg, Cupid, Little Bobby, Little Arthur, Mabel, Titania, and Professor Bergert. These were arranged in bunches of ten flowers, and looked most charming. Six competitors arranged stands in the class for twelve blooms, Mr. John Henshaw, Rothamsted Cottage, Harpenden, taking the lead; Messrs. Paul & Son, Douglas, and F. T. Smith & Co., West Dulwich, taking second, third, and fourth prizes respectively. The varieties shown by Mr. Henshaw were as follows:—Back row.—Favourite, Lady Blanche, Isabel, Titania. Middle row.—Guiding Star, Gem, Sensation, Mabel. Front row.—Little Duchess, Fanny Weinar, Little Nigger, and E. F. Jungker. Messrs. J. Burrell & Co., Cambridge, took the lead from four other competitors in the class for six varieties with Northern Light, White Aster, E. F. Jungker, Titania, Prince of Liliputians, and Little Arthur. These were splendid clusters of symmetrical flowers, and well deserved the chief award. Mr. J. T. West, gardener to W. Keith, Esq., Cornwalls, Brentwood, secured second prize, also with admirable flowers. Mr. Walker was placed third, and Messrs. R. Veitch and Son, Exeter, fourth. These flowers are becoming more popular every year, and they were perhaps never better shown than in the present case.

**Single Varieties.**—These were admirably shown, the flowers being large and of good substance, and the colours bright and clear. In the class for twelve varieties Messrs. Turner and Keynes were again in close competition, the first-named exhibitor being placed first, and Messrs. Keynes second. Mr. Turner's splendid stand was composed of the following varieties:—Evening Star, Sunbeam, Defiance, Ellen Terry, Harlequin, W. G. Head, Alba, Paragon, Acquisition, Duchess of Westminster, Queen of Singles, and Lutea grandiflora. Messrs. Keynes also exhibited splendid bunches; Messrs. Cheal & Son, Lowfield Nursery, Crawley, and Messrs. Paul and Son also showed meritorious stands, and were awarded third and fourth prizes respectively. Five collections in all were staged in this class, the remaining one—that of Messrs. John Lamont & Son—being disqualified, as it contained more than ten flowers in several of the bunches. This was greatly to be regretted, for the blooms were of large size and excellent quality, and would undoubtedly have made a bold bid for premier honours but for the exhibitor's unfortunate mistake. Six collections were staged in the class for six varieties; Messrs. J. Burrell & Co., taking the lead, closely followed by Mr. Humphries; third and fourth prizes falling to Messrs. R. Veitch & Son and Gilbert. Messrs. Burrell exhibited flowers of splendid quality, the following comprising the contents of their stand:—Crimson Beauty, White Queen, Mauve Queen, Lutea grandiflora, Ascalon, and Madge Thompson.

These classes were supplemented by one for a prize offered by the Veitch Memorial trustees for the best stand of eighteen Dahlia blooms, to consist of twelve Show and six Fancy varieties. The prize, which consisted of the Veitch Memorial medal and £5, was won by Mr. Glasscock, who exhibited a really magnificent collection, composed of beautiful blooms of the varieties named herewith. Show, Back row.—Imperial, Hon. Mrs. P. Wyndham, Rev. J. Godday, Mrs. Cannell. Middle row.—Mrs. Gladstone, Shirley Hibberd, Countess of Ravenswood, Sir G. Wolseley. Front row.—Prince of Denmark, Harrison Weir, Black Knight, and Flag of Truce. Fancy.—Miss Lily Large, Mrs. Saunders, Barnaby Rudge, Chorister, Professor Fawcett, and Wizard. There were two other competitors in this class who also showed excellent stands, but Mr. Glasscock's flowers were remarkable alike in size, shape, substance, and colour, and were eminently worthy of the position assigned to them.

First-class certificates were awarded to the following:—

**Dahlia Mrs. Langtry.**—A medium-sized symmetrical bloom, the centre of the cupped petals creamy buff, heavily tipped with crimson.

**Dahlia General Gordon.**—A magnificent Fancy variety, large, well formed, and of most brilliant colour—gold heavily flaked with scarlet, resembling the rich translucent colours on stained glass.

**Dahlia Romeo (Keynes).**—A Fancy variety, orange-buff, flaked with crimson: flowers of good size and form.

**Begonias Goliath (Laing).**—A double-flowered variety, with enormous blooms, being perfect rosettes of a bright cherry crimson.

**Begonia Jules Leguin (Laing).**—Fine clear red, shaded salmon-vermilion; large flower.

**Begonia Erecta Superba (Laing).**—An erect-flowering single, of large size and perfect form, intense scarlet, with a white eye.

**Begonia Madame Emile Galle (Laing).**—A distinct double variety; colour flesh, enlivened with orange; flowering very freely.

Attractive miscellaneous groups were staged by Mr. T. Ware, Tottenham, consisting chiefly of single and Pompon Dahlias; by Messrs. Keynes, Williams & Co., who showed splendid boxes of Decorative or Cactus Dahlias; by Messrs. Cheal & Sons, Crawley, who had boxes of Dahlias and other plants; and by Messrs. Cannell & Sons, Swanley, who arranged a large and fine group of Dahlias, Begonias, &c., tastefully associated with Palms, Ferns, and other plants.

In the afternoon the Committee, Judges, and several of the principal exhibitors and other friends were entertained at luncheon, toasts being proposed and responded to by Messrs. Hibberd, Paul, Downie, Henshaw, Glasscock, and Turner. The first-named gentleman requested the sanction of the company assembled in sending a letter of condolence to the respected Hon. Secretary of the Society, Mr. Thomas Moore, whose absence through serious illness was greatly deplored; and this was most heartily accorded.

## HISTORICAL JOTTINGS ON VEGETABLES.

### THE LETTUCE AND THE ENDIVE.

THE poet Crabbe has given a ludicrous description of the eccentric gardener whose passion for Latin names amounted to a craze, and who, in presenting his little girl at the church font, announced that her name was Lonicera; adding afterwards, for his pastor's information, that if the next was a boy his name was to be Hyacinthus: should it be a girl, then Belladonna had been chosen. With the difference of a single letter—that is to say, written "Lettice"—the name of a familiar vegetable was once commonly used as an appellation for girls; and in consequence of the freedom of spelling that our ancestors allowed themselves, it may be found recorded as "Lettis" and "Lettus" by inaccurate clerks. Leaving the question as to what is the link between the two, we remark that "Lettuce" doubtless comes either from the Latin "Lactuca" or the French "Laitue," and both these allude to the milky juice exuded by the plant.

Our garden Lettuce is a plant of the Composite order, belonging to the Chicory group, allied to the wild species, of which we have three or four that are natives of Britain, but not developed from these by cultivation, as in the case of some vegetables. It appears to be distinct, this *Lactuca sativa*, although *L. virosa* approaches it somewhat; but this is strong-scented and acrid, containing, however, in much larger quantity the sedative substance lactucine, which is afforded by the garden Lettuce, and to which several of its medicinal qualities are to be attributed. It is probably a native of Asia. The particular region is uncertain, and from a tale that is told by Herodotus in connection with the murder of Smerdis by his brother Cambyses, where an allusion to the Lettuce cost a princess her life, it is manifest the vegetable was brought upon the tables of the Persian kings several centuries before Christ. For many years the Romans knew only one kind—a dark variety, which seems to have been used partly as food, partly as medicine, it being given to Augustus Cæsar by one of his physicians with marvellous results, which fact brought Lettuces into more repute. The Greeks had their favourite kind, a Lettuce of tall growth which cannot be identified. Perhaps it was the large-rooted purple variety that Pliny mentions as one much approved in his day; but he names others then well known—the Egyptian, Cicilian, Cappadocian, and so on. Gardeners of that age took pains to discover how they could produce Lettuces the greater part of the year, and Pliny appears to have himself watched the operation of earthing them up to make them cabbage; and blanched hearts were a desideratum amongst the Romans, to obtain which some recommended the application of sea sand to the crown of the plant. There is no account, however, of Lettuce cultivation in England during the Roman rule nor in the middle ages.

It is not until 1562 that we find evidence that the Lettuce was grown in our gardens, and about forty years later Gerarde states that eight or nine sorts had been shown him. The Cabbage variety, which he calls the Roman Lettuce, was chiefly used for stews, and he recommends that this vegetable be boiled, so as to render it more digestible. It was customary to serve it cold at the beginning of supper to stimulate appetite; but Gerarde sagely remarks his belief is that if taken after supper Lettuce would obviate the unpleasant consequences arising from excess of wine. His hint that persons troubled with heartburn might eat Lettuce with benefit is of doubtful value, unless we accept the "like curing like" theory; for dyspeptics, as a rule,



have to shun Lettuce, wholesome as it is to those with good digestions who need a refrigerant vegetable. As to nourishment, the Lettuce affords but little, unless eaten in much larger quantities than is usual when partaking of a modern salad, since we, at least, have almost ceased to eat it either boiled or baked, though a good deal may be said in favour of the practice of the ancients.

The London market gardeners, probably without the assistance of historic studies, were quick to discern that this vegetable would prove saleable all the year round could a continuous supply be sent into the market. By successive sowings and partial culture under glass, and following the plans suggested by some of the Dutch gardeners, our earlier cultivators of the Lettuce managed to raise plants that could be cut even in the winter season; but the principal sowing was made about September, to obtain a crop for spring and summer use. It was often planted very freely upon land south and west of London, now nearly built over, in long rows amongst Cabbages and Cauliflowers, not suffering materially from the smoky atmosphere, but occasionally much beset by wireworm. Varieties have greatly increased since the reign of Elizabeth. Some of the oldest seem to be the Large White Cos of Saxony, the Green Cos, the Red Egyptian, the Green Dutch, and the Hardy Hammersmith.

The garden Endive is a species nearly related to the wild Chicory or Succory, and, like the Lettuce, it belongs to the Composite order. It also is an annual, and hardy, although not a native of temperate climates. India, China, and Japan have all been referred to as its home; but probably the Endive was an Egyptian plant when it was first taken into cultivation. We may assume that it travelled into Greece and Italy at an early period, for Ovid speaks of it distinctly, so does Columella, both naming it as an esculent. Pliny, too, describes it and its uses, attributing to it sundry medicinal virtues, while he alludes to its being cultivated as a plant suitable for stews and salads. The date of 1548 has been assigned, perhaps too positively, for its first appearance in Britain; about that period a variety of vegetables, previously unknown, were introduced from France and Holland. During the reign of Elizabeth its culture had so far progressed that the gardeners fully understood how to grow Endive and store it for winter use. Gerarde gives an explanation of the latter method in his wonted style. "Endive being sown in July," he writes, "remaineth until winter, at which time it is taken up by the roots and laid in the sun or air for the space of two hours; then will the leaves be tough, and easily endure to be wrapped up in a heap and buried in the ground with the roots uppermost, where no earth can get within it (which, if it did, would cause rottenness). This being covered, may be taken up at any time convenient, and used for salads all winter, as in London and other places may be seen." McIntosh observes that this was really a very judicious practice, if the plants were dug up in November and dry peat earth put round them. But some one or other of the London gardeners devised a different method, which arose out of the introduction of flat tiles or boards for blanching, though the old plan of tying-up Endive with osier twigs or bass has never been entirely discontinued. Sheltered banks with a slope towards the south were set in October with rows of plants, each having its pantile, the convex side being turned to the sun. In the winter these banks were covered with clippings from hedges or with straw.

The Batavian varieties of the Endive came early into repute, and kept their position through many years, the small Batavian being esteemed one of the best; but the Curled-leaved and the Lettuce-leaved have had their admirers, though the latter is only suitable for summer; also the French Green and their White Curled have been largely grown since their introduction. Those varieties, however, called the Dutch and Italian have no special recommendations.

The Chicory, Succory, also called the wild Endive, the ground root of which is often combined with coffee, has not been taken into garden cultivation to any extent in Britain; but in France and the Netherlands it has for some time been regarded as a wholesome and agreeable addition to the list of vegetables. Sown thickly in frames or in the open air it is allowed to produce a few leaves, and then cut as a small salad during the spring. The French know it as Barbe de Capucin, the leaves being blanched by the exclusion of light, when it is used instead of Endive. Also in some parts of Europe the fresh roots are scraped and served as we serve Parsnips.

#### CYPRIPEDIUM SUPERBIENS.

CYPRIPEDIUMS rank amongst the most beautiful of stove plants, not a few of them being highly effective in conservatories during the flowering

period, where they continue attractive for weeks. Many handsome forms are now in cultivation, and one of them is *C. superbiens*. The flower represented was from a plant in Mr. B. S. Williams' collection at Holloway. The "Orchid-Growers' Manual" says:—"This very handsome species of Lady's Slipper is a native of Java and Assam, and may be regarded as the best of the *C. barbatum* group. It is of free growth and good habit, and has finely variegated foliage, so that when out of bloom it has a beautiful appearance. It blooms in June and July, and continues a long time in flower, so that it is invaluable for home decoration or exhibition purposes. When well grown this makes a grand plant. It is sometimes grown under the name of *C. Veitchianum*."

#### BRIGHTON AND SUSSEX HORTICULTURAL SOCIETY.

THE executive of the above Society are to be congratulated on the success of the Show which marks the close of their thirty-second season, as both in

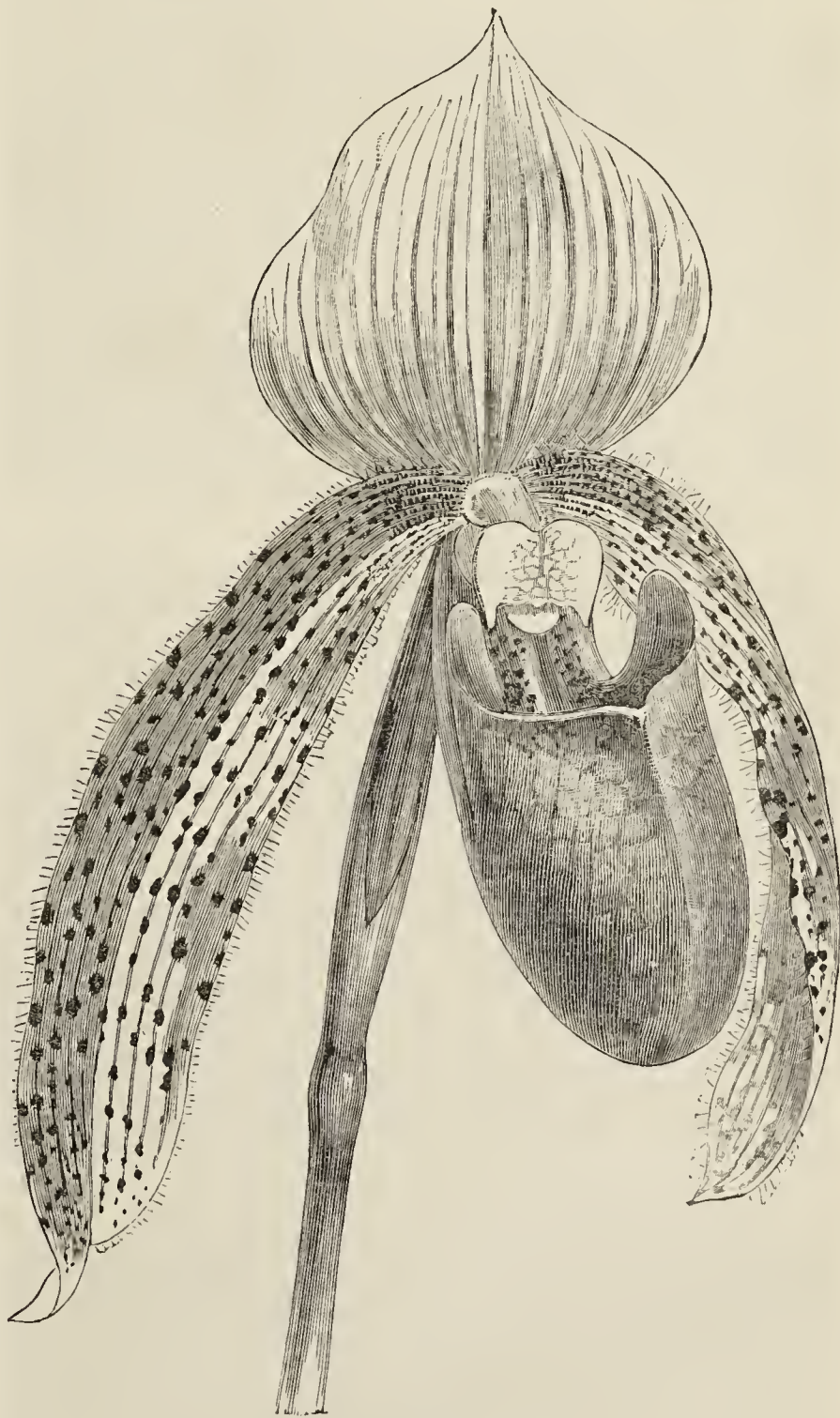


Fig. 42.—*Cypripedium superbiens*.

the quantity and quality of the exhibits, and in the attendance of visitors, there was every cause for satisfaction. The Show was held in the apartments and gardens of the Royal Pavilion at Brighton on September 3rd and 4th, under the superintendence of Mr. H. Chilman, and as liberal prizes were offered by the Committee, and various cups were also given by persons interested in the success of the Show, the plants and fruit sent were of a high standard of excellence, and competition in many cases remarkably keen. The Society, which has for its distinguished President the Duke of Devonshire, and as Vice-Presidents a long array of county and civic dignitaries, is in an exceedingly gratifying position; and while it arranges an equally liberal scale of awards, and is fortunate enough to possess, as it now does, the assistance of the directors of the London, Brighton, and South-Coast Railway in conveying plants from London free of charge, it may be safely prophesied that equal success will attend their future efforts to



encourage the spread of horticulture in Sussex, and afford pleasure to the numerous visitors at Brighton at the present period of the year.

The Show was divided into two divisions, the first of which comprised classes open to all exhibitors, and the second division containing exhibits from growers in the county of Sussex only. Although the arrangements were in the main excellent, the necessity of holding the Show in several small rooms rendered the task of taking notes one of no small difficulty, many of the fruit classes, for instance, being placed in one room, while the remainder were in another; while in the case of Zonal Pelargoniums, Classes E and F were staged in a room some distance away from those in Class G. In addition to the exhibits in the apartments of the Pavilion a large marquee was erected for the specimen plants and groups in the gardens adjoining.

#### PLANTS.

There were two open classes for stove and greenhouse plants, the first for money prizes offered by the Society, and the second for the Ashbury cup, value five guineas, presented by James Ashbury, Esq.; J. Warren, Esq., Handcross Park (Mr. Rann, gardener), being placed first in each class. In the former the most remarkable plants in his group were *Crotons Andreanus* and *Warrenii*, *Gleichenia rupestris glaucescens*; and in the latter magnificent specimens of *Crotons Andreanus* and *Hendersoni* and an *Allamanda*. The plants appeared most healthy, and well deserved the position they won. Messrs. Gilbert, nurserymen, Hastings, and Mr. Meachen, gardener to C. Armstrong, Esq., Withdeane, were respectively second and third in each class. Mr. Gilbert's exhibit in Class B included splendid specimens of *Erica cerinthioides coronata* and *Ansteniana*, *Statice Gilberti*, *Allamanda Hendersoni*, and *Bougainvillea glabra*. In the county class for four stove and greenhouse plants Mr. Warren was again to the fore, Mr. Jupp, gardener to C. Boulton, Esq., Eastbourne, being awarded second prize. Handsome groups of *Fuchsias*, *Coleuses*, and *Begonias* were shown in the open classes, the prizes for the former being won by Mr. Fluck, gardener to J. O. Smith, Esq., Richmond Villa, with a beautifully arranged group, and Mr. Meachen. Messrs. Martin, gardener to J. Langham, Esq., Eastbourne; Jupp, and Head, florist, West Brighton, secured the prizes for a group of *Coleuses*, the first-prize group being tastefully arranged with plants of good colour. Messrs. Spottiswood, gardener to G. Duddell, Esq., Queen's Park; Gregory, gardener to Admiral Maxse, Eastbourne; and Meachen, were awarded prizes for effective groups of *Begonias*. In the county classes for *Fuchsias* and *Begonias* Messrs. Fluck, Mann, gardener to C. Gilbert, Esq., Eastbourne; Townshend, gardener to the Rev. A. Thomas, Rottingdean; were prize-winners. Well-flowered healthy plants of Zonal Pelargoniums from Messrs. Gilbert, Meachen, Townshend, and Haggett secured prizes in their respective classes, Mr. Gilbert's plants being particularly good; Messrs. Warren and Turner being awarded prizes in the county classes for four variegated plants, these being chiefly *Crotons*.

#### GROUPS.

An important feature in the open classes were the prizes offered for groups of Ferns, arranged in a space not exceeding 200 square feet, and it is to be regretted that there was practically no competition, the only group staged being that of Mr. Miles; this, however, was most tastefully and effectively arranged—indeed, considering the general sameness of hue which the plants necessarily exhibited, it is astonishing how really effective the group was made by being massed in so skilful and artistic a manner. In the county classes for groups of plants the most noteworthy were the competing exhibits for the Ashbury cup, value five guineas, presented by James Ashbury, Esq., for a miscellaneous group of plants in or out of flower. This was secured by Mr. Meachen, who showed consistently good exhibits in each of the classes in which he competed. In this case his victory was extremely well deserved, the group being one of the most attractive features of the Show. It consisted of such flowering plants as *Liliums*, *Gladioli*, *Begonias*, *Eucharises*, *Ericas*, and others, interspersed with small plants of *Crotons*, *Coleuses*, &c., and resting on a light and attractive groundwork of *Adiantums* and other Ferns. Mr. Turner, gardener to Major Way, Wick Hall, was awarded the second prize of £3, also with an exceedingly attractive group, and Mr. Jupp was a meritorious third. The last-named exhibitor was well to the fore in the county class for groups of Ferns arranged for effect on a space not exceeding 75 square feet. His group was most lightly and tastefully arranged, Mr. Townshend being awarded second prize, and Mr. Turner third. The groups competing in the county classes, together with the exhibits of *Coleuses*, *Begonias*, *Fuchsias*, and specimen plants before alluded to were staged in the marquee in the gardens, which consequently looked very attractive.

#### CUT FLOWERS.

For these there were numerous classes provided, and the stands of Dahlias, Roses, Asters, *Gladioli*, *Phloxes*, and other flowers imparted an appreciable degree of brightness to the Show. Dahlias were remarkably good, the first-prize collection of forty-eight blooms of Show varieties from Messrs. Paul & Son, The Old Nurseries, Cheshunt, being magnificent. Mr. Seale, nurseryman, was a close second with a collection of almost equal merit, and Messrs. Cheal & Son, Lowfield Nursery, Crawley, third. The position of the leading competitors in the Show class was reversed in the competition for twenty-four Fancy blooms, Messrs. Seale and Paul being first and second respectively. Messrs. Cheal, Paul, and Seale were again to the fore for single Dahlias, these also being splendidly shown. In the county classes for Dahlias they were well shown, and prizes won by the Rev. R. Hales and Mr. Vincent, gardener to J. Hart, Esq., Keymer, but the competition was by no means keen.

The prizes offered for Roses produced fairly good exhibits, the first prize in the open classes falling to Messrs. Paul & Son with excellent boxes of blooms, Messrs. G. Piper, nurseryman, Uckfield, and Virgo, Womersley Nursery, Guildford, being second and third. In the remaining open classes the prizetakers were Messrs. Balchin, Piper, and Slaughter, Steyning. In the county classes Messrs. Slaughter, Vincent, and Hales were the prizetakers. The competition in the class for mixed bunches of cut flowers was fairly close, and many attractive bunches were shown, Messrs. Gilbert, Balchin, and Morse, nurseryman, Epsom, taking the prizes. Messrs. Staples, Balchin, and Townshend took the prizes for *Phloxes* and *Gladioli*. In addition to those previously mentioned Messrs. Hyde, Hope, Hobden, and Fowler were to the fore in the county classes. Open classes were also provided for

wreaths of white flowers, table decorations, bridal bouquets, &c., and prizes were also offered for the best tables laid for dessert. In these classes Mr. Chard, Floral Depot, Clapham Common, evinced decided superiority, taking first prize for the dessert table, most lightly and tastefully arranged, Mr. Miles being second; Messrs. Webber, Tonbridge, and Balchin also taking prizes in these classes, many charming designs being shown. A not unimportant feature were the open classes for table plants in or out of bloom, and in these Messrs. Balchin, Turner, Meachen, and Spottiswood were deserving prizetakers.

#### FRUIT.

Both in the open and county classes the fruit exhibits were on the whole good, Grapes in particular being excellent. There was, however, only one entry in the open class for twelve dishes of fruit, the first prize being a cup, value ten guineas, presented by the Directors of the London, Brighton, and South-Coast Railway Company. This was secured by Mr. Roberts, gardener, Gunnersbury Park, with Grapes, Pine Apples, Nectarines, Peaches, Plums, Figs, Melons, and others. For three bunches of Black Hamburgh Grapes the first prize fell to Mr. Inglis, gardener to T. Lister, Esq., Cuckfield, with large and well-coloured bunches, Mr. Ford being second, and Mr. Booth, gardener to W. Yates, Esq., Uckfield, third. The prizewinners in the corresponding class for county exhibitors being Messrs. Hotston, gardener to R. H. Penney, Esq., Dyke Road; Dixon, gardener to Sir S. M. Nelson, Fletching; and Meachen, the first-named securing premier honours with splendidly coloured bunches. Mr. Johnstone, The Gardens, Bayham Abbey, was awarded first prize for three bunches of white Muscats with large and well-ripened examples, Mr. Goldsmith, Kelsey Manor Gardens, being second, and Mr. Wells, Earlswood, third; Messrs. Chatfield, gardener to T. Holman, Esq., East Hoathly; Spottiswood, and Townshend being to the fore in the county class. Several entries were received for six bunches of black Grapes, Mr. Hotston being again first with splendid bunches, Mr. Warren, gardener to Mrs. Hankey, Balcombe Place, taking second prize, and Mr. Booth third. For six bunches of Muscats Messrs. Johnstone, Goldsmith, and Spottiswood took the prizes in the order named. An open class was also provided for a collection of Grapes, to comprise three bunches each of six varieties. For this the first prize was the Hotel-keepers' cup, value ten guineas, and it was easily won by Mr. Roberts with magnificent bunches of Black Hamburgh, Alnwick Seedling, Madresfield Court, Buckland Sweetwater, Muscat of Alexandria, and Foster's Seedling. Mr. Chatfield, with large but badly coloured bunches, was second, and Mr. Wells third.

Messrs. Waldir, gardener to D. Cornish, Esq., Burgess Hill; Balchin, Hyde, Staples, Mann, and Ford were prizewinners in the classes for Peaches and Nectarines, as were the two last-named exhibitors and Messrs. Booth, Miller, Hotston, Durrant, Smith, Stringer, and Johnstone for Apples and Pears. Plums and Green Gages were well shown by Messrs. Staples, Stringer, Holman, and Stephens. For Figs and Cherries Messrs. Stephens, Ford, Staples, Butler, Burtenshaw, and Gatehouse took the prizes. In the county classes Messrs. White, Waldir, Dixon, Fowler, and Ford were to the fore with Peaches and Nectarines; Messrs. Hotston, Dixon, Stephens, Townshend, Graveley, Ford, Deadman, Fowler, Hyde, and Mann with Apples and Pears; Messrs. Johnstone, Stephens, Burtenshaw, Holman, Ford, Butler, Fowler, and Plater with Plums, Green Gages, Figs, and Cherries; while for Tomatoes Messrs. Johnstone and Townshend secured the prizes.

Messrs. Balchin, Piper, Woolard, and others sent miscellaneous exhibits not for competition, these adding in no small degree to the success of the Show.

### STAMFORD SHOW.

SEPTEMBER 2ND.

This praiseworthy effort on the part of the managers and some persons interested in horticulture in the neighbourhood to revive the annual Flower Show at Stamford must be recorded, I fear, as a financial failure, although under the patronage of the Mayor (who kindly distributed the prizes), the Most Hon. the Marquis of Exeter, the Earls of Lindsey, Gainsborough, Rosslyn, and many others of the nobility and gentry in the district. The weather, as usual, was the cause of all the trouble. The day opened fine and promising, but about 2 p.m. heavy clouds came over the scene, and soon a heavy downpour of rain, which lasted until five o'clock, accompanied by very sharp lightning and thunder, caused what few people had then assembled to crowd into the tents, and kept those at home who would otherwise have come. The weather, however, was finer in time for the fireworks in the evening, which were well attended, and this partly compensated for the small amount taken at the gates in the afternoon. But, although a financial failure, it was not a failure as far as exhibitors are concerned, upwards of 500 entries being secured; but, still, more competition was expected, and was certainly desirable. Many of the exhibits which gained prizes would have stood a poor chance if this had been the case, so exhibitors will do well to make a note of this Show for another year, Stamford being in direct rail communication with all parts of the kingdom, as the three principal companies have stations there, and it is hoped this partial failure will not dishearten the Committee and Secretaries in their endeavours to provide a show next year, and we trust under favourable auspices.

**OPEN CLASSES.**—The principal prize on the schedule was for a miscellaneous collection of plants, which was won by Earl Lindsey; J. R. Lowe, Esq., being second; and A. Maples, Esq., third. Some fair specimens of *Coleus* were shown, the Earl of Lindsey being again first, J. R. Lowe, Esq., second; Miss Thompson, Stamford, being awarded an extra prize. Roses were scarce, but shown in splendid condition by Mr. J. House, nurseryman, Peterborough, who was the only exhibitor. Mr. House was also first for Dahlias in all three classes—viz., twenty-four double, twelve Fancy, and twelve single—the latter being an error on the part of the Judges; the second-prize box shown by Messrs. Brown of Stamford being far superior. Hollyhock were poor, but it is a treat to see them at all now-a-days. Mr. House was first again, and also the only exhibitor. A good stand of Zinnias came from Mr. Wilson, gardener to the Earl of Lindsey, who also obtained first prize for cut Pelargoniums. For hardy cut flowers there was more competition, and especially noticeable in one stand was the bright colour of *Senecio pulcher*. Mr. House, first; Messrs. W. & J. Brown, second; Earl of Lindsey, third. For hand bouquets there were



only four competitors, and all were too heavily made. Messrs. Brown, first; Mr. R. Gilbert, gardener to the Marquis of Exeter, second; Mr. House, third; a very pretty one from Mr. J. Richardson was highly commended. Ornamental vase of fruit and flowers—Mr. Wilson first, Messrs. Brown second. Both were very nicely done. The prizes for Sunflowers caused more competition, and some monsters were staged. Mrs. Lowe, Newstead, was first with a nice even collection; Mr. Duckett second.

Judging the Grapes must have been an easy task, Mr. R. Gilbert taking first honours for black with Gros Maroc, grand in bunch, berry, and bloom; second, E. C. Blackstone, Esq., with Black Hamburg. For white Grapes Mr. R. Gilbert was again first with Muscat of Alexandria, fine in bunch and berry, but requiring a little more time to finish; Mr. Wilson second with fair bunches, also not finished.

For Melons, green-fleshed, there were only two competitors. Mr. Ward was awarded first with a small fruit, partly decayed, and which appeared to be Victory of Bath. Mr. R. Gilbert was second with a much finer fruit of Eastnor Castle, but probably of inferior flavour. Scarlet-fleshed Melon.—First, W. H. D. Handley, Esq., with a small fruit of Read's Scarlet-flesh, said to have been grown outdoors with only a handlight over. It was of fine quality for a scarlet-flesh. Second, J. R. Lowe, Esq. (Mr. Wynn, gardener) with a larger fruit, but coarser.

For Apples in all three classes Mr. R. Gilbert was again first, and Mr. Wilson second, Mr. Gilbert showing nice dishes of Peasgood's Nonsuch, Kirke's Alexander, Golden Noble, Warner's King, Costard, &c., and some very fine Ribston Pippins, the latter taking first honours for a single dish of a dessert variety, and the same exhibitors secured the prizes for Pears and Plums, no one appearing against them.

For collection of vegetables it need scarcely be said Mr. R. Gilbert was first with an excellent collection of ten varieties; Mr. Hayes second with a very nice lot. The prizes for a collection of Potatoes did not cause much competition, Mr. Wilson, gardener to the Earl of Lindsey, being first. One would naturally expect to have seen more Potatoes shown on the borders of a great Potato-growing neighbourhood. Second, Mr. Mann; third, Mr. Barnett. Only one exhibitor for four kinds of Peas, Mr. R. Gilbert, who had good dishes of Omega, Goldfinder, a new variety of Laxton's, and G. F. Wilson.

Division B was for amateurs, &c., within ten miles of Stamford. The principal prizetakers here were D. J. Evans, Esq.; J. R. Lowe, Esq.; and J. Richardson, Esq. Mr. Evans showed a finely grown specimen of *Odontoglossum grande* not for competition. In divisions C and D, for amateurs and cottagers, a much more spirited competition took place, and the exhibits of vegetables were of very good quality indeed. Evidently the cottagers have not forgotten what they learnt at former shows. Some of the exhibits, had they been in the open class, would have caused a little alteration in the prize list.

Prizes were also awarded for bee-driving, honey, bees, and appliances, Messrs. W. & T. Sells and J. Gilbert being the principal prizetakers.

Among things exhibited not for competition a collection of Apples and some young standard Apple trees, Barnack Beauty, lifted from the ground literally full of fruit, shown by Messrs. W. & J. Brown, deserve especial mention.—Nemo.

## ROYAL HORTICULTURAL SOCIETY.

SEPTEMBER 9TH.

VERY gay indeed was the conservatory with Dahlias, Gladioli, Roses, and herbaceous plants, the former especially, which were staged in great numbers, while a few good new plants were submitted to and honoured by the Floral Committee. Only a comparatively small quantity of fruit was sent for examination.

**FRUIT COMMITTEE.**—John Lee, Esq., in the chair. Mr. A. Holmes of Aldershot sent a Plum under the name of Fox Hill Plum, which has a strong resemblance to Autumn Compôte, and not unlike Victoria; but the Committee considered it was too much like existing varieties to merit a special notice. Mr. Burnet, The Gardens, Deepdene, exhibited an Apple under the name of James Dewdney, which was Greenup's Pippin, and Councillor. Mr. George Bunyard of Maidstone exhibited an Apple called Jacob's Strawberry, grown by William Jacob of Petworth, a very beautiful early Apple with a fine fragrance and flavour. It was awarded a first-class certificate. It is in use from early in August till October, and is very prolific. Mr. Roberts, gardener to R. H. Alexander, Esq., Gifford House, Roehampton, sent two good variegated Pine Apples in fruit, to which a letter of thanks was awarded. Messrs. Paul & Son of Cheshunt exhibited a large collection of Apples, as did also Messrs. Cheal & Sons of Crawley, to each of which a bronze medal was awarded.

Mr. T. Bowie, Chillingham Gardens, Belford, sent fruit of a Red Currant called New Defiance, which was considered identical with Haughton Castle. Mr. R. Gilbert of Barghley Gardens sent an Apple called Barnack Pride, which was passed. He also sent a Celery called Gilbert's Selected Early, which was considered identical with the old *Celeri blanc hâtif*; also a Melon named Zamcha, a fruit of large size, weighing 11½ lbs., but of no quality or flavour. Mr. C. Ross of Welford Park sent a seedling Melon, which was unripe, and not so good as Scarlet Gem. Mr. Sparrow, gardener, Barrow-on-the-Hill, Chertsey, sent a seedling Melon which was very much over-ripe. Messrs. George and Maher sent seedling Melons, which were passed.

**FLORAL COMMITTEE.**—G. F. Wilson, Esq., F.R.S., in the chair. A few plants of undoubted merit were examined by the Committee and honoured with first-class certificates, as they deserved; these demand primary notice.

*Nephrolepis Bausei* (Veitch).—A most distinct and beautiful variety, with bright shining green fronds 15 inches long, slightly recurved, with much-divided pinnæ. No doubt as the plants attain age they will increase in size, but whether they do or not this new Fern is a distinct acquisition. It was presumably raised by Mr. F. Bause.

*Amasonia punicea* (Veitch).—A highly distinct stove plant with dark green leaves 8 inches long and 2 inches wide, with terminal flower spikes bearing creamy white Habrothamnus-like flowers surmounted by crimson scarlet floral bracts 1 to 2 inches long and half that in width. These bracts are said to retain their colour for three months, and the plants flower in quite a small state. A plant apparently of easy growth and of great decorative value.

*Begonia Madame Crousse* (Cannell—Bealby).—Flowers large, with broad smooth creamy buff petals. Distinct and fine.

*Begonia Octavie* (Cannell).—Pure ivory-white, with smooth, flat, imbricated petals. Very attractive and floriferous. It is quite dissimilar from all others and likely to become popular.

*Amaryllis Mrs. M. Lee* (B. S. Williams).—This shows very decidedly the parentage of *Hippeastrum reticulatum*, the leaves having a greenish white stripe down the centre; the flowers, five on the stem, being rose, marbled and banded with white. Plant a strong grower, and said to be perpetual-flowering, hence must be useful for decorative purposes.

*Aerides Laurenceana* (Baron Schröder).—Flowers of great size and massive, ivory white; sepals tipped with purplish mauve. Very striking.

Amongst the flowers similarly honoured were the following Dahlias and Gladioli:—

*Dahlias General Gordon, Mrs. Langtry, and Falcon* (Keynes).—The two former described in our report of the Crystal Palace Show; the latter a medium-sized flower, rose, suffused with a satiny pink sheen. Distinct and pleasing.

*Dahlia Formosa* (Cheales).—A magnificent variety as a single Dahlia must be sure to win their honours. Flowers of faultless form; petals stout, and colour dazzling orange-scarlet.

*Gladiolus Wm. Kelway* (Kelway).—Scarlet, flaked crimson, with a dark velvety blotch on the lower segments.

*Sir Francis Bolton* (Kelway).—Soft scarlet barred with purplish crimson; fine flowers and truss.

The following plants and flowers were also under examination:—

From Sir N. M. Rothschild, Tring Park (Mr. Hill, gardener), came a small admirably grown plant of *Cattleya gigas* with a truss of four splendid flowers, and a cultural commendation was awarded. Messrs. Cannell staged a collection of cut flowers of double Tuberous Begonias, remarkable by the size of some and the colours of others; also a plant of the single variety Total Eclipse, yet glaringly visible by its large flowers and exceedingly rich crimson-scarlet colour, said to be the richest in cultivation. A vote of thanks was awarded. Messrs. Veitch & Sons exhibited *Piper. ornatum*, with bright green Pear-shaped leaves, mottled as if covered with network; also *Rhododendron Souvenir de J. H. Mangles*, a bronzy buff greenhouse form, very attractive; the remarkable *Amasonia punicea*, and *Nephrolepis Bausei* described above. Mr. Allan, gardener to Lord Suffield, Gunton Park, exhibited some fine sprays of *Lapageria*, for which a cultural commendation was awarded. Mr. J. Tibbles, Harlesden Park Nursery, Willesden, staged trusses of a white seedling *Pelargonium Queen of England*, the eight or nine small flowers in each truss rendering it valuable for bouquets. A vote of thanks was accorded. Messrs. Carter and Co., High Holborn, staged *Croton Bealei*, a bold well-coloured plant, something similar to but with much larger leaves than *Queen Victoria*. Mr. G. F. Wilson brought *Lilium speciosum rubrum*, grown in the open ground to show its brilliant colour. Brilliant, indeed, it was, and merited the vote of thanks awarded. Mr. Thompson, Ipswich, showed *Pentstemon vibrosus*, a new Californian species, with small bugle-like scarlet flowers. The New Plant and Bulb Company, Colchester, sent *Montbretia crocosmæflora*, bunches of sprays covered with orange-coloured flowers; and Mr. King exhibited two seedling *Crotons*, remarkable by the great size of the foliage.

**Miscellaneous Exhibits.**—Mr. Charles Turner's exhibition of Dahlias was worthy of Slough. He had fifteen stands of magnificent examples of Show and Fancy varieties, five stands of single Dahlias in bunches of ten flowers producing a brilliant effect, and four stands of the charmingly compact and diversified Pompons. This rich array, with a background of Palms and Lilliums, had quite an imposing effect. Messrs. Keynes, Williams & Co. had twelve boxes of Show and Fancy blooms, the best varieties being admirably represented, the other types being also included in the collection. Messrs. Cannell & Son had twelve stands of Show and Fancy varieties, the largest blooms in the conservatory; thirty varieties of single Dahlias in great flowering bunches, an excellent selection of Pompons, fine stands of the white Decorative variety Constance, highly attractive; while the dazzling *Picta formosissima*, *Glare of the Garden*, *Cochineal*, and *Prince Imperial* were represented, while the almost black-and-white *Mrs. Miller* imparted richness to the group. Messrs. Cheal & Sons had seven boxes; Shows, Fancies, Pompons, Cactus, and single forms being represented, the latter being especially fine and rich in colour. Mr. T. S. Ware had a splendid assortment of single Dahlias in sixty varieties, with the free and brilliant Decorative varieties General Gordon, Constance, *Cochineal*, and several others; and Messrs. Rawlings had six stands of Show and Fancy blooms, including several promising new varieties. Other flowers besides Dahlias contributed to the general effect of the building. Messrs. Kelway & Son had a grand collection of nearly 200 spikes of Gladioli, which were strikingly effective. Messrs. Paul & Son, Waltham Cross, had ten boxes of Roses, including hundreds of beautiful blooms, with half a dozen effective stands of hardy herbaceous plants—*Liliums*, *Gaillardia grandiflora*, Gladioli, the brilliant *Lobelia speciosa*, *Tritomas*, and various others, with good trusses of *Hydrangea paniculata* variegata. Messrs. Paul & Son, Cheshunt, exhibited boxes of the extremely dark Tea Rose *Souvenir de Thérèse Levet*, reddish pink; and the Decorative H.P. *Grandeur of Cheshunt*, an attractive bright crimson Rose.

Silver-gilt medals were awarded to Messrs. Cannell, Kelway, W. Paul and Son, and Turner; bronze medals to Messrs. Cheal, Keynes, Rawlings, and Ware for their meritorious contributions.



## KITCHEN GARDEN.

SEPTEMBER is not one of the busiest months in the vegetable garden, and if our previous remarks have been worked up to by our readers, as



they have been by our men, there will be no pressing work here at present; but garden operations are never ended, and although we may not be overwhelmed with work just now, there are many little details which we never cease to attend to. Amongst these we would mention

**Planting Cabbages.**—It is now the main batch of the autumn-sown stock ought to be planted out. We generally plant after our spring Onions, and lately we have been pulling up the latter, hoeing and raking the surface of the ground, and then dibbling in the Cabbage 18 inches apart each way. The Onion ground having been well manured in spring no more is added now.

**Potatoes.**—The majority of the stems of these have quite died down, and as they gain no advantage through being left in the soil afterwards, we shall continue digging up our crops as the weather admits. No digging should be done when it is wet overhead or damp under foot, but every advantage should be taken of fine days to secure the tubers. Carefully exclude all those diseased, and handle the good ones carefully, as a really good Potato is the king of vegetables.

**Spinach.**—Winter crops of this are now well through the soil, and the plants should be thinned to at least 6 inches apart, as they are both hardier and produce much finer leaves when thinned than when grown in a close mass.

**Radishes.**—Many winter crops of these are spoiled through close sowing in the first place and neglect in thinning afterwards, but if they are taken in hand when about an inch high, and the plants singled out to 3 inches apart, the result will be an excellent crop.

**Parsley.**—All plantations should be examined and have all leaves which are not fresh and green removed. In many cases when this is done there will be few large leaves left, but if there are plenty of young ones these will soon spring up and afford a very useful winter supply. We prefer a thin row of fresh young leaves to a bushy one of old foliage at the beginning of winter.

**Celery.**—Much of this will now require earthing-up, but take off all small side leaves before applying the earth, then tie the large ones together, put the soil near them with the spade, and finally press it round them with the hands. Do not begin to earth very late crops yet, but finish the early ones, as Celery is now coming into season.

**Carrots.**—Thin out the early Horns sown a few weeks ago to 3 inches apart, then hoe between the rows, and delicious little roots will be formed before November.

**Onions.**—Pull up all spring-sown crops and spread them out to dry before storing. Those having green stems when drawn should have these twisted round to stop further growth. When they are quite dry we brush the rough of the stems off, but we do not attempt to thoroughly clean the bulbs, leaving that to be done on wet days.

**Peas and Beans.**—Many of these are now over, and the old straw may be cleared off as soon as convenient. Save and store the best of the Pea stakes, as they will do for mixing in with new ones next season. Where birds are destroying the pods on good rows of late Peas they should be netted to preserve them.

**Herbs.**—Cooks should now have large quantities of these to dry for the winter. Kidney Beans should be gathered and salted for winter use. Turnips should be thinned, all ripe Tomatoes cut, and any kind of ripe seed taken under cover.

#### FRUIT-FORCING.

**MELONS.**—Late plants on which the fruit is swelling will need liberal treatment. Overcropping is the greatest drawback to size and quality, therefore thin the fruits to three or four on a plant according to their vigour, and feed liberally with liquid manure, giving thorough supplies when needed, but only then, as over-watering is a great evil. The house must be damped in the morning and afternoon, closing early with a temperature of 90° from sun heat. The day temperature with sun may be 80° to 85°, and 70° to 75° artificially, night temperature 70°, falling through the night to 65° by morning. Place supports to the fruit in good time. Keep the growths rather closely stopped and well thinned out, so as to expose the principal foliage and the fruit to the sun. Plants ripening their fruit should have a circulation of dry warm air, and kept rather dry at the roots, yet not so as to cause the foliage to flag.

**Melons in Unheated Pits and Frames.**—The exceptionally fine weather has been very conducive to the swelling and ripening of the late crops. Water must now be used sparingly, but should the necessity arise for its application let it be given in the early part of a fine day without wetting the foliage more than can be helped, and admit air freely so as to dry up superfluous moisture before closing time. Close early with plenty of sun heat, and ventilate again about an inch or so at the back before night, especially in dull weather. Keep the growths well thinned out, and expose the fruit well to the sun, stopping closely. If canker appears on the stems rub quicklime well into the affected parts.

**CUCUMBERS.**—The treatment of plants recently planted must, in a great measure, be regulated in accordance with the time they are expected to produce fruit. If a supply of fruit be wanted as soon as possible, early stopping must be practised, or at the second or third wire of the trellis, which will result in fruit-producing shoots; but in most establishments the object is to get the fruit in time only to succeed those grown in frames, in which case the plants should not be stopped until they have reached two-thirds the width of the trellis, and all the young fruits as well as male blossoms removed as they show, in which case they will break regularly from every joint, and the laterals may nearly be allowed to meet before they are stopped. This concentrates all the energies into the development of wood and foliage, so that the plants at a given period are capable of producing and sustaining a succession of

fruit during the winter and early spring months. Water somewhat sparingly at the roots until the plants have become well established, with plenty of active feeders permeating the soil in all directions. Keep the night temperature at 70°, falling to 65° or 60° on cold nights by morning, 70° to 75° by day from artificial heat, and 10° to 15° more from sun. Ventilate early and liberally on all favourable occasions, but avoid drying currents, the object being to secure a sturdy well-solidified growth, which is not only the most healthful but the most fruitful.

**PINES.**—Plants of Queens and other kinds which are intended to give a supply of ripe fruit about next May or June should by this time have developed a good sturdy growth, and have quite filled their pots with roots. In this state it is necessary to pay the utmost attention to the watering, so as to maintain unimpaired the vigorous habit which they have acquired. In doing this it must be borne in mind that since the soil has become permeated with roots, that much of its qualities must have been taken up. To make up for this loss it will be therefore necessary to administer stimulants, than which none answers better than genuine guano, 1 lb. to 20 gallons of water, which should be used clear and in a tepid state. The maturation of the plants will be assisted by a liberal supply of air whenever sunshine and heat prevail to an extent to admit of its being afforded, and do not keep the atmosphere of the house too densely charged with moisture. Syringing the plants, however, should be continued two or three times a week during dry or very fine weather, less at other times, as may be ascertained by an examination of the axils of the leaves, which should not be allowed to remain dry. No suckers should be allowed to remain on these plants until the fruit makes its appearance, when one, or at most two, may be left for perpetuating the stock.

Successional plants, which are not so much advanced in growth, and are required to fruit subsequently to the preceding, should have every encouragement during the current month to make growth, as sun heat is generally available and effective. Use no fire heat at all to these plants unless the temperature falls below 60° at night, and be careful to utilise sun heat at the time of closing the house in the afternoon. This should be done so as to enclose a heat of 90° to 95°, affording at the same time the customary moisture which is needed to produce vigorous growth.

Fruiting plants should have as much sun heat as possible, closing early so as to secure a temperature of 90° to 95°, sprinkling the floors or plants according to the condition of the fruit to secure a genial condition of the atmosphere. The night temperature should be maintained at 70° to 75°, 10° to 15° more through the day from sun heat. Excepting in the case of plants with fruit near to the glass shading should now be discontinued.

#### PLANT HOUSES.

**Azaleas.**—Plants that have set their flower buds and need tying or training should be attended to without further delay. This operation is often unduly delayed and looked upon as winter work when very little else can be done. This is a mistake, for when tying is done late in the season the foliage never turns again to the light. In addition to this many of the flower buds point inwards instead of outwards, which is obviously undesirable. If the tying is done at once the flowers and foliage have ample time to turn out naturally, and the plants have a neat finished appearance during the winter whether they are in flower or not. Before they are tied examine them carefully, and if any thrips exist upon them it must be eradicated by washing the plants with a solution previously recommended. If these insects are allowed to remain upon the plants they give endless trouble and annoyance when introduced into heat. Plants that have been in their pots for a number of years should not be neglected as regards feeding now that their buds are swelling. It is surprising how greatly two or three applications of artificial manure to the surface at intervals of a few weeks assist them in developing their buds and retaining the foliage during the winter months. Judicious care is needed in watering. If showery weather or heavy rains continue provision must be made for housing the plants, as it is much better to do this a little earlier in the season than allow them to become saturated before being taken indoors. Those required for very early flowering will be better indoors, for their buds will swell more rapidly under glass than outside after this date.

**Camellias.**—All permanent plants indoors should now be examined and cleaned if they need it. If work of this description is delayed too long there is the danger of destroying many of the flower buds. In smoky neighbourhoods, even if the plants are perfectly free from scale and other insects, it is a good plan to wash them with petroleum at the rate of 1 oz. to a gallon and a half of water. This if syringed upon every portion of the plants thoroughly in the manner advised many times in these pages, it will not do the slightest injury, but will loosen the soot that may have become deposited on the leaves and branches. The day following this operation the plants should be forcibly syringed. This will remove all the refuse, and the foliage will have a bright glossy appearance. When the plants are shaded from the sun after the oil has been used, instead of proving in any way injurious, it is as good as an application of artificial manure to the plants. Any shading material that may have been used to protect the plants from strong sun during the summer should now be gradually removed. Syringing once or twice daily should still be persisted in, and the supply of water to the roots should be liberal. Feeding if needed should also be attended to from time to time if the soil is poor or exhausted, for in no stage do Camellias need assistance more than when the flower buds are swelling. Plants that have been standing outside may be housed, but the greatest care must be taken that they receive no check by removing them indoors, or the buds may fall.



*Callas* that may have been planted out and have made good growth may now be taken up and repotted. It is much better to lift them early, so that they have time to become established before it is necessary to house them. When potting as many roots as possible should be preserved, according to the size of pots they are to be placed in. No injury to the plants will result if the whole of the soil is shaken from amongst the roots as long as a good number of the latter be retained. These plants do not require very large pots in which to grow them to perfection. In potting, drain the pots by placing one or two large crocks at the base, which will be ample. The soil should consist of good loam with one-seventh of manure added, and unless the former is of a very heavy nature no sand will be needed. Directly potting is completed a good soaking of water should be given, and the soil and foliage kept moist until fresh root-action commences. The best position for them is on the north side of a wall where the sun will not reach them. If lifted at once they will be thoroughly established before it is necessary to house them.

*Bourardias* that have been planted out should also be lifted and repotted. Care must be taken to secure a good ball of soil attached to the roots, or the plants will not become established so easily or so quickly in their pots as the *Callas*. It is a great mistake to defer the work in question until the end of the month, for root-action is then less active and the plants are nearly double the length of time becoming established in their pots. If potted now they will establish themselves as well behind a north wall as if placed in a cold frame and kept close and shaded. When lifting is left until the end of the month a frame becomes necessary, especially in localities where early frosts are the rule. The same compost advised for *Callas* will suit these plants.

## THE BEE-KEEPER.

### BEE-KEEPING FOR THE BEGINNER.

#### GLIMPSES INSIDE THE HIVE.

It matters very little in what a man professes to teach, he is often beset with queries from novices on matters difficult to explain without going into the rudiments of the science, and even after that labour he may fail to give a satisfactory explanation. The different opinions on bees and bee culture by professed apiculturists increase the queries and make them more difficult to explain. For some time past I have been flooded with queries, which with the strength and time at my disposal I have been unable to answer. I hope, therefore, that this article will be a sufficient apology, and that they will find in it and subsequent ones the desired information. I will explain the most humane and profitable management of bees, leaving the scientific nits difficult to crack to persons, of which there are plenty, both able and willing to perform the task. When a grain of Mustard seed is deposited in the earth there is nothing particularly striking about it, but in a short time, under the influence of the sun, it bursts into leaf, branch, and flowers. The plants and the flowers are next flourishing, providing for the bees sweet nectar and pollen. This is a great change from simple seed, but a greater and still more wonderful change will be made by the bees. In a few hours the whole virtues of the flowers will appear in the beautiful, white, and mathematically built semi-transparent combs. The bee, a laboratory complete, can voluntarily change the honey into wax or store it into the perfect mechanically built cells, which will in a few days contain both sealed honey and young bees. The heat necessary for their existence will be generated in the bees by the same material through a combined chemical and mechanical process, perfected through the concentration of the bees, thus conserving the heat so necessary in comb-building, rearing the young, and the storing and safe keeping of the honey.

Leaving these wonderful things to be still further investigated by the intending bee-keeper, let us now explain what I have just been witnessing inside an observatory hive. Among the first things observable after they have been transferred to the unicomb hive is to gradually concentrate themselves, and often, though reluctantly, leave their brood when too widely extended. If honey is to be had they secrete wax and commence to build combs transverse to the unicomb. While this is going on others will be at work collecting pollen and honey, while the queen will be busy depositing the eggs in prepared cells, fastening each egg to the base of the cell. This is her whole duty, but it is a laborious one. She is paid great deference and receives court by the workers, but beyond that no other assistance is rendered. The queen does not interfere in the internal economy of the hive. She has no favourites, and all bees are courtiers alike. She lays eggs only where the bees have had the cells previously prepared. This is a lesson that the brood nest should be so large that the bees will not require to shorten and thicken the edges of the combs in supers, as where that is done the queen will attempt an entrance. Move as the queen will, the bees retreat before her. The same thing is noticed in bees which are playing the part of hair-dresser. While one bee is being carried with outspread wings another

approaches, and when within an inch or so spreads its wings, and immediately the dresser leaves its charge and attends to the wants and wishes of another, and so on. This same sense or feeling seems to extend to the bees in the other work of the hive, for no sooner do we see a bee leave the cradle of the young queen than another bee from an opposite direction takes its place, and so it is all through the different workings. The building of the comb receives the same attention, while the secreters of the wax and the manner in which the bees convey the scales either from their own or neighbours' wax pockets is indeed surprising, while the transferring and kneading and storing of pollen is equally so.

The combs of the hive I have been looking into are nearly empty. There is very little honey in them, but the day is warm and the bees are busy collecting outside and storing it in the uppermost combs—not, as some tell us, in the lower cells first—to be again carried up at night, but right from the fields to the upper granary at the first. Bees know how to economise labour just as well as they know where and how to store their honey for preservation and safety. This instinct of the bee should be encouraged and not thwarted, and the hive made in accordance to its nature and wishes.

In leaving the observatory hive and taking a peep at another with an equal number of bees, but in a Stewarton hive, I find these have stored far more honey and consumed less in a certain time than the bees in the observatory hive, from which much is to be learned; for though not profitable it is still advisable to have one for the purpose of acquiring a perfect knowledge how bees should be managed and giving an insight into the deeper mysteries in connection with them. As it is now mid-harvest at the Heather and the last week of the honey season of 1884, and as some of the hives are heavy and strong in bees, they will require careful handling at the home-bringing. One thing essential is ventilation both above and below, and as all are tiered with supers there can be no inverting of the hives. I will simply ventilate well and place them on the waggon if the springs are stiff. The hives should be corded, firm, and placed so that the combs will not receive any jarring on the broad side, but on the ends. The proper position to place them, however, can only be learned on having a thorough knowledge of the vehicle and the road to be traversed. With a very light spring, a smooth road, and steady horse the combs placed parallel to the axle will travel comparatively safe, but if these properties are wanting it will perhaps be found as safe to place them otherwise. When upon the railway it is different. They should always be placed so that the combs are at right angles to the axle, and if possible with a cushion of hay between each hive. Another week I will explain more facts of bees and their doings at the Heather; meanwhile I may give one illustration of what bees can do when properly managed.

On the morning of the 20th ult. I examined a hive with a cover of nine 4-lb. supers all empty. At four o'clock the same afternoon I found the bees had taken possession, and on the morning of Monday the 25th found all the supers filled with comb and honey, six of them being sealed. This is perhaps as great a feat as ever was performed by an old stock that has swarmed twice during the year, besides undergoing the decimation of bees through a week's campaign at Edinburgh Show, where it obtained the first prize as the best hive stocked with bees and their queen. This is also the hive I mentioned before as being a cross between Cyprians, Ligurians, and Carniolians, but it is not the only one that has made an extraordinary weight, particulars of which I will give.—A LANARKSHIRE BEE-KEEPER.

#### QUEENLESS HIVES.

As this is a subject of such vast importance to the bee-keeper, I naturally read the "Lanarkshire Bee-keeper's" remarks on the topic. It has often bothered me; and as finding the queen to beginners and occasionally to old hands is like "looking for a needle in a bundle of hay," I was charmed to find "a sure sign of the want of a queen, &c., &c." "Here we have it," said I to myself, "this is just what I have always been seeking for," and I prepared myself for the easy and direct road to knowledge. I read on anxiously, but my hopes of understanding the "sure sign" fell as I found that it was "when bees are observed to crowd and loiter at the entrance." Well, I am thick in the clear, but I have marked hives where this appeared to be the performance that was going on. The entrance might have been the e-planade of a fashionable watering place, and yet when examined, these hives have been found all right and have done well. I recollect asking one of our large bee-masters as to his guide in this important matter, but although he appeared to allow this peripatetic tendency of the bees at the entrance when queenless, his reply was, "Examine the hive." The way, he said, he should satisfy himself was to take an empty hive, place it propped up on a sheet or large piece of white paper, and taking each bar separately shake off or brush off the bees a foot from the hive, and patiently watch for her majesty, as they run to the hive. This entails a great amount of trouble, in all probability a fair amount of stings to the novice, and it is possible that the beginner, if he essay the trial, may miss the queen. It is curious how easy this is.

Now in Sir J. Lubbock's book on "Ants, Wasps, and Bees," he speaks of marking the two latter with paint, I think. Would it be injurious,



say, to paint her majesty with white paint on the upper surface of the abdomen? Would the bees speedily remove this? Certainly, it would be a great help to bee-keepers to have a queen bearing some distinctive mark, seen at a glance. How, comparatively easy is it to see a black queen at the head of a Ligurian stock, or *vice versa*.

The other sign is that to the ear placed close to the hive—"an irregular and disconsolate hum is heard." Here again would be a help if one could appreciate it, but I cannot. To some people, I fancy, this is an understood sign. One of my daughters, very unmusical, always remarked when helping me with my bees, that the sound of their hum was different when the queen was absent, and she described it as "discontented." She also thought them more spiteful when queenless. But this latter idea is a very variable symptom in hives; some are so much more easily manipulated without retaliation than others, that it cannot much be taken into account. As far as my small experience goes, it rather agrees as to pollen-carrying with "A Lanarkshire Bee-keeper." As it is, I still sigh for some easy clue to this mystery, and suppose I shall sigh on.

A few days since, I gave in the evening, to a hive in my dwelling house, a bar from which the honey had been extracted. I placed it as I have done before, behind a queen-excluder, and the same bees had already cleared some sections just commenced; yet on the introduction of this bar, though nearly dusk, the bees were in a state of great excitement, dashing wildly about in front of the hive, as if robbing was going on, and the glass passage was tenanted at ten o'clock at night, although the night was cold. Next morning the excitement had subsided. Considering that for some days these bees had been emptying cells in the rear of the hive, why should a fresh bar have provoked such excitement? Is there any better plan of clearing out bars that you intend to stow away? I fancy Mr. Abbott suggested this plan in the *Bee-keeper's Journal*.

This same hive was in the early months a source of anxiety. Did I just escape foul brood with it? I had been enlarging brood nest, when, alas! cold May, instead of "charming May," was on us. Large quantities of sealed brood died. Later on numbers of sealed cells had a small hole in the cap, then many had no attempt at sealing, but a brownish gluey-looking mass occupied the cell; the hive got small by degrees, and was certainly becoming anything but "beautifully less." I made up my mind to sacrifice combs, brood and honey. I got a fresh hive with furnished bars, sprayed every comb of the old hive with salicylic acid syrup, and then brushed them off into their new abode; all the bees were well sprayed. The hive has recovered itself and is now much stronger, the queen still laying. There were six bars of "combination" size, Abbott's, yet when the extracted wax was looked for, there was scarcely a couple of ounces! Is this any proof of foul brood? Did I escape the infliction?

All this happened before Mr. Cheshire's experiments were published; henceforth we may hope that foul brood will be completely under control without such destruction of hopes as in my case.—Y. B. A. Z.

#### BEES—OBJECT LESSONS.

I AM anxious to have a few bees, which I think will pay very well here, as we have a good deal of heath about, but being quite a stranger to them I am at a loss to know how to begin. I have read much about bees in the *Journal*, and the different parts of hives, but have not met with any one to explain them to me. There are a few persons about here who keep bees in the common straw hive, and know nothing of other kinds of hives.

Can you tell me of anyone living within a reasonable distance from Sevenoaks that I could make acquaintance with, and who would explain things to me? After reading what has been written in the *Journal* I have made up my mind to have the Stewarton hive with the Ligurian bee, and all I now want is someone to explain the hives to me, and show me their management; then with the help of the *Journal* I think I shall be on a good footing.—R. C., *Elaneswood, Sevenoaks, Kent*.

[We print this letter with the object of enabling any bee-keeper in the district in question willing to give the lessons required, which also can be obtained at bee shows for 6d. Mr. Neighbour's address is 149, Regent Street, London, W.]

**HONEY FAIRS.**—These are not quite so universal as flower shows, but there is no reason why they should not be quite as successful, and, indeed, more so, than the majority of our shows. The first annual honey fair of the Herefordshire Bee-keepers' Association, which took place on 3rd inst., proved a great success. About two tons of honey were exhibited, the prices ranging from 1s. to 1s. 6d. a pound, and we wish it every future success.

#### TRADE CATALOGUES RECEIVED.

Thomas S. Ware, Hale Farm Nurseries, Tottenham.—*Catalogue of Bulbs, Dahlias, and Lilies.*

John Matthews, Weston-super-Mare.—*Illustrated Catalogue of Pottery.*  
Barr & Son, 12, King Street, Covent Garden.—*Descriptive Catalogue of Bulbs and Plants.*

Dammann & Co., Portici, Naples.—*Trade Catalogue of Garden and Farm Seeds.*

Louis Van Houtte, Royal Nurseries, Ghent, Belgium.—*Catalogue of Azaleas, Camellias, and Hardwooded Plants.*

Charles Turner, Royal Nurseries, Slough.—*Catalogue of Hyacinths and other Bulbs.*



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**The "Fruit Manual" (Rev. W. C.).**—It is nine years since the last edition of the "Fruit Manual" was published, and it has long since been out of print. A new edition will be ready in the course of a month.

**Peas—The "Fruit Manual" (Colville Browne).**—We grew the Peas and consider the variety an excellent one—sturdy, productive, free from mildew, and the peas of excellent quality. It resembles Laxton's Omega more closely than any other, and we suspect that is what it is, though we had not the opportunity of testing them side by side. The new edition of the "Fruit Manual" is in an advanced state, and we hope will be published next month. We are not able to state when the report of the Apple Congress will be published, but it is in course of preparation.

**Seedling Dahlia (M. C.).**—The colour of the flower is very rich, but not richer than many others that were exhibited at the Crystal Palace last week; and although the variety is worth preserving, we suspect it is of little or no commercial value.

**Bitter Melons (W. B. H.).**—If the foliage of the plants remained fresh and green until the Melons were cut we can only attribute the bitterness of the fruit to a deficiency of heat, bottom heat especially, or to the variety being inferior. If there was red spider or other insects on the leaves, or if shrivelled prematurely by scorching or insufficient water at the roots, then only ill-flavoured or bitter fruit could be expected. No doubt the fruit was ripe when you cut it, perhaps over-ripe; it ought not to have been very soft at the end.

**Pruning Climbing Roses (A. M. B.).**—Tea, and other Roses having the shelter of walls, may be pruned and trained immediately after the last Rose of autumn is faded and gone, as you appear specially to wish this for the sake of neatness. We prefer to wait a little, for in a mild autumn we have often been rewarded for our patience with many a lovely bud and blossom coming after the regular autumn bloom has long been at an end. Late pruning in February or March is really only necessary for Roses fully exposed to frost and cold winds.

**Bulbs in Rose Beds (Idem).**—If you require Roses for exhibition plant no bulbs or other flowers among them; but if you are content with plenty of ordinary garden Roses, bulbs of all kinds, except Lilies, will do them no material harm. If, subsequently, the Roses, by weakly growth and sickly foliage, show poverty of soil, take up the bulbs, give a liberal dressing of farmyard manure, work it well into the soil, and at once replant the bulbs.

**Crimson Campanula (Amateur).**—We have never heard of nor have we seen any Alpine Campanula which by any stretch of imagination has anything approaching crimson flowers, and we have also good reasons for believing that its origin is due to the "work of fiction" to which you allude, since the authors of such works invariably have a very extensive and inventive imagination, the one in the present instance certainly being troubled with colour-blindness. There are rose-coloured forms of Campanula Medium, which are the Canterbury Bells, both single and double. These are hardy biennials. Besides these we only call to mind one other species, and that a hardy annual, which has reddish purple flowers. Perhaps this is Campanula attica, a recent introduction, and a miniature of Venus' Looking-glass, though not allied to that plant.

**German Moss Litter (E. F.).**—Taken hulk for bulk as it comes from the stable it is of greater value than straw litter; the manner in which it is compressed into bales for packing closely shows this. Saturated with urine, and mixed with horse droppings, it is a powerful manure ready for immediate use when taken from the stable, and should be applied to the land at once. To throw it into a heap induces heating, during which ammoniacal gas is generated. Much of it escapes from the heap, and so the very essence of its fertility is lost, and when it cannot be used immediately it may be advantageously mixed with straw litter; or if put in a heap unmixed it should be covered with 3 or 4 inches of soil or wood ashes, to absorb and retain the rich gases which would otherwise be lost. It has been proved admirably adapted for the growth of Mushrooms, and we have seen very productive beds made with this material.

**Tuberous Begonias (Irish Subscriber).**—The seed to which you refer as having sown should have germinated before now; but it requires very great care in watering to germinate at all. Young seedlings appearing now would need a stove to keep them growing, as there is not time for them to form tubers for resting through the winter. The plants require re-potting as soon as the pots in which they are established are fairly filled with roots, as if they get too much root-bound before being shifted they seldom grow freely. A mixture of loam and peat, with sand, in their early stages



is suitable; as they get stronger the peat may be substituted by very sweet much-decayed manure. The resting tubers may be started in a cool stove in the spring, and in the summer the plants may be grown in a pit, frame, or greenhouse. Further details of culture will be given in a future issue.

**Cucumber Stems Splitting (Fred).**—We do not consider the insects the cause of the evil, but after the stems divided they would probably decay the more quickly by being infested in the manner described. Have your plants had sufficient heat, bottom heat especially? We suspect not, and we also think they have had soil too rich and too light. In that case the leaves would not be able to elaborate the sap that was supplied, and a rupturing of the tissue would occur. Still by all means exterminate the insects if possible by clearing everything out of the house and syringing every part well with petroleum. Syringing with a mixture of soft-soap and petroleum now at the strength of half a wineglassful of the oil to a gallon of soapy water would not, we think, injure the plants if the syringing were done towards evening, shading the next day if sunny; but the oil must be well incorporated in the soapy water by violent agitation. Try the effect on a plant or a portion of a plant at first, and act accordingly.

**Exhibiting—Definition of Terms (Wm. H. Pigott).**—The judges that awarded the prize to your collection of plants, consisting of a Brugmansia, Abutilon, Zonal Pelargonium, and three Begonias, "totally distinct varieties," in a class "for the best collection of plants in flower in pots, six varieties," acted in strict conformity with the terms of the schedule. Had the terms "distinct species" or six "kinds or genera" of plants been employed in the schedule the case would have been different. Suppose you exhibited in a class of "three Begonias, distinct varieties," say Vesuvius, Monarch, and John Laing, no one could question their eligibility, simply because they could be varieties and be distinct; and if they were staged with three other plants the Begonias would obviously remain "distinct varieties." The judges were quite right, and the "authority" who contravenes their decision on the grounds indicated is undoubtedly wrong in this matter.

**Pruning Marechal Niel Rose (J. P.).**—If you cut out such of the old wood and wiry-looking growths that you can and secure the young growths of this year to the wall, or at least as many as are required and which are conveniently placed for that purpose, you will probably have many more flowers next year than if you allow the tree to continue in its present wild and neglected state. The pruning may be done at once, yet thoughtfully and carefully, and the less the foliage of the growths to be retained is broken the better will be growth and finer the blooms next year.

**Various (H. G.).**—The Inula to which you refer is a hardy perennial, and may be raised from seeds, but is usually propagated by cuttings. We are not able to say whence you can obtain plants; but as the firm you name promised to send it you will perhaps receive it in due time. We are surprised you could not procure the hardy border Geraniums. You perhaps did not make yourself understood. Plants cannot be had by anyone from botanic gardens, and it would not be right for persons to apply for them from those establishments. We quite agree with you that writers when referring to little-known plants should describe the method of propagation.

**Seedling Adiantum (H. Henderson).**—It is not easy to determine the true character of a Fern from a couple of fronds. If you have or know Adiantum gracillimum and are satisfied your seedling is quite distinct from that, you will do well to show a plant to some good nurseryman. Judging from the examples before us we are not prepared to say your plant is not a good form of A. gracillimum.

**Planting Shrubs (J. H. C.).**—The distances between the shrubs will afford space for development; and if you plant white Lilies (Lilium candidum) amongst them and Gladioli brecheyleyensis, your border will be rendered additionally attractive. If you wish to form a screen from the street the Berberis (Mahonia, we suspect) will be long in attaining the requisite height, and so would the Aucuba. The Privet we consider would be better at the back, and the Berberis in front. The "japonica," we presume, is Pyrus japonica, which does not make a free-flowering bush in all soils and gardens so far north. If it does so, however, in adjoining gardens you may plant it; and the Cotoneaster is often of tediously slow growth. We should have a Golden and Silver Queen Holly in the group, also Hodgkin's Holly (Ilex Hodgkinsi), than which no evergreen thrives better in towns.

**Making Asparagus Bed (Old Subscriber).**—The best method depends entirely on the soil of the garden, and of this you say nothing. On this subject we cite from Messrs. Sutton's excellent work on the "Cultivation of Vegetables and Flowers":—"The routine cultivation of Asparagus must begin with a thoroughly good preparation of the ground. To be well drained is a matter of the first importance, for stagnant water in the subsoil is deadly to the plant. But a good loam does not need the extravagant manuring that has been recommended and practised for this purpose; a deep digging, and, if the subsoil is good, a thorough trenching may be recommended, but an average manuring will suffice, because Asparagus can be effectually aided by annual top-dressings, and proper surface culture is of great importance in the subsequent stages. The plantation must be in an open spot. The preparation of the ground should commence in the autumn, and be continued through the winter, a heavy dressing of half-rotten stable dung being put on in the first instance and trenched in 2 feet deep. In the course of a month the whole piece should be trenched back. If labour is at command a third trenching may be done with advantage, and the surface may be left ridged up until the time arrives to level it down for seed. It will appear that this routine is of a somewhat costly character, but we are supposing the plantation is to remain for years, making an abundant return for the first investment. But we are bound to say that a capital supply for a moderate table may be obtained by preparing a piece of good ground in an open situation in a quite ordinary manner with one good digging in winter, adding at the time some 6 inches or so of fat stable dung, and leaving it thus until the time arrives for sowing the seed. Then it will be well to level down and point in half-a-spade deep a thin coat of quite rotten dung to make a nice kindly seed-bed."

**Orchids (C. S. R.).**—The Orchids will do in the house with the temperature you name, with the exception of Odontoglossum Alexandræ, and the summer temperature is too warm for that variety. If you have not a cooler

position place it at the coolest end of the house. This does best in a pot in a mixture of peat fibre and sphagnum moss in equal proportions, with a little charcoal intermixed, and the surface covered with living moss. The others will do in baskets, but we prefer to keep all Cattleyas in pots and pans. They, nevertheless, do well in baskets, and you may be very successful with them if that system of culture would be most suitable for you. These should be potted in peat fibre, lumps of charcoal, and very little moss; while the Oncidium will do in all moss and lumps of charcoal. We would not advise you to pot or basket them now, but keep them in the pots they are in until they commence growth during the months of February or March. If you would rather have them suspended from the roof place a wire round the pots and suspend them. The Odontoglossum does best not suspended, and in a winter temperature of 45° to 50°, with a rise of 5° or 10° by day. During the summer it requires no artificial heat, and should be kept as cool as possible.

**Tydas (Idem).**—No. 1 is a Tydas, and requires to be grown in a stove temperature; the one you give will suit it exactly. Some varieties form underground stems or tubers, and these can be dried off after flowering and kept at rest for a time. Other varieties are evergreen and form no tubers, and if dried off they will never start again. They are perpetuated by cuttings. These plants, if not placed in the pots in which they are intended to flower, should be so treated without delay. A mixture of loam and peat, one-seventh of manure, and sand, will form a compost that will grow them well. The pots should stand upon some moisture-holding material, for they grow luxuriantly in a moist atmosphere. They should be kept as near the glass as possible, given abundance of light, a circulation of air daily when favourable, but must be shaded from strong sun. Although Tydas like a moist atmosphere they should never be syringed overhead, or the foliage is very liable to become spotted and injured. All the other specimens you sent were withered beyond recognition, except No. 4, which is Begonia Evansianus.

**Names of Fruits (H. J. C.).**—Early Albert. (Mark Hobby).—Red Astrachan (Colville Browne).—1, Early Harvest; 2, Mère de Ménage.

**Names of Plants (A. Scott).**—A Gaillardia, perhaps G. picta—a perennial, propagated by cuttings, also obtained from seed. (Oporto).—An Orchid flower coming so far in a dry box without anything whatever to keep it fresh must necessarily be withered on arrival. We can only say it is a Dendrobium, the species of which can only be determined by a better specimen. (F. G.).—1, Colchicum autumnale variegata; 2, C. autumnale. (John Lewis).—Hibiscus syriacus, also known as Althæa frutex.

# COVENT GARDEN MARKET.—SEPTEMBER 10TH.

TRADE quiet, prices remaining the same.

FRUIT.			
	s. d.	s. d.	s. d.
Apples .. .. ½ sieve	2 6	to 4 6	
Chestnuts .. .. bushel	0 0	0 0	
Cobs, Kent .. per 100 lbs.	60 0	70 0	
Currents, Red .. ½ sieve	0 0	0 0	
" Black .. ½ sieve	0 0	0 0	
Figs .. .. dozen	0 6	1 0	
Grapes .. .. lb.	0 6	2 6	
Lemons .. .. case	15 0	21 0	
Oranges .. .. 100	8 0	to 12 0	
Peaches .. .. per doz.	1 0	6 0	
Pears, kitchen .. dozen	0 0	0 0	
" dessert .. dozen	1 0	3 0	
Pine Apples English .. lb.	4 0	5 0	
Plums .. .. ½ sieve	4 0	7 0	
Strawberries .. .. lb.	0 0	0 0	
St. Michael Pines .. each	0 0	0 0	

## VEGETABLES

	s. d.	s. d.	s. d.
Artichokes .. .. dozen	2 0	to 4 0	
Beans, Kidney .. .. lb.	0 3	0 0	
Beet, Red .. .. dozen	1 0	2 0	
Broccoli .. .. bundle	0 9	1 0	
Brussels Sprouts .. ½ sieve	0 0	0 0	
Cabbage .. .. dozen	0 0	1 0	
Capsicums .. .. 100	1 6	2 0	
Carrots .. .. bunch	0 3	0 4	
Cauliflowers .. .. dozen	2 0	3 0	
Celery .. .. bundle	1 6	2 0	
Coleworts .. .. dcz. bunches	2 0	4 0	
Cucumbers .. .. each	0 2	0 4	
Endive .. .. dozen	1 0	2 0	
Herbs .. .. bunch	0 2	0 0	
Leeks .. .. bunch	0 3	0 4	
Lettuce .. .. dozen	1 0	to 1 6	
Mushrooms .. .. punnet	0 0	1 6	
Mustard and Cress .. punnet	0 2	0 0	
Onions .. .. bunch	0 3	0 4	
Parsley .. .. dozen bunches	2 0	3 0	
Parsnips .. .. dozen	1 0	2 0	
Potatoes .. .. cwt.	4 0	5 0	
" Kidney .. .. cwt.	4 0	5 0	
Rhubarb .. .. bundle	0 4	0 0	
Salsafy .. .. bundle	1 0	0 6	
Scorzonera .. .. bundle	1 6	0 0	
Shallots .. .. lb.	0 3	0 0	
Spinach .. .. bushel	2 0	4 0	
Tomatoes .. .. lb.	0 6	0 0	
Turnips .. .. bunch	0 4	0 6	



## LAND TILLAGE AFTER HARVEST.

(Continued from page 230.)

"UNTIL you put the wet land right by drainage (and drainage is the best foundation of agricultural progress), you will not succeed in permanently benefiting agriculture," said Mr. Bailey Denton when before the Royal Commission; and the same high authority has recently stated in proof that there is now an upward movement in agriculture, "that the number of applications for money to be expended in improvements made to the General Land Drainage and Improvement Company since the commencement of the present year has in number and amount exceeded those that were made during the whole of last year, and that the former have far exceeded those that were made in the same period of time during the last four years."

Are home farmers keeping well to the front in this important



matter? Now is the time, as the summer crops are cleared from the fields, to attend to the drainage of arable land; and it is of such importance that its consideration might well have been taken for our first brief chapter on land tillage after harvest. Manure the soil to fatness, stir surface and subsoil as deeply and repeatedly as you please, but without drainage vain will be your efforts to obtain full crops. Why? It is all very well for authorities to tell us that drainage is the foundation of agricultural progress, but ought we to put implicit faith in such assertions without absolute proof of its correctness derived from our own practice and observations? Certainly not, nor have we any difficulty in obtaining such proof. It abounds on all sides of us, and is patent to very ordinary intelligence; yet a short time ago we actually heard the owner of an estate containing several farms declare how greatly he should feel obliged to anyone who would show him how wet land abounding with coarse herbage and rushes could be made sound and productive of fine nutritious grass?

How frequently one hears the term "cold wet land." Why cold? Because the water which should be withdrawn from the soil by drainage can only escape from it by evaporation, and this constant evaporation of moisture many degrees below the temperature of the atmosphere keeps the soil cold, just as the subsoil is kept cold by the body of water remaining in it. Gisborne long ago taught us that a hundred pounds of soil saturated with water which can only escape from it by evaporation, after a pint of water has so escaped from it is 10° colder than it would have been had the water passed quickly from it by filtration. Often have we witnessed the baneful effect of such coldness of the soil upon the plants existing in it, and the puzzled looks of the farmer whose deep ploughing and heavy dressing of manure, clean land, and good seed bed tell so little upon the crop. He tries to account for it by vague remarks about the coldness of the land, and but too often fails utterly to understand the reason why his efforts are thus rendered futile or so very moderately successful that it is difficult to see what margin of profit he can realise upon his gross expenditure. Yet he has only to put in drains and the effect is magical. It prevents constant evaporation; it removes water comparatively cold from the soil, and makes room for warm air, so that the temperature of the soil wherein the roots are spreading and of the surface among the young plants is so much elevated that an early, brisk, strong growth is the result. The well-drained soil also becomes firm as well as warm; early and late frost ceases to be so prevalent as it was when the land was cold, soft, and wet, and the tender crops are proportionately less liable to injury. The mind has only to grasp this fact clearly and fully, and the conviction must follow that drainage is the foundation of agricultural progress.

Ten yards apart and 4 feet deep has with good reason been given as the proper distance and depth for land drainage generally. Exception has been taken to both the depth and distance for drains in strong clay; but this should not be done lightly, for the matter was well considered at the outset; and the adoption of more shallow drains, while it leads to a more prompt and rapid withdrawal of surface water from the soil, also involves the risk of water rising to the surface by capillary attraction to the exclusion of the air, rendering the soil so cold as to practically defeat the end and aim of drainage. Let us see how this unsatisfactory state of things is possible. The bottom of the drains is the level of the water-table, and when it is remembered that the mean temperature at about 2 feet below the water-table is 48°, it will easily be seen how if water can rise by attraction from the water-table into the surface soil during the season of growth it must reduce the temperature so much as to seriously affect growth. It was undoubtedly a knowledge of this important fact which led to the adoption of 4 feet as the best general depth, because it would keep the water-table so far from the surface as to prevent the spread of moisture by attraction from it sufficiently to render the plants safe, capillary attraction only taking place within certain ascertained limits. Fill a small flower pot with soil, stand it in a pan of water, the water at once rises in the soil by gravity to the level of the water in the pan—that is the water-table, whence it rises and spreads in the soil by attraction. By keeping the pan filled with water and using a pot of sufficient depth we can readily ascertain the limit of capillary attraction in any soil. We have explained this matter fully, because whereas we have heard objection taken to deep drains no mention has been made of it, and yet its importance is unquestionable.

(To be continued.)

#### WORK ON THE HOME FARM.

*Horse and Hand Labour.*—September is a month of golden opportunity for the cultivation and cleaning of the land. We have been favoured with exceptionally hot dry weather for saving the corn, and in the southern half of England harvest was over before the end of August. Trifolium was promptly sown and harrowed in on clean stubbles, as showers soon followed in many districts, and by Partridge day land-

cleaning was in full swing. Upon the land reserved for Wheat-sowing two wet places were observed and marked on the drain map last spring, for they were unmistakable indications of faults in drains, to be set right now. To sow Wheat upon badly drained or undrained land points to sluggish growth, and half a crop both of grain and straw, which means in these hard times failure and bankruptcy. But with thorough drainage, clean land well stirred, timely and correct application of manure, and good seed, Wheat-growing still answers. Rye should now be sown at the rate of three to four bushels per acre. We have frequently found this crop invaluable for affording an early supply of green fodder at that critical period of the year—late spring, when the diminished bulk of stored fodder shows the effects of a long winter's feeding, and pastures are backward. Harvest followed haying so quickly this year that much work usually done between has been left. Hoeing and thinning of late Turnips, hedge-clipping, cutting a grubbing of brambles in pastures, the mowing of litter wherever it is to be had, we get many waggonloads from the rides and tracks in the woods now as they are being cleared in readiness for pheasant-shooting. Thistle and Dock spudding should now be done thoroughly; we have found pulling Thistles now to be possible as the ground softens by rain, and the plan certainly answers, very few Thistles coming again. Manure heaps are being turned, and the manure well shaken to pieces in readiness for carting upon grass land, which will be done as the cattle are taken into the yards next month.

*Live Stock.*—Recent showers have brought a serious drought to an end. Pastures are freshening so much that a slight immediate reaction in prices is probable. The depression in the sheep trade has been remarkable; throughout July and August prices had a downward tendency, so that the best lambs reserved for late fairs were sold at a reduction of 10s. to 12s. upon last year's prices. At Hungerford sheep fair a lot of two-tooth ewes bought last year as lambs for 45s. were actually sold for 47s., and the trade generally ruled 20s. a head less than last year. Twice recently the thermometer has fallen to 40° at night, warning us of the approach of colder nights. Horses have been taken into lodges and stables at night, cold and wet being bad for all of them, especially for old horses liable to suffer from rheumatism. Channel Island cattle are always somewhat delicate, and should never be much exposed to inclement weather; calves and yearlings of all breeds have had lodges to run into all the summer, and now cattle in preparation for the butcher have a couple of lodges bedded with litter for them at night.

*Poultry.*—Fowls are moulting so early that the supply of eggs has fallen considerably. Our early pullets hatched in April are already laying. The May pullets will begin by the end of the month, and all of the white and coloured Dorking pullets will afford a nice supply of eggs throughout winter. Six months is considered the usual age for pullets to begin laying. We attribute our clear gain of a month to careful regular feeding, the first meal being given soon after 5 A.M.

#### OUR LETTER BOX.

*Barberry Jam (J. S.).*—The following is a good recipe for making the jam:—Pick the Barberries clean, bake them in an earthen pan, and when done pass them through a sieve with a wooden spoon; add to them their equal weight of pounded sugar. Mix the whole and put it into pots covered with sifted sugar, the papers dipped in brandy. It is very wholesome, and so also is jam made from the fruit of Mahonia (Berberis) aquifolia, the jam of this species being considered good for sore throats.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1884. August and September.		Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.	On grass.	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday .....	31	29.821	65.4	62.6	S.E.	61.1	68.6	58.3	86.7	58.4	0.180
Monday .....	1	29.656	59.6	58.4	S.W.	61.7	67.0	57.9	100.2	57.7	0.314
Tuesday .....	2	29.768	60.4	55.6	S.E.	60.9	68.2	53.8	107.6	49.2	0.158
Wednesday ...	3	29.736	59.2	54.2	E.	60.0	68.2	47.2	99.2	42.4	0.573
Thursday ....	4	29.429	53.8	53.3	N.	59.6	62.8	51.6	79.8	52.6	0.268
Friday .....	5	29.606	57.8	52.6	N.W.	57.8	65.6	44.8	109.8	41.2	—
Saturday ....	6	29.705	57.6	52.4	E.	57.2	62.7	43.1	77.7	36.9	0.190
		29.674	59.1	55.7		59.8	66.2	51.0	94.4	48.3	1.633

#### REMARKS.

31st.—Dull drizzly day.

1st.—Heavy rain early, and wet till about 2 P.M.; fair afternoon.

2nd.—Fine pleasant morning; heavy shower at 0.30 P.M.; cloudy afternoon.

3rd.—As a whole dull and showery, but a good deal of sunshine in morning.

4th.—Very wet early and all the morning; a little sunshine in late afternoon; clear moonlight night.

5th.—Fine, clear, bright day, and clear moonlight night.

6th.—Fine sunrise; dull early; miserably wet morning; dull afternoon; wet evening.

A thoroughly wet week, but with a good deal of pleasant weather interspersed. The total rainfall during the week was nearly twice that of the whole month of August. Temperature 2° below that of the preceding week, and just below the average.—G. J. SIMONS.





## COMING EVENTS

18	TH	Cheltenham Show.
19	F	
20	S	
21	SUN	15TH SUNDAY AFTER TRINITY.
22	M	
23	TU	Fruit and Vegetable Show, South Kensington (two days).
24	W	

## VEGETABLES IN 1884.

**A** QUIET look round after the hurry and bustle of the day is over enables one to arrange matters in the best way for the morrow, to detect faulty workmanship, to take stock of crops in use and for a future supply, and above all to study errors of practice, in view of setting matters right as speedily as may be possible. That the plan is a good one all thoughtful earnest men will agree, for it is only by close attention to results as they occur that we can hope to do as well or better subsequently. The weather of the summer that is now well nigh over has been a series of extremes, which have proved so trying to growing crops that more than ordinary care and thought have been called for in order that no serious failure should occur in the vegetable supply. But the long period of drought and great heat has come to an end, and my stroll this evening has given rise to several thoughts in connection with the drought, some of which may prove worth recording.

Glad am I to say that vegetables have been plentiful and good, which agreeable fact is undoubtedly greatly owing to an abundant supply of water and to an efficient apparatus for its use. Fully exposed to sun and air, by a simple arrangement of piping, stopcocks, and hose, the water is applied to the crops with ease and facility, and in the best possible condition for the purpose. Let me here note that the best hose is of leather—a little more expensive than other kinds perhaps, but so durable as to be much cheaper in the end; and that for large gardens there should either be a very large main pipe or three or four small ones, so that more than one stopcock and set of hose may be at work at the same time, which is impossible if the main or supply pipe is of the same diameter as the hose. The soil became dry so early that even the first crops of Potatoes had to be watered, and exceedingly well did they answer. Myatt's Prolific Ashleaf is my favourite early sort, alike excellent in quality, size, and quantity. It was followed by Snowflake and Early Rose, both exceedingly good this year, and so abundant that it has been somewhat difficult to find room in the store-sheds for later sorts. Mulching with short fresh stable manure has been of material use, especially among Cauliflower, Broccoli, and winter greens, most of which have grown so freely that the mulching is hidden by the leaves. Early London, Walcheren, and Veitch's Autumn Giant are the Cauliflowers I prefer as affording an early, intermediate, and late supply.

The early Celery was well established in the rows before the drought became severe, but the main crop had to be transplanted under a burning sun, and after the plants had become large and tall trenches for single rows were got ready, the soil watered, the plants well watered before and after the planting, and well shaded by branches of underwood thrust into the ground on both sides of each row. This with heavy daily waterings prevented drooping, caused the roots to spread quickly in the rich soil of the trenches,

and the plants are now growing freely with clean healthy foliage without a trace of maggot.

For three months an abundant daily supply of Peas was had, but towards the end of August drought and excessive heat had rendered the air so dry and parching that it told severely upon the haulm. Despite all possible care in watering and mulching, stunted growth and mildew lessened the supply so much that it became broken by intervals of one or two days, when other vegetables had to be used. This was matter for regret, for we have no real substitute for Peas. Everybody likes them so well that we seldom hear of the most fastidious eater growing tired of them. I make ten to twelve sowings during the season—sowing once in January, February, July, and August, and twice in March, April, May, and June. The May sowings proved to be my weak point. Two longrows of British Queen and Ne Plus Ultra were sown in the first week and again in the third week of that month, and had the growth been as vigorous as usual the supply would have proved ample; but it was not, and in future, if space can be had by any means, eight rows instead of four will be sown in May to prevent any failure in the supply of young and tender Peas in August. No doubt a lesser number of sowings than I have mentioned would afford a supply of Peas, but they would not be young and tender—an indispensable point to keep in view in Pea culture. Then, too, a liberal margin must be allowed for large and sudden demands over and above the ordinary supply. When an establishment of fifteen or twenty persons is liable to be swollen to double that number by visitors, there must be no question about a few rows of Peas more or less. That delicious old Pea Champion of England has been most valuable; no other is equal to it for the March and April sowings, and it was found infinitely more useful than the long-podded Telephone.

Of Tomatoes the new variety Hackwood Park Prolific proves worthy of the first-class certificate awarded to it by the Royal Horticultural Society last year. The crop of it is abundant and fine, but it is not so early as my old favourite Early Gem, which will still be retained to fill half the space that can be spared for the culture of this useful vegetable. Extra Early Milan Turnip is certainly earlier than all other sorts, but it seems to seed sooner than Early Munich, so that it will still be advisable to sow both together as was done this season. Stewed Lettuce has become such a favourite vegetable that the Lettuce beds have gone on growing in size till they almost rival those of Cabbages and Cauliflowers, and the plants certainly exceed both of them in numbers. Ivery's Nonesuch is the favourite, as from its large size it is the most useful for this purpose in summer. To those who have not yet tasted stewed Lettuce I strongly recommend it as a tender, succulent, delicious vegetable, making a nice change when variety is cared for. Lettuces, too, are of such easy culture that a supply is always at hand for any emergency, however hot the weather may be.

Mr. Gilbert's new vegetable Chou de Burghley gave such a good supply of large tender hearts throughout last winter that I regard it as indispensable for that purpose alone. Its flavour was always so delicate and delicious that I really wondered it should share the adverse criticism to which all new introductions are subjected. Ellam's Dwarf Early Spring Cabbage is sent out with the tempting statement that "If sown early, on or about the 10th of July, it will not run to seed the following spring, but will be ready for use two or three weeks before any other kind." I have so sown it, and only hope it may answer to this description next spring. Veitch's Fine Spring White Broccoli is without doubt the best early Broccoli I have ever grown; its firm white large heads surpass all others while it is in season. I much fear the stock of Leamington Broccoli has become mixed, for it has much deteriorated from its original excellence, many of the heads being meagre and unprotected.

Lily White Seakale proves to be a distinct variety of



a somewhat dwarf and slender growth. It does not become purple from exposure like the old kind, and its leaves are pale green in colour. I have found it most useful planted out for a late supply under coal ashes, where the older variety is apt to become too large.—EDWARD LUCKHURST.

### THE PAST ROSE SEASON.

THE past Rose season seems to me to have been rather a remarkable one in some respects, and I shall be glad if some of your correspondents will compare notes with me on the success or failure of the different varieties. We found undoubtedly fewer caterpillars than usual in the spring. I attribute this to the fact that the first part of the year was so mild and the shoots made such early progress that large quantities of eggs were laid on the buds, which were afterwards pruned off.

Mildew showed itself early, and in some places made terrible havoc. It was not any worse with me than it was last year, but it was bad enough, and my constant demands on the village shop for more sulphur made me almost fear that I might be suspected of Fenian proclivities and the manufacture of infernal machines. Mildew is a great nuisance. The sulphur seems to check it for the time, but does not prevent its breaking out again as soon as the sulphur is washed off if a hot sun be followed by a cold night. I suppose, however, that it is only the aggravation of mind at seeing the mildew which makes me imagine that sulphur has the peculiar property of falling on your clothes and spoiling your watch chain, whether you stand the windward side of the Roses or not. I find among the H.P.'s Camille Bernardin, Prince Camille de Rohan, Fisher Holmes, Marie Baumann, and John Hopper the most liable to mildew; and if I go down the rows of those varieties and find them free (they do not grow in the same situation), I take it for granted that there is not much mildew in the rosery.

But the enemy which most seriously injured me this season was thrips. I suppose it was the heat and drought. I never knew it so bad on outdoor Roses. By the second week in July it had a firm hold on all my light Roses both H.P.'s and Teas; and it was very annoying to find every bloom, however fine and well shaped, spoiled by dirty stains on the petals. It was especially aggravating, as it ought to have been a good year for the light Roses. What ought I to have done for it?

The past season ought also to have been a good one for all the hot-weather Roses—viz., of H.P.'s Capitaine Christy, Comtesse de Serenye, Duchesse de Vallombrosa, Madame Lacharme, Marie Rady, Baron de Bonstetten, Mons. Noman, Pierre Notting, Reynolds Hole, and Star of Waltham. With me the only good ones of these were Madame Lacharme, the only light H.P. which by coming early escaped the thrips, and Pierre Notting, Reynolds Hole, and Star of Waltham. Of these Pierre Notting, as one of your correspondents has remarked, was unusually good. I have hardly ever been able to show it before. In most seasons there is a suspicion of a hole in the centre, which becomes a grim reality before the judges can get to it; but this season it was beautifully filled up, and indeed at one show my Pierre Notting won the prize as the best H.P.

It seems to me that certain Roses, which in ordinary seasons show an eye with the least increase of heat, in a real hot year rise to the emergency as it were, and form a good tight central point in the bud stage in anticipation of what they will have to go through. Besides Pierre Notting, Général Jacqueminot is an example of this; but high-coloured as the silver-medal Général at South Kensington may have been when the Judges went round, I wished they had chosen some more lasting bloom as the best H.P. in the Show. He did not look very grand at half-past twelve.

I had some good blooms of Reynolds Hole and of Star of Waltham, but Baron de Bonstetten, though it did not burn, did not come to much. Mons. Noman was not so good with me as last year, and Marie Rady was sadly wanting in colour. Horace Vernet and Fisher Holmes were, next to Pierre Notting, the Roses which showed most conspicuously above the average with me this season.

A. K. Williams was a great disappointment. I never had such growth both on maidens and cut-backs, Briars and Manetti, but this Rose will not stand with me either in a tent or a room. The strongest bloom is completely gone the next morning. After a short time the outer petals shrink and dwindle, leading you to suppose, if you did not know what a strong single 3-foot shoot it had been cut from, that it was a bloom with a weak stem. I have certainly seen A. K. Williams stand fairly well in other people's boxes, but we must speak of a Rose as we find him. I have done all I could for him for years, and he would not be at the top of the tree in my list if I was a voter.

The most conspicuous failure of the season I think was Marie Baumann, generally held, like Horniman's tea, to be always good alike. I had not one good bloom, and I do not remember such a scarcity of perfect flowers of this justly popular Rose.

In Teas this was, as might be expected, a wonderful season for La Boule d'Or. Any rosarian who has not the means of growing it under glass, and has often been tempted to throw it away but not done so, must have rejoiced in it this year. I believe it to be a mistake to give this Rose much manure. If it makes really strong shoots the buds come so very full and solid that nothing less than a week's blazing sun under a south wall without a drop of rain will properly expand the blooms. A noted exhibitor actually root-pruned this variety to produce hard twiggy wood, and thus keeps the buds on short commons in order to make them open more readily. Marie Guillot, another difficult opener, also did well. Mr. Page Roberts had a beauty in his winning stand at South Kensington. Madame Hippolyte Jamain had also a good time. What a lovely Rose it is! and how completely its beauty is wasted while it is on the tree by its pendent habit! Perle des Jardins also produced unusually well-shaped blooms, which makes me think that it is cold unfavourable weather during the early bud state which makes the strongest blooms of this Rose and of Marie Van Houtte so often come divided. It is a great year, too, for standards of Maréchal Niel. My trees have been covered with blooms in every stage throughout the whole season. Madame Willermoz was, as usual to my thinking, an impostor. You get a fair bloom occasionally, but the unusual strength of stem, foliage, and bud are deceptive. Comtesse de Nadaillac was better than ever. Two wonderful blooms were shown at the Crystal Palace by Messrs. Page Roberts and Cant. I hardly knew which was the best. As I have now mentioned Rev. F. Page Roberts's name twice I will add what seems to me an interesting note of the past dry season—that this gentleman, who won the premier amateur prizes for Teas at South Kensington and the Crystal Palace, at the latter Show twelve triplets against nine competitors, has a very dry gravelly soil a considerable distance from available water.

Speaking of Comtesse de Nadaillac, very nearly to my mind the most beautiful Tea Rose, I have often pondered why the N.R.Sd catalogue goes out of its way to state in a note that all the Teas and Noisettes have smooth wood except Nadaillac. I have gone so far with hands sorely wounded after pruning *Devoniensis* and others as to count the number of thorns upon equal lengths of Nadaillac and other Teas. I confess I have generally found more on the Nadaillac, but often only two or three more, and I still ponder.

Of new Tea Roses that I have seen *Souvenir de Thérèse Levet* is certainly the most striking on account of its colour, but the blooms I saw were rather deficient in shape and substance. I asked last year if anyone would give Madame Cusin a character. No one did, and I rather rashly took her without one. I still think she may be good; but though the centre is nicely pointed the petals seem rather lacking in number. I saw a beautiful bloom of Princess of Wales (Tea) at the Crystal Palace, but have not the cheek to ask if anyone will give her a character.

If there were any first-class new H.P.'s I did not see them. I would not have *Henrich Schultheis* because I could not spell him without a catalogue. *Merveille de Lyon* (I have not spelt this as it is in the catalogue) I think disappointing—heard too much about it beforehand, perhaps; and to judge from the number of times I was asked at the leading shows as to where Her Majesty was her seclusion is trying to the loyalty of her would-be subjects.

Does anyone agree with me that certain Roses are deteriorating? I certainly fancy that Prince Camille de Rohan, for instance, is not nearly so good a Rose as it used to be. It requires a very strong shoot to bring it even true to colour, and one seldom sees it shown now, though I still think when it is grown strongly that no other dark Rose is so deep in colour. It is odd that Wm. Allen Richardson should, on the contrary, as one of your correspondents has pointed out, come much paler and weaker in colour when grown strongly. I think this Rose, which is a strong grower, is likely to become very popular with ladies and for buttonholes.

I was pleased to see some time ago a useful note from one of your correspondents about the danger of giving liquid manure to weak plants. It is just the sort of mistake that a person ignorant of horticulture is likely to make. "The plant looks weak and sickly; let us give it a good strong tonic." It is like giving beefsteak to a babe or a person dangerously ill. My idea is that liquid manure yields the best return when given to the strongest and healthiest plants, unless, of course, it is desirable that they should not grow too strongly. It is a form of the old law, "Unto him that hath shall be given." Strange at first sight as a precept of Infinite Justice, but Darwin has shown us that it is a fundamental law of Nature. I think, too, that liquid manure is best administered in wet weather. Not only can the plants then bear it stronger, but their mouths are then open: they are "on the feed," as an angler would say.

Everyone knows, of course, that in such a dry season as the past one liquid manure should be given weaker than usual. Of course: but as I have been laying down the law rather too freely perhaps, your readers will be interested to hear that I seriously checked the growth of my Tea Roses by giving them in the dry weather too much



and too strong liquid manure, though it was not a bit too strong or too much for an ordinary season.

Another point in Rose culture which is important for a novice to know, though I do not remember to have seen it in print, is to be sure to bud your stocks from flower-bearing shoots. With the thoroughly autumnal varieties this point is not of much importance, as every shoot will bloom; but with any Roses which are not strictly perpetual, such as Madame Gabriel Luizet and François Michelin, the budding from a runaway shoot, which is sorely tempting sometimes, will assuredly produce runaway maidens, which are not desirable under any circumstances, and you will get no bloom whatever the first year. Does anyone agree with me, by-the-by, that "yearling" would be a better term than "maiden" for Roses in their first year?

Maréchal Niel should also be budded from a flower-bearing shoot, and it will probably bloom as a "yearling," but I cannot guarantee that Cloth of Gold will, for I have tried that and almost every other dodge with that aggravating Rose, and though I know it blooms fairly with some growers, I have had only one bloom in thirteen years.

Though I think he has misunderstood me somewhat, I hereby give my thanks to "A Thinker" for his friendly criticisms. Will he, in return, give some thanks to a thanker on these disjointed Rose notes?

If my article is too long cut it in two, or cut it how you like.—A. F. M.

[Such interesting notes require no "cutting." Our able correspondent desires us to state that they were in our hands before he had read "D., Deal's," review of the Rose season last week.]

### SPOILING VINES.

ALTHOUGH I cannot write to order—never did, nor never shall, probably—I am yet not unwilling to comply with a request when I feel a little may possibly be said usefully on any subject with which I may happen to be acquainted. A suggestion occasionally brings out something worth remembering; and although on the question of spoiling Grapes, on which I am invited to enter, I have not very much to say that will be worth printing, yet I am convinced if the Grape-growing readers of this Journal were to state the causes of the failures they have seen, if not experienced, that many a serviceable hint would be given in the shape of errors to be avoided in the cultivation of Grapes.

The last instance of spoiling Grapes came under my notice a month ago, and I rather think it is a typical one, because simple yet undoubtedly serious; and the worst of it was, the man in charge did not appear conscious of any error at all in what he called his "practice," which I call a practice of neglect.

The Grapes were nearly all cut, the residue being as miserable as could well be imagined, and it was clear the Vines were in an enfeebled state. The bunches that had been cut were, as might be expected, described as "much better, yet not quite so good as they should be." He might as well have said nothing, for a man who has been among Vines for thirty years, and accustomed to not the worst of Grapes, knows at a glance what the canes he sees are capable of producing.

The Vines in question, so far from being "as good as they should be," were from my point of view good for nothing. The soil of the border was good, manure was spread on the surface, and roots were turned up with pride, the wood was strong enough, hard, and brown; and "Feel it," says the man, "it is ripe—I always ripen it well; but yet the bunches don't come big enough, and I cannot make it out. There is a bit of spider and thrip on the Vines, but that don't matter at this season; if it had been earlier I would have smoked, but as the leaves are coming off now it is no use." He meant it was of no use fumigating to kill the insects. These Vines were spoiled. It was as flagrant a case of spoiling as ever came under my notice. Thrips were in millions. As fast as the roots supplied food the insects appropriated it, and faster, for the leaves collapsed and were falling in all directions. The buds in the axils were as much like Spinach seed as anything—pointed end upwards, and how could they be otherwise? They had nothing to support them—no leaves to elaborate and secrete the matter necessary for their development. This was in the north of England. Are there not similar cases in every county? It is greatly to be feared there are. I have seen many such during the past twenty years. Leaves falling in July that ought to have been green in October, and consequently had two months longer in which to absorb and store up food, and the two months, moreover, in which more nutriment is gathered than during any other two months in the year, simply because the root-action of healthy Vines is greater in August and September than at any other period of growth.

I am convinced that hundreds of Vines are spoiled by insects

every year, especially by thrips and red spider, and the hotter and drier the season is the greater is the danger of invasion by the enemy. There seems to be far too many persons, also, who pretend to grow Grapes who are so astoundingly short-sighted as to be unable to see what is the matter until the evil is done; and then, as in the case referred to, it is deemed of "no use" do anything but to watch the premature falling of the leaves with complacency. So long as the foliage lasts until the Grapes, such as they are, are ripened that is considered sufficient, because "insects can do no harm after the fruit is cut." Never was a greater fallacy, never a more dangerous notion entered into the brain of man. I have said brain, but in truth there is very little brain power where such ideas are born and entertained. It is pitiable to see men contented under such conditions. They are living in a fool's paradise, as sooner or later they will find to their cost.

If more care were taken of the foliage of Vines there would not be half the complaints as to bad borders and the "state of the roots." Bad—that is, imperfect, ill-developed, insect-infested leaves make both "bad roots" and "bad borders." In searching for a remedy for spoiled Vines it is too much the custom to look at the wrong end. Grapes fail to colour, but do not fail to shank; the roots are "seen to," and found wanting. The cause is laid bare—unsuitable soil! Do not make any mistake in this matter. In half the instances of spoiled Vines decaying roots are not the "cause" at all. They are the effect—the natural, hence inevitable effect of injury to the foliage. It is there that the real cause of the evil may be traced in the majority of instances where Vines fail. No matter what has spoiled the foliage, and hence spoiled the Vines, the result is the same—failure. The leaves may have been crushed and crowded, and hence imperfect; they may have been scorched, or they may have been devoured. It matters not what the precise nature of the evil may be, the effects are these—sluggish roots below ground and miserable Grapes above.

Given a well-drained site—that is, a subsoil through which water passes freely, with soil that will grow good crops of Potatoes; also an adequate supply of water, with a manure heap within reach, and healthier Vines and better Grapes can be grown, provided the requisite attention be given to the foliage in permitting its development and keeping it clean, than can be otherwise produced by the best turfy loam that was ever purchased and the finest bones that were ever ground.

The lesson to be derived from the spoiled Vines above referred to is clear. Look to the leaves, and do not let "looking" suffice. If insects are enjoying themselves on them stop their career. It is impossible to nurture brood after brood of thrips and red spider and have good foliage too; and without stout, clean, perfected leaves that can perform their functions in converting crude sap into sustaining food it is most certainly impossible to have creditable Vines and satisfactory Grapes. When the fruit is cut, and before if needed, wash the Vines by using the syringe as if putting out a fire. Pure water timely and sufficiently used is an effectual remedy; but if not applied soon enough, and if the fruit has been removed, then recourse must be had to something stronger. In a word, first perfect the leaves of Vines, then preserve them fresh and green for at least a month after the Grapes are gathered—that is, ordinary mid-season Grapes, and failures will be fewer.

Your correspondent, "A Thinker," in casting his bait on page 186 asked if I should "bite." I think I have bitten, or should have bitten, the man in charge of the spoiled Vines on which these notes are founded, if he were a reader of the Journal; but he is not. He is one of those few who do not read anything, but grope their way in the dark. These notes are wasted so far as he is concerned, but there are others who do read but yet spoil Vines. If I "bite" them too so much the better; not because I have pleasure in giving pain, far from it, but the surgeon's knife must be used at times, and hence I perform this little operation.—A NORTHERN GARDENER.

### WINTER-FLOWERING PLANTS.

WITH the month of September the work, or what we may call the final stage in the preparation of autumn and winter-flowering plants, may be said to commence in earnest. This consists in taking up and potting into their flowering pots all that were planted out in the spring, and which by this time should have made strong and well-developed growths that ought to be well ripened if the most satisfactory results are to be obtained. It seems almost needless to say that a better summer for the ripening of wood than the present one could not be desired, and if the season's growth is immature it is entirely the fault of the cultivator, and is due more than to anything else



probably to planting out very late or neglect in pinching back or thinning out weak and spindly shoots. Amongst the first to be taken in hand are *Salvias*, *Solanums*, *Chrysanthemums*, and *Richardias*. It is very essential that they be lifted with plenty of soil adhering to their roots, and to insure this a thorough soaking of water must be given a few hours beforehand. If the plants are lifted with a fork, as they should be, there will be far more roots than are required—i.e., if 6, 8, and 10-inch pots only are used, and these will be quite large enough and sufficient for all ordinary purposes. Reduce the balls no more than is necessary to allow of a little fresh compost being used when they are potted, and let it be borne in mind that anything like hacking and chopping off the roots with a spade is greatly to be deprecated. A small pointed stick and a sharp knife will do the work much better, and result in a far less amount of injury than would otherwise be the case.

To encourage speedy and fresh root-action good compost should be used in potting. This may consist of good turfy loam chopped up roughly, with an admixture of one part leaf mould and one part manure from an old spent Mushroom bed. After potting give the plants a watering to settle the new soil about their roots, and stand them on a bed of ashes behind a north or west wall till the time arrives for moving them indoors, which will be on the first approach of frost, or say the first week in October. Next to the above-named plants, *Eupatoriums*, *Deutzias*, *Dielytras*, *Hoteias*, and others of a kindred nature may be taken in hand; these to be followed later on by such hardwooded plants as *Azaleas mollis* and *pontica*, *Rhododendrons*, *Guelder Roses*, *Andromedas*, and *Kalmias*. The compost for these should consist of two parts peat to one of loam, and into potting it ought to be rammed in the pots very firmly. This done, they should be plunged in ashes up to the rims, there to remain till they are introduced into artificial heat to bring them into flower, and with these the end of December will be found quite early enough to begin with the first batch. Very early forcing and a high temperature is seldom satisfactory with hardwooded plants lifted from the open ground, and whenever it is attempted the invariable result is a premature falling-off of a great majority of the flower buds.

Lily of the Valley next demands our attention, and is one of those plants in the forcing of which success or failure may be obtained at an almost infinitesimal amount of expense and trouble, just according to the treatment it receives. If taken up too soon, and before the current season's growth is completed, no amount of forcing will avail in producing flowers of anything like a presentable appearance. We would therefore say, By all means leave the roots in the ground till the old leaves are quite dead and the crowns fully matured. This will not be the case much before the middle of November. After the crowns are potted, and if not required to be in flower very early, they may be plunged in ashes to a depth of 6 or 8 inches, where they will be safe from frost—a matter of some little importance with roots intended to be forced.—ET CÆTERA.

#### APPLE TREE SHOOT.

I AM afraid, from the remarks of "C. B." and your own note this week, that a misapprehension exists amongst us on the subject of last year's shoots. When I spoke of "shoots" I meant the annual growths from 1 foot to 2 feet long or more, and not of terminal buds. I have seen Knight's Monarch Pear bearing at the points of the short terminal shoots in the case of a root-pruned tree, and I have had and have now Codlins and other Apples bearing fruit at the tips of the branches where last year's growth finished; but these fertile "tips" are not shoots, but only buds, of which there are clusters, no shoots having really been produced, as they seldom are in old or stunted trees, on which the buds multiply only at the extremities of the branches. I enclose an example from a Codlin, which I call a "terminal spur," and from which, as you may see, I have taken the fruit, leaving two buds on each side for next year. Last year only an inch of wood has been produced, and at the end of it fruit buds, and this season (1884) buds only have been added. This I do not call a "shoot" that one would speak of pruning or cutting back. I enclose also about 6 inches of the extremity of a shoot proper of the same variety, and I shall be glad if you will tell me if Mr. Waiting's shoots, bearing Apples at the tips and forwarded to you, were like this shoot or like the terminal bud example; also to which category Mr. Bunyard's specimens belonged, and then we shall understand each other better. I must add, also, that when speaking of the fruit buds this week, in reply to Mr. Young, I mean that he has mistaken the fruit buds on the wood of 1882 for those of 1883 by reckoning the two years' growth as one.—NON-BELIEVER.

P.S.—The word "tips," as used by your correspondents, seems to imply terminal buds only, and does not indicate any extension of present growth beyond. What was the entire length of Mr. Waiting's last year's shoots with fruit at their "tips?"—N.-B.

[The shoot sent to us by Mr. Waiting was a true, smooth, last year's

shoot, exactly like the one sent by "Non-Believer" and labelled a "proper shoot," only it was both longer and stronger, its length being upwards of a foot, perhaps 15 inches, but we did not measure it. It was bearing good Apples for a length of perhaps 4 inches from the extremity, the buds towards the base having remained dormant. Mr. Bunyard has sent us similar examples; also what are referred to as "fertile tips," which we agree cannot properly be termed shoots, for although they may have been produced last year they are buds merely, and cannot be regarded as shoots for the purpose of pruning. We had written thus far when another sample arrived from Mr. Waiting, and a very remarkable one. There is no question of spurs or tips; it is a genuine last year's shoot—smooth, clean, and very robust, measuring 1½ inch in circumference. This shoot is nearly 10 inches long, and a perfect rope of fruit from end to end, the ten Apples weighing 2½ lbs. The top had been cut off late last summer to "prevent long shoots with fruit at the ends only." It is a conclusive example of fruit, both abundant and fine, borne on wood every particle of which was beyond question made in 1883. Mr. Waiting has also sent us specimens of this year's shoots that were shortened on July 25th, and are now producing vigorous clusters of expanded flowers. This suggests that the shoots were shortened too early, so that the blossom buds were forced. Had they remained dormant they would have expanded in the spring. The trees are in a wonderfully vigorous, healthy, and fruitful state. Some good Plums were sent produced on last year's wood, and one Apple weighed 10 ozs. The varieties of Apples which Mr. Bunyard has sent, with fine fruit on last year's shoots, are Cox's Orange Pippin, Cox's Pomona, Stirling Castle, Cellini, Ross Nonpareil, and Small's Admirable. Mr. Young has sent wonderfully fine examples of last year's and the present season's growths to be forwarded to "Non-Believer." They have been duly sent, and we shall be glad to hear what he thinks about them.]

#### NARCISSUS HORSEFIELDII.

THE price of this variety has gone up, which no doubt is due to its popularity and the eagerness with which it is sought after just now. Fortunately, however, it is not yet scarce, for the grower from whom we purchased during the past two years has sufficient stock to supply 2000 flowering bulbs annually; the stock therefore must be large, for the bulbs cannot be profitably lifted and divided the third year the same as many varieties, but should remain in the ground four years for this purpose.

Now that early spring-flowering plants are coming to the fore we are not surprised that the value of this beautiful *Narcissus* is beginning to be fully recognised. Bulbs are now ready, and where plantations are intended to be made they should be planted as early as possible before they commence to form roots. Certainly it does not appear to injure them very much if they are lifted and replanted after the roots have commenced, but it is better done before.

It is not, however, for the decorative value of this variety for beds, borders, and other positions outside that we wish to draw attention to it, but for early flowering in pots for conservatory decoration. The varieties of *Polyanthus Narcissus* are largely grown for this purpose, while the others are very seldom seen, and yet they are not less effective. *N. Horsefieldii* is beautiful when grown in pots, also quite distinct from anything else flowering at that season of the year, and much more showy than the *Polyanthus* varieties. Well grown it soon arrests attention if slightly elevated above surrounding objects. It produces very large flowers of yellow and white, grows only about 1 foot high, and possesses stout stiff foliage.

Bulbs for this purpose should be lifted now from the open ground, and about six placed in each 6-inch pot, using soil composed of fibrous loam, manure, and a little sand. The pots should be buried outside under ashes in the usual manner until they are well filled with roots, and the plants then brought on gradually in a cool frame. It is well at the approach of severe weather to remove them to some cool position where frost can be excluded, and where a free circulation of air can be maintained. By this treatment the plants will come evenly and early into flower without any forcing; indeed, any attempt at forcing will draw the foliage up weakly and spoil the effectiveness and beauty of the plants.—LANCASTRIAN.

#### THE FOX-BRUSH AERIDES.

I SEND you a spike of an *Aerides* which I had from a respectable nurseryman, Mr. B. S. Williams, a few years ago, as the Fox-brush, or *Aerides Fieldingii*. It was small then, but is strong and healthy now and has flowered freely. It is very beautiful and a great favourite; but last week I was assured by a visitor that my plant is not the true Fox-brush; first because the racemes are not branched, and secondly because he says they are never produced at this period of the year. I am a little concerned about the matter, and shall be glad to know whether my plant is correctly named or not. It is in the best of health, is grown in a pot nearly filled with crocks, the roots being on a mound of charcoal and sphagnum. It is in a stove amongst other plants, and the temperature in winter has often fallen to 58°. This plant is dwarf and sturdy,



and this year has produced three spikes. I mention this to show that Orchids can be grown without Orchid houses. What I desire to know is whether my plant is *Aerides Fieldingii* or not, and if not what is it? Will you kindly inform me?—LANCASHIRE.

[Though the plant is flowering late it is nevertheless *Aerides Fieldingii*. When it gets stronger it may be expected to produce branched spikes. The annexed engraving shows the character of this species with a normal spike like the one sent, which is  $14\frac{1}{2}$  inches in length, and very beautiful—a “brush” of rosy lilac with a crimson glow arising from the

system of growing Pears is well known to many; but these notes are written as a guide to the inexperienced.

Cordon Pear trees are to be recommended for various reasons. A good selection may be grown on a limited space of wall, consequently there is no fear of too many ripening at once. The fruit with careful attention grows to a large size, and twelve good Pears are more appreciated than fifty undersized examples; while the fruit which is grown to the full size for the variety is of much better flavour than inferior specimens.

Being trained to one stem, cordon trees are invaluable for



Fig. 43.—FOX-BRUSH *AERIDES*.

darker colour at the base of the petals. We should keep the plant at the warmest end of the house at least for a month. Allow it all the sun it can bear, which will probably be all there is in Lancashire, and only give sufficient water to prevent the sphagnum shrivelling.]

#### CORDON PEAR TREES.

Good melting Pears are invaluable for the dessert during the winter months, but how seldom are really first-class Pears placed on the dinner table! This is to be regretted, as no fruit is so refreshing in winter as a good melting Pear. The cordon

filling up vacant spaces between large established trees, so that wall space may be utilised which would be otherwise lost. Where possible, however, a good length of wall should be reserved for growing them together. These wants can be more easily and quickly attended to, and the different varieties form an interesting study. Walls which have a south, south-west, and west aspect are the best for Pears.

Most soils will grow good Pears, but a deep strong loam is the best. The ground should in all cases be drained if it requires it, as a well-drained soil is essential for success. The border should not be less than 5 feet in width, and it should be well worked over to the depth of 30 inches. If the subsoil is not of a



very good description it should not be brought to the surface, but be well worked over where it is, mixing with the whole as the work proceeds some wood ashes, turf parings, and such like; if the soil is of a heavy nature some old lime rubbish may be used with advantage. Old turfy loam at command should be well chopped up for placing amongst the roots of the trees when planted.

When selecting or ordering the trees it will be well to procure only those which have been budded close to the ground, so that when the trees are planted the junction of the stock and scion will be about an inch below the surface of the soil without the roots having to be placed too deep. Maidens—that is, trees of one year's growth from the bud, are those generally procured for planting as cordons, although a two-year-old cordon, if it has been pruned back to form back "spurs," is to be recommended. Older trees we do not recommend. Early planting is advisable, as early-planted trees start better into growth the following season than trees planted late, and the ground is always in a fit state for planting early than it is late in the season. A trench should be thrown out about 2 feet wide the length of the wall, some fresh soil placed in the bottom, and the trees planted in a slightly sloping position about 20 inches apart. Thus planted they are brought down more safely the following season to the angle of 45°, their future position. After the trees are planted some dry litter should be placed on the surface of the soil to protect the roots from drying winds and frost. They should be pruned back to about two-thirds their length or according to the condition of the trees, the aim being to have the trees well furnished with spurs.

During the spring and early summer, if any of the lateral shoots are inclined to grow too strongly, the points should be pinched out at the fifth or sixth leaf, and where too thickly placed be thinned out; the leading shoot should be properly secured to the wall. By the middle of August the lateral growth should be shortened back to about the length of 5 inches, the aim being to cause the base buds to swell and eventually form fruit buds; at the winter pruning these shoots should be pruned back so as to form spurs. The trees should not be over-fruited whilst in a young state, and all the fruit should be removed within 1 foot of the leading growth, or the trees may become stunted. It is also a great mistake to over-fruit established trees. The fruit should be thinned out as early in the season as possible after the crop is safe, then the remainder may grow to a large size for the variety. If the weather is likely to be dry early in the season roots should be mulched with short open stable manure, and when the crop is swelling the roots will be greatly benefited by occasional supplies of water or diluted sewage; but the state of the weather and crop must be the guide. As time goes on and the trees appear as if they require some assistance, early in the autumn a trench should be opened about 5 feet from the wall, the old soil worked from the roots, fresh loam and wood ashes mixed with it, and returned to the roots. If cordons are looked after in this way they will keep in good condition for many years.—A. YOUNG.

I was very much interested in the article on "The Fruit Room," on page 223. I have found fruit keep much better when shutters were provided for the windows than when the fruit was exposed to the light.—A. Y.

#### MR. GEORGE BENTHAM.

In the death of Mr. George Bentham, C.M.G., F.R.S., F.L.S., which took place on the 10th inst., the science of botany has lost one of its most devoted followers, and one who by his long and self-sacrificing labours has accomplished such an astonishing amount of valuable work as must place him among the very foremost of the botanists of this and every other country. Born in the year 1800, and starting at an early age to study botany as a recreation, to be finally won over to devoting his whole time to it, Mr. Bentham continued, until a few months before his death, to labour hard in that field in which for many years he has occupied a leading position. Writing in 1874 he says of himself, "It is now some years beyond half a century since I took up the pursuit of systematic botany—at first as a mere recreation, rather later as a study either subservient to or as a diversion from others which my then social position rendered more important (he was then studying law as a profession), but for the last forty years as the main occupation of my life; having in my early days personally conversed with one of Linnaeus's active correspondents (M. Gouan), having received many useful hints in the method of botanical study from the great founder of the natural system (M. A. Jussieu), having been honoured with the intimacy of the chief promoters and improvers of that system (A. De Candolle, R. Brown, S. Endlicher, J. Lindley), and having enjoyed the friendly assistance either personally or by correspondence of almost every systematic botanist of note of this nineteenth century."

Towards the close of the year 1826 Mr. Bentham found himself enrolled among the army of working botanists, and although logic, law, and law-making

were at first the chief subjects of his studies and publications, he gradually gave up more and more time to botany, until at last he yielded to the natural bent of his inclinations, relinquished the law altogether, and entered in real earnest into a long life of botanical labour. For a long time Mr. Bentham worked almost privately, his retiring disposition being averse to anything like publicity. The extension and improvement of the Royal Gardens at Kew, which were being so rapidly brought about by the energetic Director, Sir W. Hooker, and which were destined to develop Kew into what is now the richest storehouse of living and dried plants in the world, were, however, soon to win the sympathies and valuable aid of Mr. Bentham, and in 1854 he offered his exceedingly extensive herbarium and library (the formation of which had occupied nearly thirty-five years of his life) to Kew, with the sole proviso that they should be duly cared for and made available to scientific purposes, and that he himself should have convenient access to them for study. So munificent an offer was of course readily accepted, and it is in a great measure owing to this liberality on the part of Mr. Bentham that there are now at Kew a library and herbarium of plants such as are unknown elsewhere.

From this time until just previous to his death Mr. Bentham worked daily at Kew, where, in conjunction with Sir Joseph Hooker, he laboured at his share of the great work the "Genera Plantarum" and numerous other large works of vast importance to botany. Mr. Bentham's contributions to botanical literature are both numerous and diversified; many of them are published in the various journals of the scientific societies of which he was a distinguished member. The majority of these papers are long enough to constitute large books in themselves, his notes on the Classification, history, and geographical distribution of Composite, which occupy 240 pages of the Journal of the Linnean Society, being but one instance of the length and value of his contributions to the literature of scientific societies. Mr. Bentham was always careful to avoid making botanical classification over-complicated and difficult of comprehension to botanical students. It will not be uninteresting to cultivators, who are often wearied beyond all patience with the hosts of names borne by garden plants, to hear the warning uttered by Mr. Bentham against the name-mongering often indulged in by botanists. He says, "It should be borne in mind that every new name coined for an old plant without affording any aid to science is only an additional impediment." And again, "We must remember that the object of the Linnean nomenclature is the ready identification of species, genera, or other groups for study or reference, and not for the glorification of botanists." Those of us who feel inclined to protest against the many alterations that have been made in the nomenclature of garden plants by the authors of the "Genera Plantarum," may gather from this that the mischief was the work of others and not of the authors of this great book, which is meant to reduce the confused state of plant names to something like order. In addition to his share in the "Genera Plantarum" and the numerous publications that are incorporated in the journals of various societies, Mr. Bentham was the author of the following works:—"Catalogue des Plantes indigènes des Pyrénées," 1826; "Labiatarum, Genera and Species," 1832-6; "Plantæ Hartwegianæ," 1839-57; "Botany of the Voyage of H.M.S. 'Sulphur,'" 1844; "Scrophularinarum Revisio," 1846; "Flora Nigritiana," 1849; "Handbook of British Flora," 1858; "Flora Hongkongensis," 1861; "Flora Australiensis" (7 vols.), 1863-78. The "Genera Plantarum" was commenced in 1858 and completed in 1882.

Nearly a quarter of a century ago Mr. Bentham was awarded one of the Royal Society's medals, and the following extract from the address of the President of the Society on the occasion shows how well that honour was merited:—

"The remarkable accuracy which distinguishes all Mr. Bentham's scientific researches, the logical precision that characterises his writings, and the sound generalisations which his systematic works exhibit, may be in a great measure traced to the influence of his uncle, the late celebrated legal theorist Jeremy Bentham, who directed much of his early studies, and under whose auspices he published one of his earliest works, 'Outlines of a New System of Logic.' His mind was further imbued in youth with a love of natural history, and especially botany; and this taste was cultivated and nourished by a study of the works of the elder De Candolle. Fortunately for the cause of botany in England, Mr. Bentham has devoted himself almost exclusively to that science; and to his excellent powers of observation, close reasoning, concise writing, and indefatigable perseverance our country owes the distinction of ranking amongst its naturalists one so pre-eminent for his valuable labours in systematic botany. Amongst Mr. Bentham's numerous writings, those hold the first rank which are devoted to the three great natural orders, Leguminosæ, Labiata, and Scrophulariaceæ. These orders demanded a vast amount of analytic study; for they are amongst the largest and most widely distributed of the vegetable kingdom, and had been thrown into great confusion by earlier writers. They have been the subject of many treatises by Mr. Bentham, and especially of two extensive works, the contents of which have lately been embodied in the 'Systema Vegetabilium' of the De Candolles. On their first appearance these works secured for their author a European reputation, and will always rank high as models of skilful classification. It would occupy too much time to specify the very numerous monographs and papers which Mr. Bentham has communicated to various scientific societies and periodicals in this country and on the Continent, and especially to the Linnean Transactions and Journal. That 'On the Principles of Generic Nomenclature' may be noted as an example of his power of treating an apparently simple, but really abstract and difficult subject in a manner at once philosophical and practical. Mr. Bentham's work on British Plants is the first on the indigenous flora of our islands in which every species has been carefully analysed and described from specimens procured from all parts of the globe; it is distinguished for its scientific accuracy, advanced general views, and extreme simplicity—a combination of qualities which can result only from an extensive series of exact observations, judiciously arranged and logically expressed. The President then addressed



Mr. Bentham as follows:—The early volumes of the 'Philosophical Transactions' contain numerous papers relating to botany and the other sciences which are usually comprehended under the general designation of Natural History. As these sciences, but especially botany, became more and more extended, it was thought desirable that another Institution should be called into existence, which might share with the Royal Society the privilege of promoting the cultivation of them, and of communicating to the world from time to time the progress which has been made in this department of knowledge; and such was the origin of the Linnean Society in the year 1788. The Royal Society, however, does not on that account feel the less interested in this class of scientific investigations. It is accordingly with great satisfaction that the Council have awarded to you one of the Royal medals, and that in the name of the Society I now place it in your hands, in testimony of their high appreciation of your researches, and of the respect which they have for you as a fellow labourer in the field of science."

From that time till almost the end of his career Mr. Bentham worked perseveringly in the interests of the science which he loved. His works are his monument and will perpetuate his name for generations to come.

#### CHRYSANTHEMUM BENDIGO.

THE remarks on the above Chrysanthemum by Mr. Orchard, p. 221, are both opportune and excellent. I think many people are now of the opinion that the variety in question is neither more nor less than Mabel Ward. It certainly bears a strong resemblance to that variety in style of growth. We must not, however, condemn it before we have a thorough opportunity of seeing it in bloom; still, any variety of Chrysanthemum, as far I know, that has been produced by sporting bears a strong resemblance to its parent in habit of growth and other characteristics—for instance, Lord Wolseley, Lord Alcester, the Rundle family, and many others. I do not know of one kind that differs in any degree. Has not Mr. Orchard made a mistake in saying it was a sport from Princess of Wales? I understood it sported from Mrs. Heale. I think great care should be exercised by persons who award certificates to new varieties.

Mr. Orchard's suggestion that a growing plant be exhibited when in bloom at some Chrysanthemum show is a good one, and should be carried out to set the matter fully at rest.—E. MOLYNEUX, *Swanmore Park*.

#### AËRIAL ROOTS ON VINES.

I HAVE in two recent numbers of the Journal noticed some remarks on this subject. I have a viney 19 feet by 11 feet, span-roofed, very flat, with a path down the middle and borders along each side. The entrance from the west end is by steps 3 feet below the ground line, and during wet seasons, of which there have been many, I have a wooden lattice floor to pass over a foot of water at times. My four Vines have been subject to air rootlets, about which I sought information at all times when in conversation with those whom I thought competent to inform me. However, the difference of opinion was so great that I have been trying to find out myself what was the cause. Last autumn a number of the canes were brought down to the inner border next to outside, which I found this spring had rooted, the branches now having upon them very good fruit (Black Hamburg). The other branches began as usual to show aerial roots; but as the root-action of those laid down increased, these died by degrees, never having grown more than half to an inch long, and at the present time there is not one living. I conclude, therefore, that the comparative ungenial composition of the soil accounts in a great measure for the aerial roots. I should have said that my house has never been artificially so wet as this year, for I have given immense waterings for so small a place, while in former years no water was given inside, not even by the syringe.—WILLIAM BISHOP.

#### TUBEROUS-ROOTED BEGONIAS.

THERE can be no doubt that these rank amongst the best summer-flowering plants at present in cultivation. If grown cool, as they ought to be, they are quite exempt from the attacks of such insect pests as are common to many plants during the summer months. This itself is no small consideration, especially in establishments where there is not sufficient accommodation to allow of one house being set aside for one class of plants.

As decorative plants these Begonias are, from their rich and varied colour, all that can be desired, lasting in bloom from early summer till far into the autumn, when another strong point comes in in their favour, that of being easily accommodated during the winter. After they have been carefully ripened they may either be allowed to remain in their pots or shaken out and placed in boxes with dry soil or cocoa-nut fibre refuse—by the latter means they can be put in less bulk—then store in some dry out-of-the-way place where frost cannot reach them. Allow them to remain there until they show signs of starting again in the spring, when they should be potted at once and placed in a cool situation close to the glass to keep the growth sturdy. If a batch is wanted early the plants may be encouraged into quicker growth by being placed in gentle heat, but to render them really serviceable they should be grown cool all through.

If wanted for exhibition purposes named varieties are certainly most reliable. Many people object to them as exhibition plants, believing them to be "bad travellers." I grant that double varieties are, and mainly because of the weight of their blooms, but I find that singles, with a little care taken in tying and packing, will travel in perfect safety to any reasonable distance.

For ordinary decorative purposes seed procured from any reliable firm will, with a little selection, produce all that could be desired; in fact, I have this season flowered two-year-old seedlings, several of which are superior to many of the popular named varieties, both single and double. They are of such easy cultivation that anyone having command of a cold pit or frame need have no difficulty in growing them. A mixture of fibry loam, with a large per-centage of leaf mould and sand, with a little well-decayed manure, suits them well. With liberal shifts and plenty of drainage, taking care to keep the necks of the plants well up in potting and making the soil moderately firm (they do not like hard potting), fine specimens may be grown. Care should be taken in watering to keep it off the foliage. They do not like being exposed to the full rays of a hot sun, but shading should be reduced as much as possible by ventilating freely. When the plants have made all the growth they are likely to do for the season water should be gradually withheld, so as to give them the chance of drying off naturally. They have a tendency to damp off if kept too wet, and especially in the autumn, and careful watering is the only sure preventive.—J. A.

#### CRUTE'S CONCAVE FLOWER POT.

As will be seen by the figures the distinct feature of this flower pot consists in its concave bottom, which is designed to insure perfect drain-

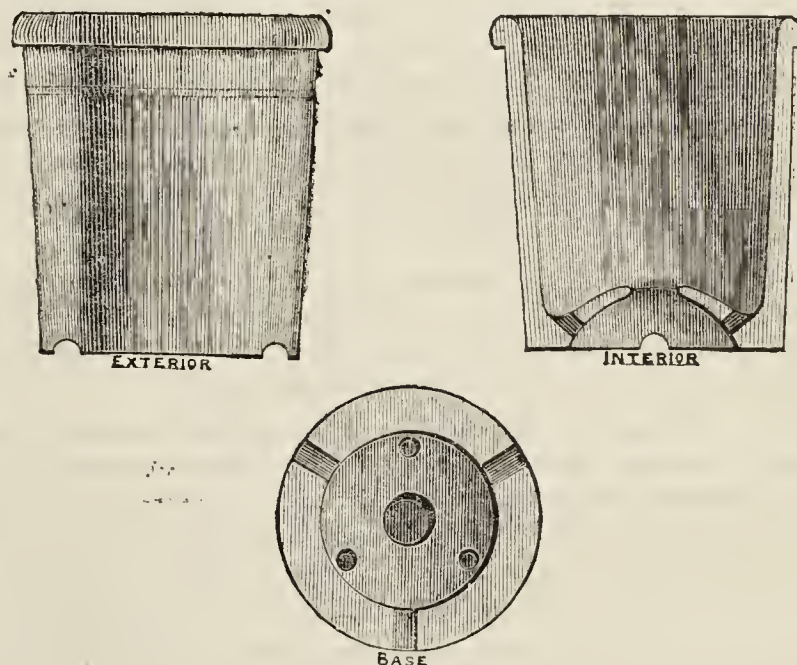


Fig. 44.

age, with comparatively few crocks, and at the same time to prevent worms passing from the ground through the drainage and injuring the roots of the plants. These pots will be suitable for all kinds of plants, and especially for Chrysanthemums, Roses, Camellias, Strawberries, and others that are arranged in the open air for several weeks or months in the summer. The invention has been patented, and the price of the pots, we are informed, will only be a trifle in advance of the ordinary flower pots. One of the new pots has been sent to us; it is well made, and the concave flower pot appears likely to answer the purpose for which it is intended. Cultivators, however, will no doubt test it during the ensuing season.

#### HOT WEATHER AND FRUIT TREES.

I DO not know what "Thinker" will think after a perusal of the article on page 234, but may I ask "An Old Gardener" to inform us where and when I stated that the "scarcity of fruit of the past few years has been more the result of immature wood in autumn than of frost in spring?" There is nothing of the kind in my article at page 191. If "An Old Gardener" had taken the trouble to read the first paragraph and the concluding one of that article he would have found that the weather was a consideration in the culture of outdoor fruits, and one giving cause for anxiety. Your correspondent begins and ends by ignoring facts, and makes or strives to make me state, and "Thinker" think what I daresay never entered the brain of either of us. I hope "An Old Gardener" will be spared nipping frost next spring, and then I have no doubt he will see the benefit of a hot summer in the gladdening presence



of an abundant crop of fruit. Unripe wood never gave it and never will; and I am pleased to find that he sets so high a value on ripe wood and well-plumped buds, beyond which nothing but favourable weather is wanted for bringing the crops we all hope to see.—G. ABBEY.



**GRAPES AT THE HEALTH EXHIBITION.**—At the Fruit and Vegetable Show to be held on the 23rd and 24th inst. at South Kensington in connection with the International Health Exhibition, the classes devoted to Grapes are very numerous, embracing as they do more than half the schedule. Valuable prizes are offered for collections, as also for special varieties, and spirited competition is expected, which will result no doubt in the greatest display of Grapes in London this season.

**LILIUM AURATUM.**—At the last meeting of the Royal Horticultural Society a *Lilium auratum* was exhibited by Mr. W. H. Counsell, Shenley Villa, Twickenham, in a 48-size pot, the plant bearing twenty-five flowers. No card was affixed to this plant when our representative left the conservatory, hence it was not referred to in the report of the meeting.

**WEIGHTS OF FRUIT.**—"A Gardener" desires to know the highest weights recorded of Peaches and Nectarines. As it is impossible for us to search through the whole range of gardening literature to procure the exact information needed, we simply make the request known in case any of our readers may be able to assist our correspondent.

**WE** are informed that Mr. Folkard's new work, "PLANT LORE," will be issued next week, and, judging from the voluminous "contents" table before us and the list of works consulted, the author must have been very industrious, and his work ought to be interesting.

**WE** are reminded that the third Show of the season in connection with the Cheltenham Horticultural Society takes place this day (Thursday) in the Montpellier Grounds in that town, and, judging by the large number of entries, a good show is anticipated.

**MR. BOWLZER**, The Gardens, Rokeby Park, Barnard Castle, referring to a note last week on **FERNS FOR BASKETS**, states he has grown *Adiantum farleyense* in a basket over five years, and exhibited one in a basket at Barnard Castle on August 22nd 4 feet across.

**MR. J. BEADLE** sends us from Sandling Park, Kent, a box of very beautiful **AUTUMN ROSES**. The blooms are not large, but charmingly fresh and good in colour, while the foliage is as fresh and clean as the flowers. The following are especially meritorious:—Charles Lefebvre, Général Jacqueminot, François Lacharme, Maréchal Vaillant, Duke of Connaught, Duke of Edinburgh, Fisher Holmes, John Hopper, Sénateur Vaisse, Alfred Colomb, Madame Bautin, and Mabel Morrison.

**LILIPUTIAN POTATOES.**—A singular Potato plant with its crop of tubers attached has been shown to us by Messrs. Carter of Holborn. Carters' Champion Forcing Kidney was crossed with Carters' Ashtop Fluke. The produce was planted (very small tubers) in March. All but one have produced potatoes of the ordinary size, the exception being the plant in question. This has a yield of apparently hundreds of potatoes, the largest not exceeding an inch in length and three-eighths of an inch in diameter, perfectly kidney-shaped, while the majority are not half that size. The stems of the plant and leaves are also small. The firm hopes to "fix" the novelty, with the object probably of serving the tubers like Peas or eating them with spoons. There is no telling what we shall get to in this Potato-improving epoch, only we can scarcely expect to have *much* smaller tubers than the sample in question.

**JEFFERIES' LITTLE QUEEN LETTUCE.**—Mr. A. Young writes: "I can fully endorse what is stated on page 202 concerning this Lettuce. I recommended it for the same purpose in the Journal two or three years ago. All-the-Year-Round Cabbage Lettuce has stood the drought wonderfully well this season, and formed capital hearts."

**CHRYSANTHEMUM MADAME DESGRANGE.**—The opening buds and expanding flowers of this white early-flowering Chrysanthemum show

what a useful variety it is for those gardeners who have a conservatory at this period of the year to keep gay. Intermixed with *Vallota purpurea* the combination is extremely effective.—J.

**TEA ROSE, THE HON. EDITH GIFFARD.**—This, writes "A Gardener," appears to be a good acquisition; its colour is flesh white shaded with salmon. It has been flowered continuously. The buds are of fine form, and do not expand too quickly.

**ROSE, MERVEILLE DE LYON.**—"This new H.P.," observes the same correspondent, "has done wonderfully well this season, and if it maintains its character it will be the finest light Hybrid Perpetual Rose we have."

**BOX.**—I am not aware of ever having seen Box used for other purposes than edging. When dead and dried it makes capital scrubbers for cleaning benches, walls, and trees. When tied in bunches and fastened to the ground vertically and horizontally by means of wire and posts, it makes excellent scrapers or boot-cleaners.—L. B.

**TOMATOES AT THE HEALTH EXHIBITION.**—In continuation of a system adopted at the International Health Exhibition of showing natural specimens, Messrs. James Carter & Co. are now staging upon their stand a very representative group of Tomatoes, comprising the following varieties, which will be interesting to cultivators of this popular vegetable:—Green Gage, Dedham Favourite, Vermilion Gage, Vick's Criterion, Stamfordian, Trophy, Carters' Model, Holborn Gem, Hathaway's Excelsior, Manpay's Superior, Queen of Tomatoes, Holborn Coral, Red Currant, Nisbett's Victoria, Grapeshot, and Red Cherry.

**A CRIMSON-FRUITED BRAMBLE.**—*Rubus parvifolius* is an extremely charming and pretty plant, well worth attention because of its crimson fruit, which is brighter and larger than that of *R. phoenicolasius*. It is free-growing but not rampant, and left alone it creeps on the ground and forms a close covering of green foliage. The leaves are pretty and very closely placed. This kind has been put down as a greenhouse evergreen, but Mr. Lynch informs us it is quite hardy in the Cambridge Botanic Garden. Native of China.

**GARDENING APPOINTMENTS.**—Mr. H. S. James, gardener to A. Laverton, Esq., of Farleigh Castle, and a very successful exhibitor at Trowbridge Flower Show, is leaving Farleigh to take the management of the garden of Charles Hill, Esq., at Clevedon Hall, Clevedon. He is succeeded by his brother, Mr. E. H. James, of Westbury House, Wilts. Mr. Henry Birch has succeeded the late Mr. Beech as gardener to the Marquis of Northampton, Castle Ashby.

**VICAR OF LALEHAM POTATO.**—This Potato, grown in a smoky midland town, has turned out remarkably well, a gardener in Walsal having tried it with other kinds this season. It gave a good crop of good-sized tubers, which are of excellent quality when cooked. School master in the same garden produced a poor crop and of inferior quality.

**SOLANUM JASMINOIDES.**—In one of the greenhouses at Mr. E. Holmes's nursery at Whittington, Lichfield, is a plant of this *Solanum* which has grown through the ventilators and formed a large mass of growth outside, on which there is now an abundance of fine clusters of flowers. It is a charming object just now, and it is evident that it can be made a useful summer climber against walls in situations which suit it. In the same nursery is a plant against a wall of *Ligustrum Quihooi* in bloom, with long panicles of flowers, a really handsome shrub for wall decoration.

**NUPHAR ADVENA.**—It is not generally known that this is the finest of the yellow Water Lilies. It is the most worthy of them to associate with the white Water Lily, the finest variety of which is *Nymphaea candidissima*. These two should be considered indispensable in all ornamental waters. The yellow Water Lily of which we speak is much like *N. lutea*, though much finer. Its leaves are massive, of dark green colour, projected above the water, and the flowers are yellow with orange-red stamens. It may be known by its six sepals, as all the others have five. Native of N. America.

**KEW GARDENS.**—At all times enjoyable and instructive, these famous gardens were never in more excellent condition than now. Every department affords evidence of skilful management. Not only are plants preserved, but they are cultivated. In the great Palm house the vegetation is of the most luxuriant character, the specimens large and small—and not a few are magnificent—as healthy as they can be



imagined in the Palm forests of the tropics. The ferneries appear to have been to a great extent remodelled, and certainly improved; the Filmy Ferns, of which there is a great collection, having found a location exactly suited to their requirements in a narrow case along the north side of one of the walls of the house. Among the aquatics the *Victoria regia* is flowering periodically, and the indescribably rich blue *Nymphaea zanzibarensis* should be seen by all, for it is truly magnificent. In the herbaceous grounds the *Helianthus* are very gay, one of the most distinct and attractive being *H. cucumerifolius*; and the Michaelmas Daisies, all the species correctly named, will be daily more interesting. The rockery should be seen. Instead of being almost new it is beginning to look old, and is one of the features of the garden; while growing in all its native grace *Cyclamen hederæfolium*, clustering among the grass, is charming. Garden-loving visitors who take advantage of the autumn excursions to the Health Exhibition should, if possible, reserve a few hours for Kew, and they will not be disappointed.

— *BEGONIA SOCOTRANA*.—Not many persons seem to know that the rootstock of this species must be broken up into its component parts before being started into growth. Each piece will make a plant, and if not separated the pieces together make only a starved mass. This is the easiest of all *Begonias* to increase, and now is the time for potting and starting it into growth. Each piece requires a separate pot, light rich soil, and good drainage. There is no other species at all like this. The rootstock alone is sufficient upon which to base a distinct section; and besides, this kind is one of the most beautiful and, it must be said too, one of the most useful, for it blooms in December and the winter season. Attention should be given to this fine plant at once.

— *VITEX NEGUNDO* VAR. *INCISA*.—Autumn-flowering shrubs are by no means common, so that it is not unimportant to notice this one, which is possessed of very much intrinsic merit. It is extremely rare, and, unfortunately, not perhaps very easy to obtain, as it belongs to a class which of latter years has not been sufficiently remunerative to nurserymen. It is of that moderate vigour which so many delight to find in plants not exceeding 4 or 5 feet in height. The habit is bushy, leaves digitate, each leaflet coarsely serrated, and every branch terminates in a panicle of small lavender-coloured flowers, which last through several weeks of August and September, and now in the middle of the latter month it is in very good condition. It is a native of China, and is perfectly hardy. The specimen which elicits our observation has grown for many years in the Cambridge Botanic Garden.

— *HYDRANGEA QUERCIFOLIA*.—This is another summer and autumn-flowering shrub, very handsome and effective both in flower and foliage. It is extremely good as an isolated lawn specimen, where it must attract notice on account of its distinctive character. It grows about 4 feet high, branches freely, and bears large leaves deeply lobed and sinuated; the flowers are white, and appear from June to September. This is by far the finest of the North American *Hydrangeas*. It comes from Florida, and is perfectly hardy.

— *PASSIFLORA FORTIDA*.—Though the flowers of this species are not showy there is much beauty in them, and on account of one feature which we may call remarkable they are highly attractive. This feature belongs to the involucre—those bracts situated directly beneath the calyx. There are three of them, each one much divided and subdivided into slender divisions, and the ultimate divisions terminate in a gland which glistens with copious secretion just like *Drosera*. This is the curiosity; but as the three parts of the involucre curve slightly over the pure white corolla, inside of which there is a beautiful flesh-tinted corona, the whole can only be described as lovely. Unfortunately, these flowers are of short duration. The involucre, however, enlarges and persists for some time, enclosing the egg-shaped fruit. The flowers are very numerous but not large. The species is widely spread over the tropics, and the plant of which we speak in the Cambridge Botanic Garden was raised from seeds received from Mr. Thompson of Ipswich under the name of *Passiflora pectinifera*.

#### LIFTING PEACH TREES.

I THINK if "Thinker" had experience of Peach-tree growing in every part of the British Isles he would in some situations find it quite necessary to lift the trees annually, as soon after the fruit was gathered as possible. Here, in the south of Ireland, the rainfall is very great, and the atmosphere so much laden with moisture that it is not unusual for Plum trees to push roots in great numbers from the branches, which I have taken

6 feet in length from the trees, and planted them and formed youngsters. Peach trees here that are not lifted in autumn seldom lose their leaves until February, and sometimes we have both old and new leaves upon the trees at the same time, although the trees are planted in well-drained borders with the necessary calcareous and alkali matters. To all that are in such situations, I say, Lift the trees annually.—W. O., *Fota, Co. Cork*.

#### GLADIOLUS J. C. BROTHERSON.

I WILL feel obliged for your opinion of the seedling *Gladiolus* forwarded. I have named it "J. C. Brotherson." It bloomed last year for the first time. I had two bulbs planted last spring. The spike sent is from the smaller bulb; the larger, as it bloomed earlier, being used for seeding purposes. Both plants are over 6 feet high. It was the same height last year. The plants are growing on a dry sunny border within 3 feet of a brick wall; the only attention they have had was the ground well dug and manured last winter, and they have had twice a good watering during the dry summer. Early in July the ground was mulched with manure. The flowers have not been shaded, but fully exposed to the sun. I have seen some fine stands of named flowers lately, but I do not think I have seen any individual flower more distinct than the one sent for your opinion. Last year, owing to a more moist season and growing in a cooler situation, both flowers and spike were larger. By-and-by I may send you a few notes how we have grown our seedling *Gladioli*. The seed was sown in spring, 1881; from that time the bulbs have never been dried. Nothing can be more healthy than the plants, which are as "green as grass." You will notice the thickness of the petals; the flower stems are as thickly covered with bloom as a Black Alicante Grape.—JOSEPH OLIVER, *The Gardens, Eslington Park, Alnwick*.

[Both spike and flowers are splendid; the latter large, smooth, and of remarkable texture. The colour is soft scarlet tinged with rose, with a clear white well-defined stripe down each segment, three-fourths of the lower division being pure white tipped with bright scarlet. We shall be glad to have the notes referred to.]

#### SMALL FRUIT AND JUDGING.

ONCE more "J. E. W." has plunged into the field of controversy. Surely he must be one of those persons who are most at home when differing from others. Respecting winter Onions getting prizes amongst Onions sown in spring, I can vouch for the fact that there are growers in Kendal and district who know how to grow Onions to perfection; and if they think fit to sow a packet of Tripoli along with somebody's Excelsior during January or February in a frame or cool greenhouse, carefully transplant, cultivate well, afterwards bring them to the exhibition hall staged with care and taste, what power have the judges to do otherwise than to give the prizes to them, if deserving? With regard to Grapes, Melons, Peaches, &c., being staged as "small" fruits, no wonder your good-humoured "Thinker" was a little inquisitive. He might be excused for thinking little of the gardeners' experience who ventured to include any of them in such a class. I have on occasions exhibited in such a class, and with success, but had no doubt as to its true meaning, which, taken from the schedule, runs as follows:—"Collection of small fruits, six varieties, including red and white Gooseberries;" the latter clause, in my opinion, being sufficient to suggest that hardy fruit must be shown. I even went so far as to refrain from staging Early Rivers Plum to make up the collection.

As regards the somewhat unusual way some of the collections of vegetables were staged, I would ask if judges were to blame in the matter? They did what was best under the circumstances. Numerous little instances may be sought out when hard-and-fast rules are not adopted. I have exhibited now a few seasons at Kendal successfully, and no committee can be more ready to accept any useful suggestion that is placed before them. Your correspondent may by some means find pleasure in public controversy, but surely learning is to be had without wrangling.—E. BURTON, *Kirkby Lonsdale, Westmoreland*.

[Our opinion is that all collections that contained Grapes, Melons, and fruit grown under glass in the class quoted ought to have been disqualified.]

#### TIGRIDIAS.

I AM at a loss to discover what object "Specialist" had in view when writing the article on *Tigridias* at page 234, as he decidedly states his intention of never departing from his present method of planting. With reference to the question of soil, I have never had the pleasure of growing *Tigridias* in very light sandy soil, and the nature of my employment gives me a very intimate knowledge of the state of the weather in the months alluded to. However, if "Specialist" is willing to come to Swanley, either Mr. Cannell or myself will be very pleased to show him several thousands of *Tigridias* planted in the manner stated by me, and he can then judge for himself of their condition. For the remark as to the hardness of *T. Herberti* I am grateful, and hope soon to test its accuracy. As I did not attempt to give any directions for the pot culture of these plants, I will allow "Specialist" to have the monopoly of his extended drain pipes.—G. GUTHRIE.

WHITE CACTUS DAHLIA CONSTANCE. — My experience with this Dahlia is much different from that of Mr. Welch. I consider it a very



fine decorative variety. When well grown it is most useful for cutting for home and church decoration where white flowers are largely used. It is fine for the mixed border when associated with the Juarezi variety, its colour being very telling, and if Mr. Welch procures strong plants, plants them in good soil with a liberal addition of manure, waters freely during summer, and keeps the shoots well tied up, I think he then will have little cause to complain. Has he treated it thus?—E. MOLYNEUX.

### THOUGHTS ON CURRENT TOPICS.

I THOUGHT when I saw my "thoughts" in print a fortnight ago that there was "too much of a good thing." I am simply expressing in a familiar sentence what I feel must have been the opinions of others, and have no desire to judge my own work and pronounce it "good." Honestly speaking, I was surprised by the quantity and disappointed in the quality of my jerky production—so different does matter appear when printed than when it runs direct from the pen on a sheet of foolscap. However I will not be dismayed, but will "think" again.

It will be proper, I think, to first refer to those who have referred to me, and thus I come in contact once more with "An Old Gardener." I am obliged to remark that, like some other controversialists, he has based his argument (page 234) on a fallacy. If he will do me the honour to refer again to my "thought" on page 210, he will find that I did not even remotely suggest that the blossom of fruit trees is rendered more hardy by the ripening of the wood. I referred to the formation of blossom buds alone as likely to be the result of the hot summer. Time will prove whether this is so or not, and I confidently await the issue. In the meantime I may as well say what I think on the subject in question, and that is, I like to see the wood of my fruit trees ripe in the autumn, for the simple reason that I then feel one important point is secured towards a crop of fruit.

If the blossom of sound ripe wood is not more hardy than that produced by immature shoots, are not the organs of fructification often perfect in the former case and imperfect in the latter? If that aspect of the question is thought about we shall perhaps find a reconciliation of the conflicting statements of two writers, one of whom intimates that old orchard trees are fruitful, while younger trees in gardens are barren, while the other states "the young trees have it all their own way." Here is the sequel. If the old trees are much stunted and enfeebled there is little or no pollen on the anthers, and what little there is is weak; but young trees well managed—that is, not over-luxuriant, have the wood ripened, and the pollen is abundant and strong. We thus see, or at least I think we ought to see, that a certain amount of vigour must accompany maturation for trees to be in a satisfactory bearing state. This subject opens a wide field for thought, and I must leave it open for occupation by others who can indulge in mental exercise on a matter of great importance.

I HAVE another difficulty to meet, a lime-and-chalk difficulty, but before tackling it I have a "crow to pull" with "R. P. B." on the subject of Apples. I find no fault with what he says on page 212; it is to what he does not say that I wish to draw attention. When a person who evidently knows what he is writing about states that "the only dessert Apples worth growing are one or two such as Irish Peach and Devonshire Quarrenden," I think he should at least either indicate the district from which he writes, or state the prevailing climatical conditions of the locality. For aught we know to the contrary he may be near an Irish bog; on a Scotch ben (mountain); or in a Devonshire dingle. Such statements as that cited, I think, need qualification to render them of service to general readers and inexperienced cultivators. Other writers err in the same way. They are either reticent or forgetful, hence the full significance of this communication is not comprehended by all.

Now to the lime-and-chalk questions of "A Learner." I thought when I read the little note on page 238 that it conveyed an excellent hint to persons not to write about matters that they do not understand, for there is no knowing what questions may be asked, and some of them may not be easy to answer. In this instance I feel a little difficulty in crushing an intelligible reply into a few inches of space, and I am no hand at long articles.

In the first place I must inform your correspondent that lime can be converted into chalk as easily as chalk into lime, and a great deal cheaper; for in the latter case fire must be employed, while in the former the air will effect the transformation. Chalk is carbonate of lime, and is composed of about 45 parts of

carbonic acid and 55 of lime. When chalk is burnt the carbonic acid is driven off and we have pure lime. If this lime is exposed to the air it absorbs carbonic acid, and necessarily becomes carbonate of lime again, or chalk. That is, I think, a fact.

ANOTHER fact is—and this I had in view when I jotted down my thought for applying chalk to Peach tree borders—that as this ingredient does not abound everywhere, ordinary lime can be converted into chalk simply by exposure. Limestone and chalk in their normal state are both composed of lime and carbonic acid in nearly the same proportions, hence lime that is made from the former is identical with that from the latter. This is perhaps what "A Learner" and others have not fully comprehended, but again I think it is a fact.

WE have now to consider that carbonate of lime is an essential food of plants. It is found in the ashes of nearly all of them. In trees it especially abounds—that is, when it is present in the soil in which they are growing, and probably nine trees out of ten do not get enough of it, while it is certain that thousands do not get half sufficient, and among these I suspect are the Peach trees that failed to bear because not lifted annually.

BUT if chalk—that is, carbonate of lime, is so good, why burn it, as is the practice for applying to the land? There are two fundamental reasons for that. Freshly slaked lime being finely divided can be far better incorporated with the soil than lumps of chalk can; and, further, the action of lime as a manure is very much quicker than chalk is, because it acts as a solvent of vegetable and mineral matters in the soil, rendering them immediately available as food for plants. For Potatoes and general farm and garden crops lime is far preferable to chalk, as it is also for many fruit trees; but when I read of Peaches that are lifted and given fresh soil annually, I always think turfy loam is used, and if it is and does not contain 10 per cent. of chalk there is certainly a preponderance of vegetable matter, and to add lime that matter would be dissolved the quicker and the trees would grow the stronger—just what we desire to avoid; hence I think in such a case chalk finely divided is the proper substance to employ. I now think the questions of "A Learner" are answered; if not, and he will point out any omissions, I will try again.

ANOTHER practical question arises—namely, how are we to determine whether a Peach tree border, or any other border, is deficient in chalk or not? as I think the soil is in the case previously referred to. The matter may be tested in this way. Take a portion of soil from about the roots of the trees, dry it in an oven, then to every ounce of soil add slowly 2 ozs. of muriatic acid (spirit of salts); if the soil contains chalk the mixture will effervesce by the expulsion of carbonic acid, while if there is no effervescence there will be no chalk, and that will be proof positive that the soil is deficient in one of the most essential ingredients for the support of the trees. Without carbonate of lime in their composition—and it cannot be there if it is not first in the soil—Peach trees will extend freely enough but they will be apt to cast their buds, and if the fruit sets it will be liable to fail during the stoning period.

YET another thought. Supposing the soil of the Peach border is shown to contain no chalk, how much are we to give? I should apply at once at least 10 per cent., mixing it with the soil, and twice that quantity would do no harm. There is much more than that in the best pasture lands and fruit-growing soils in Kent and other places; and more also in the ash of Peach trees when the roots get all they need. This subject is worth further thought by all whom it concerns, and I will leave them to think about it, as I feel I have done my share at present.

I THOUGHT when I read Mr. Ward's excellent and exhaustive article on Pines a fortnight ago, that every young gardener ought to make himself master of the process described. Pine Apple culture may yet become fashionable, while hundreds of young men know nothing about it. As an old Pine-grower, there were two points in the article that I stumbled over; the first was 12-inch pots for fruiters. Are not 10-inch pots just as good? and if not, why? Next, I thought 8 ozs. of soft-soap to a gallon of water would nearly make jelly. Has the writer of the article or the printer made any mistake? I should have thought half the quantity of soft-soap ample, and shall not try the double dose until I hear further about the matter.

SOME useful hints having recently been given on destroying



the Celery maggot I thought I would try one of the remedies suggested—petroleum. I am glad to say it has answered the purpose, for it has undoubtedly killed the maggots without in the slightest degree injuring the plants; on the contrary, it

hearts of the plants, or we might have petroleum-flavoured Celery, which would, perhaps, not be enjoyed by many palates. The tobacco water remedy is also worth trying by persons whose Celery is attacked by the destructive pest in question.



Fig. 45.—COE'S GOLDEN DROP PLUM (See page 266).

appears rather to have benefited them. Yet I think it will not be advisable to apply the remedy very late in the season, or at any rate in sufficient quantity to wet the stems or fall into the

I THOUGHT Mr. Muir's note on judging spring-sown Onions a sensible one. It is no particular point of excellence to have bulbs dried in July or August at the expense of size. Nor does



it appear exactly fair that autumn-sown Onions should be awarded prizes that are offered for Onions raised from spring-sown seeds.

I DON'T think very much of Dr. Nichols' theory of stratified Vine borders, however well such borders may have answered in his practice. I have seen such borders made and fail to give remarkable results, and I have very grave doubts if anything like such fine Grapes have ever been grown in America in stratified borders as are produced every year in England when fertilising ingredients are judiciously incorporated with the soil. There is, however, no doubt as to the value of the mixture recommended of bone-meal, wood ashes, and gypsum for Vines, as bones give phosphate of lime, wood ashes potash, and gypsum sulphate of lime, all of which are constituents of Vines and fruit trees. Such a mixture would benefit many garden crops, notably Potatoes, nor is it necessary to use water in the preparation as recommended on page 220.

AND so it is at "Kendal, Ulverston, Barrow, and many places around," where all kinds of fruit grown under glass are admitted in'o competition in classes for "small" fruits. I think under such circumstances the sooner the word "small" is expunged from the schedules the better, for anything more misleading and even absurd was perhaps never heard of in the history of exhibitions.—A THINKER.

#### PLUMS IN POTS.

LAST year Mr. Hawkins, gardener to Col. Turbeville, Ewenny Priory, Bridgend, sent us a fine example of his success in growing Pears in pots; he has now sent us a cluster of Plums which the engraving fairly represents, and we suspect not many of our readers have seen a better cluster of finer fruit cut from a tree in a pot. As regards culture, Mr. Hawkins states, "The Plums are grown in a cold house, the trees being repotted annually just before the leaves drop. Soil is taken from waste patches on the roadside. The soil is only got a week or two before using, and it is mixed with about a fourth part of its bulk with manure from a Cucumber bed. After potting the trees are heavily watered and placed back in the house as close together as possible. They are then syringed once or twice a day until most of their leaves drop; this is considered important for keeping the buds plump. When signs of frost appear the pots are covered with straw to prevent their bursting. The house is never closed until trees commence to start into growth and spring frosts are imminent. They receive in the growing season liquid manure which drains from the dung heap, this being all that has been used for some years, and it is given twice a week. A little bone manure mixed with the soil for potting is found advantageous." Such is the method of culture that has resulted so satisfactorily. Many persons fail in growing fruit trees in pots by keeping the houses too close during the winter, and thereby dangerously accelerating the expansion of the blossoms. Mr. Hawkins makes no such mistake, and we congratulate him on his success. The variety is Coe's Golden Drop, the exact size of the fruit being shown in the figure on the preceding page.

#### THE DUNDEE INTERNATIONAL SHOW.

SEPTEMBER 11TH, 12TH, AND 13TH.

IT is now eight years since the last great International Exhibition was held in Dundee, and the present season having been thought a suitable one for another attempt to prove that the love of horticulture is not diminishing in Scotland, the Committee of the flourishing Horticultural Society determined to inaugurate a similar Show. In this object they have been liberally assisted by numerous friends, and were thus enabled to issue a prize list offering unusual encouragements to exhibitors, the result being a corresponding influx of entries and proportionately high quality of exhibits. It has been repeatedly proved that the only way to obtain an exhibition of more than ordinary merit is to render the prizes so substantial that growers will be induced to send their choicest productions, and, by exciting a certain rivalry amongst the leading cultivators, bring them into the arena to test their respective strengths. Fully recognising the importance of this matter the Dundee Committee have very carefully prepared their schedule, making liberal provision for all the most important productions, and when it is stated that 350 competitors entered the lists sufficient evidence is afforded that the efforts were appreciated.

Fruits were afforded the first place, seventy-one classes being devoted to them, the first fifty-nine of which were open to all, and the remainder confined to amateurs. In the first-mentioned classes the principal were for a collection of sixteen sorts of fruits, the prizes being £20, £15, and £10, which is regarded as the leading class in the Show. Next in importance were the classes for twelve and eight sorts of fruits respectively, for which the prizes offered varied from £15 to £4. Pine Apples had five classes appropriated to them, the prizes being from 60s. to 10s. For Grapes very liberal provision was made. In the most important class for eight varieties, one bunch of each, the prizes were £15, £10, and £5; while for six and four varieties the highest

prize was £8 and the lowest £2. Thirteen classes were devoted to special varieties of Grapes, two bunches of each, and fourteen were provided for single bunches of the principal varieties, including special classes for the heaviest, the finest-bloomed, and the best-flavoured Grapes. This was a highly important portion of the Exhibition, and attracted much attention from the numerous gardeners who assembled at the Show on the morning of the opening day. Melons, Figs, Peaches, Nectarines, Apricots, Plums, Pears, Apples, Cherries, Gooseberries, and Currants all had classes devoted to them, and in the majority the competition was exceedingly keen, the total number of entries in the fruit section being 530.

Plants were accorded the second place in the schedule, twelve classes being confined to nurserymen, thirty-seven to gardeners and amateurs, and twenty-one to amateurs only. In the first section the leading class was for a table of plants 20 feet by 8 feet, for which £20, £15, and £10 were offered, similar amounts being contributed in the second section for twelve stove and greenhouse plants. Proportionate prizes were also offered for miscellaneous plants, such as Begonias, Pelargoniums, Liliums, Heaths, Fuchsias, Eucharis, Ferns, Palms, Coleuses, &c. The entries of plants were 330, the smallest number in any of the sections, and with the exception of some of the groups for effect and a few collections of specimens they were the least remarkable in merit, though the majority were clean and healthy.

Cut flowers formed an extensive portion of the Show, and the number of entries far exceeded those in the other sections, 835 collections being staged, which, as may be readily imagined, occupied considerable space, and arranged as they were on tables in front of the main hall, they had a beautiful effect. Fifty-two classes were appropriated to them, the prizes ranging from £3 to 3s.

Vegetables also constituted an exhibition of much interest, and competition was all that could be desired, some of the 765 collections being distinguished by extraordinary size and merit, for there are several redoubtable growers in the district round Dundee, but particularly in Perthshire. Thirty classes were included in this section, and the prizes varied from £4 to 3s. It has, however, been pointed out that there were some little inconsistencies in the proportionate value of the prizes offered for different vegetables, but these could not be readily avoided, and if the Committee erred in giving rather higher prizes for some vegetables than they deserved, it was an error on the right side.

The total value of prizes offered was thus over £1000, and in addition to those provided by the Society, the special prizes offered by the Veitch Memorial Trustees were amongst the most interesting. These were three Memorial medals and £5 with each for the best specimen Orchid in flower, for the best stove or greenhouse plant in flower, and for the best two bunches of Grapes, one variety. They were to be awarded for specimens shown in any class by amateurs or gentlemen's gardeners, and were intended as additional honours for exhibits of unusual merit, but unfortunately in the case of the plants the Judges had great difficulty in finding any specimens worthy of such high honours.

As on the occasion of the International Show at Dundee in 1876, the spacious Drill Hall and grounds were devoted to the exhibits. Abundant room is there afforded for the entries at all ordinary shows, but at this one considerable difficulty was experienced in disposing the numerous productions to the best advantage, which was still further increased by the formality of the building. Advantageous as it may be in many respects, such as proximity to the stations, its central position permitting the townspeople to readily visit it, and facilitating the conveyance of exhibits, yet it must be admitted that it is not one of the best for a flower show, at least in a picturesque point of view. With the utmost care it would be impossible to produce the same general effect which is secured in the large exhibition house at Manchester, the great marquee at the Botanic Gardens, Regent's Park, or even in the series of marquees at the York gala. To compensate for this defect, however, it must be remembered that the weather in September is very uncertain, and it would be impossible to hold a three-days show under canvas with the same degree of safety to the exhibits as in such a hall as this, so that the Committee are fully justified in sacrificing the ornamental to the useful; and as the chief object of a horticultural exhibition is to afford gardeners an opportunity of comparing and thus improving their produce, the mere effective beauty is of little consequence, more especially in this case, where fruits and vegetables formed the principal portions of the display. As regards the plants, however, much taste was exercised in their arrangement. The groups and larger collections were elevated on low tables 2 feet high, which enabled visitors to see them to the best advantage. The clothing of the edges of these was, however, left to the exhibitors, and in some instances there was a bareness that was far from pleasant; in fact, wherever the wood was visible it detracted from the appearance of the groups, and had it been covered with baize or painted a dull green the effect would have been greatly improved. In several other cases the higher tables devoted to fruit and vegetables were similarly unsightly, and was remarked by many visitors.

The Dundee Horticultural Society has latterly gained the well-deserved reputation of holding the best shows in Scotland, and it is therefore doubly satisfactory to be able to record another decided success, for though the Exhibition now under notice was international only in name, it yet deserves a high position amongst the best of the kind held in recent years. The Society is under most influential patronage, has a large practical and energetic Committee of gardeners, nurserymen, and amateurs, and is, moreover, particularly fortunate in securing Mr. J. P. Scott as Secretary. The success of a show is greatly dependent upon its Secretary, and Mr. Scott appears to possess in a high degree the qualities most needed in such a functionary—namely, courtesy, energy, and a methodical system of working, the consequence being that the multiplicity of details connected with such a show were all disposed of with a smoothness that was most creditable. In marking out the positions of the exhibits considerable care was also exercised, every place being numbered, and in affixing the prize cards a simple but effectual system was adopted. An envelope with the name of the exhibitor written under the flap was placed face upwards to each entry; upon these the Judges marked the awards, and different coloured cards for first, second, and third were then filled in and placed upon the exhibits. The only disadvantage in this was that a large number of clerks had to be employed, but the work was quickly and correctly performed, and that is of the most importance.

The total space occupied by the Show was about 46,000 square feet, the ground in front of the main hall where the covered tables were occupied with



ut flowers is 300 feet long by 85 feet broad. The hall containing the bulk of the plants is 161 feet long and 80 feet broad; a second hall, also devoted to plants, fruits, and the honey exhibits, is 100 feet long and 80 feet wide; a space in the rear similar to that in front, but about half the length, being devoted to vegetables. A large staff of Judges was engaged, including some of the leading horticulturists in England and Scotland, those in the several sections being as follows:—For Fruits: Messrs. A. F. Barron, Chiswick; Malcolm Dunn, Dalkeith Palace; R. Westcott, Raby Castle, Darlington; John Webster, Gordon Castle; John Fowler, Castle Kennedy; Thomas Lunt, Ardgowan; and James Morrison, Archerfield. For Plants: Messrs. B. S. Williams, Upper Holloway, London; T. Baines, London; J. Routledge, Freeland, Perth; and J. Lindsey, Curator, Botanic Gardens, Edinburgh. For Cut Flowers: Messrs. John Downie, Edinburgh; James Grieve, Bury St. Edmunds; George Wyness, Usan; and R. P. Brotherton, Tynninghame. For Vegetables: Messrs. Thos. Ormiston, Alloa Castle; A. Mackinnon, Scone Palace; J. Browning, Dupplin Castle; and P. Whitton, Methven Castle.

All day on Wednesday and throughout the night exhibitors were busy staging their contributions, as judging was timed to commence at 7 A.M. on Thursday morning, and so well were the arrangements carried out that very little delay occurred. The Show was opened to the public at 11 A.M. by the Right Hon. the Earl of Strathmore with an appropriate speech, and a large number of visitors soon assembled, the hall being crowded throughout the day.

#### FRUIT.

A grand display of fruits was provided, and though a few weak samples were observable in several of the classes, the majority of the exhibits were distinguished by more than ordinary merit. This especially applies to the collections and Grapes, which included some extremely fine specimens. Hardy fruits were also fairly well represented, and Apples were much finer and more numerous than might have been expected this season. After the collections, however, the Grapes formed the largest and in every way the most important portion of the fruit show; but the exhibits in these classes varied considerably in quality, some being extraordinarily fine, and a few were not fit for the exhibition table.

**COLLECTIONS.**—The leading class was that for sixteen sorts of fruits, in which there were four competitors—Mr. McIndoe, gardener to Sir J. Pease, Bart., Hutton Hall, Guisborough, Yorkshire; Mr. G. Johnston, gardener to the Earl of Strathmore, Glamis Castle, Forfar; Mr. David Murray, Culzean Gardens, Maybole; and Mr. Goodacre, Elvaston Castle Gardens, Derby. All these were very close in merit, but the collections from the first two exhibitors named above were particularly meritorious, and the Judges had exceedingly great difficulty in determining which should take precedence. After a careful comparison it was, however, decided in favour of Mr. McIndoe, who won the premier award by a few points only, though in the opinion of some experienced horticulturists present there was a clear difference in the merits of the competing samples. The Yorkshire fruits comprised the following varieties:—Grapes, Black Hamburg, good bunches, and berries of medium colour; Trebbiano, very large, but some of the berries were rather green; Gros Maroc, large and finely coloured; Muscat of Alexandria, of rather indifferent quality, one bunch well coloured, but slightly withered, and the other was greenish. The two Melons, Scarlet Premier and Best of All, were strong points in this collection, as they were beautifully ripened and superbly netted; very seldom indeed are such handsome specimens seen at exhibitions. The Pines, Smooth Cayenne and Queen, were also very even and well developed. Peaches, Princess of Wales, were large and handsome, Violette Hâtive being finely coloured. Nectarines Humboldt were well ripened. Durondeau Pears, Brown Turkey Figs, Magnum Bonum Plums, and Green Gages, all ripe and of good appearance, completed a most creditable and praiseworthy collection, and one which well deserved the honours it gained.

Mr. J. Johnston's collection, though second, was one that any grower might have been proud to own. It included dishes of the following:—Grapes, Raisin de Calahre, large and of fair colour; Madresfield Court, fine berries, but not quite coloured to the hase; Muscat of Alexandria, finer than those in the first stand, of better colour, and altogether preferable; Black Alicante, small berries, but finely coloured. The Pines were rather irregular, the Smooth Cayenne was large and well proportioned; but the other, Prince Albert, was much smaller, though well ripened. Pitmaston Orange Nectarines were fine; Green Gage and Victoria Plums were similarly good; Morello Cherries, Red Magdalen Peaches handsome, Stirling Castle Peaches excellently coloured, Moorpark Apricots, and a pretty dish of Duc de Telliers Nectarines. The third position was gained by Mr. David Murray, who had a less even collection, and rather weak in one or two dishes, but yet included some fine specimens. The Grapes were Madresfield Court, even bunches, not quite sufficiently coloured; Raisin de Calahre, very large and handsome; Gros Guillaume, large; Muscat of Alexandria, good size bunches and fair colour. The other dishes were Smooth Cayenne Pine, Brown Turkey Figs, Coe's Golden Drop Plums, Royal George Peaches, Pitmaston Orange Nectarines, Kirke's Plum, Worcester Pearmain Apples, Conqueror of Europe and Bloxholm Hall Melons, and Williams' Bon Chrétien Pears, all of medium size, but mostly well ripened.

In the class for twelve sorts there were three competitors, Mr. D. Dickson, gardener to J. Balfour Melville, Esq., St. Andrews, winning the leading prize with finely coloured Black Hamburg, Gros Colman, and Muscat of Alexandria Grapes; handsome Orange Apricots, large and finely coloured; Victoria Nectarines, rather green; Barrington Peaches, large and handsome; White Ischia Figs, good; Blenheim Orange, and Best of All Melons; Walburton Admirable Peaches, fine and well ripened; Kirke's Plums, large; and Williams' Bon Chrétien Pears. Mr. McKelvie, gardener to the Duchess of Roxburghe, Brixmouth Park, Dunbar, was placed second with fruits but few points behind the others, his most noteworthy dishes being Muscat of Alexandria and Black Alicante Grapes, fine bunches and excellently coloured, especially the last named; Nohlesse Peaches and Elruge Nectarines, good; Moorpark Apricots, large and handsome; Barrington Peaches of great size; and Carters' Emerald Melon. Mr. David Ross, The Gardens, St. Martin's, Perth, was third, showing Red Masculine Apricots and Gosford Black Grapes in capital condition.

There was the same number of exhibitors in the class for eight sorts of fruits. Mr. J. Day, The Gardens, Galloway House, Garlieston, was first,

staging Muscat of Alexandria and Alicante Grapes in fine form, good in size, colour, and bloom; Princess of Wales Peaches and Magnum Bonum Plums were also notable dishes in his collection. Second honours were secured by Mr. P. W. Fairgrieve, gardener to the Duchess of Athole, Dunkeld, whose best dish was Welbeck Seedling Nectarines, and the third place was accorded to Mr. A. Smith, gardener to J. H. Gilchrist, Esq., Speddock, Dumfries, who had a fine bunch of Buckland Sweetwater Grapes well ripened.

**GRAPES.**—A considerable portion of the space devoted to fruits in the central hall was occupied by the Grapes in competition, and as thirty classes were appropriated to them it may be readily imagined that they required some extensive accommodation. One side of the table, 100 feet long, was filled with the Grapes, besides some yards upon the opposite side, and very rarely indeed are so many fine examples seen together. It is true that the critical observer might detect several defective bunches, and perhaps there was a slight want of colour in the white varieties generally, but the black Grapes mostly carried a good bloom.

**Collections of Varieties.**—A class was provided for eight bunches of Grapes, distinct varieties; and six fine collections were entered. Mr. David Murray succeeded, gaining the chief position with superb, even bunches, well ripened and grandly coloured. It included some of the best Grapes in the Show, and Mr. Murray well merited the honour he so ably won. The varieties represented were Madresfield Court, compact well-formed bunches, finely coloured; Golden Queen, clear, rich, good colour; Alnwick Seedling, fine in bunch and excellent colour; Gros Guillaume, large and bearing a good bloom; Muscat of Alexandria, remarkably handsome, possessing that rich amber tint so rarely seen; Black Alicante; Mrs. Pince, even and well finished; and Foster's Seedling, good in size of bunch and berry, and fairly ripened. Mr. Kirk, gardener to J. T. Paton, Esq., Alloa, won second honours with a fine collection, comprising Black Hamburg, finely coloured; Duke of Buccleuch, wonderfully fine in bunch and berry, and equally well ripened; Lady Downe's, beautifully coloured; Alicante, splendid bunch; Muscat of Alexandria, excellently ripened; Alnwick Seedling, pure colour, dense bloom; and Buckland Sweetwater, well ripened. Mr. McKelvie was third with large bunches, but not so well coloured as in the two preceding collections. Muscat of Alexandria, Buckland Sweetwater, and Alnwick Seedling were, however, well shown. For six varieties, one bunch of each, there were again three entries, Mr. Dickson taking the lead with Golden Queen, rather green; Alnwick Seedling, fine colour; Muscat Hamburg, large bunch, rather red; Gros Colman; and Black Hamburg, large bunches of medium size but good colour; Muscat of Alexandria, beautifully ripened. Mr. J. Reid, gardener to Provost Moncur, Dundee, followed, showing splendid examples of Gros Colman and Muscat of Alexandria, but the latter was slightly wanting in colour. Mr. Hammond, gardener to Sir Wilfrid Lawson, Bart., Brayton, Carlisle, was third, staging Gros Maroc and Raisin de Calahre of great size. There was keen competition in the class for four varieties, no less than eleven collections being staged. Mr. Thomas Boyd, gardener to Wm. Forbes, Esq., Callender Park, Falkirk, was accorded the premier place for very handsome examples of Lady Downe's, Alicante, Muscat of Alexandria, and Black Hamburg, all beautifully coloured. Mr. Day followed, having Alicante, Muscat of Alexandria, Gros Colman, and Foster's Seedling, well ripened. Mr. Loudon, The Gardens, The Quinta, Chirk, was third, his best bunches being Muscat of Alexandria and Gros Colman.

Thirteen classes were devoted to the leading varieties of Grapes separately, two bunches of each, and these occupied considerable space.

**Gros Guillaume.**—Three competitors entered this class, Mr. McIndoe winning the first place with very large and finely coloured examples. Mr. Murray followed with smaller but finely coloured bunches. Mr. Reed was third with larger bunches, but smaller in the berry.

**Alicante.**—The competition was extremely keen in this class, eleven lots being staged, and nearly all of them were capitally coloured. Mr. J. Day secured the premier position with large bunches and finely coloured. Mr. Hammond followed with medium-sized bunches and berries of good colour, Mr. Thompson being adjudged the third place for excellently coloured but irregular bunches.

**Black Hamburg.**—The popularity of this Grape was shown by the number of entries (thirteen) exceeding those in all the other classes. Mr. Boyd was awarded the premier prize for fine bunches, medium-sized berries, and good colour. Mr. H. Smith, gardener to J. H. C. Clark, Esq., Speddock, Dumfries, was second with fairly coloured examples; and Mr. J. Beisant, gardener to Mrs. Armistead, Castle Huntley, was third.

**Gros Colman.**—Only two pairs of bunches were entered, Mr. McIndoe leading with fine bunches, the berries large but slightly wanting in colour. No second prize was awarded; and the third-prize bunches from Mr. Andrew Scott, gardener to James Shanks, Esq., Arbroath, were small, the berries being, however, of good size and the colour good.

**Lady Downe's.**—Eight competitors entered this class, showing very close even samples, and mostly well coloured. Mr. T. Boyd was awarded the leading honours for large even bunches bearing an excellent bloom. Mr. Murray was second with smaller but similarly well-coloured bunches. Mr. McKelvie took the third place with even bunches, the berries fine but wanting in colour.

**Madresfield Court.**—Mr. McIndoe and Mr. John Hannah, gardener to Sir Herbert Maxwell, M.P., Monreith, Wigtownshire, were the only exhibitors of this variety, and neither showed it in as good condition as it has been seen at some of the London exhibitions recently. The prizes were awarded in the order named above, the premier bunches being compact, of medium size, and the colour good. Mr. Hannah's bunches were large and the berries fine, but they were slightly wanting in colour and appeared to have been somewhat rubbed.

**Mrs. Pince.**—Four lots were staged of this variety, Mr. Murray securing the chief prize for handsome bunches as regards form and size, but rather deficient in colour. Mr. G. Reid had smaller bunches, and still less well coloured. Mr. Haig, gardener to Sir Thomas Munro, Lindertis, was third for large bunches, but not satisfactorily finished.

**Muscat Hamburg.**—This was an interesting class, for to the leading exhibitor, Mr. Boyd, was awarded the Veitch Memorial medal and prize of £5, and strangely enough the Judges had hesitated between this and another exhibit from the same grower, so that he had a double chance of obtaining this much-coveted honour. The bunches selected for the chief position in the class, and to which the other prizes were subsequently awarded, were



very compact, well-formed, and finely though not highly coloured. In the opinion of some it may be remarked that the bunches were not sufficiently thinned, and there was certainly a decided approach to crowding in some parts of them. Mr. G. Dickson was second with smaller and somewhat reddish samples, Mr. McIndoe being third with quite red specimens, the berries, however, being of unusual size.

*Any other Black Variety*.—Two remarkable bunches of Gros Maroc were staged by Mr. W. Murray, gardener to T. C. Carnmouth, Esq., Polmont, and deservedly awarded first honours in the class amongst five competitors. The bunches were large, and the berries were extraordinary in size, bloom, and finish—some of the finest indeed that have been shown this season. Mr. D. Murray secured the second place with Alnwick Seedling, well coloured; and Mr. McIndoe was third with Gros Maroc, smaller than the first-named, but well coloured.

*Buckland Sweetwater*.—Three pairs of this variety were entered. Mr. David Howie, Dunmarle Castle Gardens, Culross, won chief honours for handsome bunches and berries beautifully coloured—indeed, all those shown were good in that respect. Mr. John Fraser, gardener to Mrs. Grant, Forfar, secured the next prize for smaller but equally well ripened samples. Mr. J. Gray, gardener to the Rev. T. H. Turnbull, The Manse, Lesmahagow, was third for similar examples.

*Muscat of Alexandria*.—The competition in this class was keen, seven pairs of bunches being entered. Mr. G. Ramsay, The Gardens, Fordell House, Inverkeithing, won the premier honours for finely coloured bunches of medium size. Mr. Day followed, having large bunches and berries, but only moderately well coloured. Mr. McKelvie, who was third, also had large bunches, but defective in bloom and finish.

*Any other White Variety*.—Five lots were entered in this class, Mr. Ramsay leading with beautiful bunches of an unnamed variety, but which was considered by the Judges to be White Tokay. The berries large, oval, of a soft, clear, semi-transparent yellow hue. Mr. J. Dewar, gardener to Capt. J. Archibald, Beechwood, Tillicoultry, was placed second for handsome examples of Duke of Buccleuch, large in bunches and berries and well coloured. Mr. McIndoe took the third place with Golden Champion fairly good.

*Single-bunch Class*.—Fourteen classes were devoted to single bunches of Grapes in their respective varieties like the preceding section, but exhibitors in that were precluded from competing with single bunches. Alnwick Seedling.—Mr. McKelvie won first with large handsome bunches, but slightly rubbed, being followed by Mr. J. Robertson, gardener to John Steel, Esq., Springbank, Stirling, with smaller well-coloured examples. Black Hamburg.—Mr. J. Jeffery, gardener to H. Pringle, Esq., Craigcleuch, Langholm, took the lead for finely coloured bunches of medium size. Mr. Watson, The Gnynd, and Mr. G. Smith, gardener to M. Brand, Esq., Mylnefield House, were second and third respectively with smaller samples. Black Alicante.—Seven fine bunches were staged, Mr. Boyd winning first honours for large superbly coloured bunches; Mr. John Laing being second with medium-sized but well-finished samples. Mr. E. Douglas, gardener to Mrs. J. Harris, Derwent Lodge, Cockermouth, was third with neat bunches, rather small, but of good colour. Gros Colman.—Of four competitors Mr. G. Smith was the most successful, his bunches having large and fairly coloured berries. Mr. Beisant, who followed, had grand berries, but rather red; Mr. Johnston, gardener to T. H. Smieton, Esq., Panmure Villa, Broughty Ferry, taking the third place with compact bunches, but not sufficiently thinned. Lady Downe's.—Messrs. Beisant, Johnstone, and Laing were the prizetakers in this class, all showing well. Mrs. Pince.—Mr. E. Douglas was first with a small bunch, but capitally finished; Mr. Alex. Gregor, gardener to H. O. Gill, Esq., Fairfield, Aberdeen, being second with thin bunches. Any other black variety.—Mr. Brunton led with Muscat Hamburg, good in size of bunch and berry, but rather red. Mr. D. Morrison, Inchmartine, was second with West's St. Peter's; Mr. Fraser following.

There were fewer classes devoted to white Grapes, and one of these, that for Mrs. Pearson, was unrepresented. Buckland Sweetwater.—Mr. J. McIntyre, Woodside Gardens, Darlington, was adjudged first honours for good bunches finely ripened; Mr. J. Smith, gardener to A. Y. Blyth-Martin, Esq., Blyth House, Newport, Fife, was second with smaller samples; and Mr. Meldrum, Kirkcaldy, was placed third with rather a poor bunch. Muscat of Alexandria.—Of the six bunches contributed the best was from Mr. J. Johnston, gardener to A. Gordon, Esq., Ashludie, a fine even bunch of excellent colour. Mr. E. Douglas followed with smaller examples; and Mr. Souza was third for a rather irregular bunch. Any other white variety.—There was the same number of entries in this as the preceding, Mr. Hannah securing chief honours with Golden Hamburg, very large in the bunch. Mr. Haig was second with the same variety, rather loose but fairly good; and Mr. Beisant took the third place, also for the same variety, very large in berry.

Three interesting classes were those for the heaviest bunch, the best coloured, and the finest flavoured Grapes. For weight, Mr. Hannah exhibited an enormous bunch of Syrian, which was said to weigh 18 lbs., but it was loose and far from handsome in its proportions. The second place was secured by Mr. J. Laing, who had small examples apparently of the same variety, while Mr. McIndoe took the third place for the Raisin de Calabre, also large but considerably less than the first. In the class for Grapes with the best bloom there were thirteen exhibitors, and nearly all showed Alicante, Mr. Boyd and Mr. Thompson being first and second with grandly coloured examples of that variety; and Mr. A. Kirk, gardener to J. Thomson Paton, Esq., Alloa, being third with Alnwick Seedling in good condition. In the finest-flavour class the competition was also good, Mr. G. Johnston leading with Muscat Hamburg, rather red. Mr. Alex. Crosbie, Buchanan House, Drymen, Stirling, was second with Muscat of Alexandria, and Mr. Souza third with Duchess of Buccleuch. A fourth exhibitor who staged a bunch with some added berries to render it the necessary weight being disqualified.

MELONS.—Two classes were appropriated to Melons, one for green-flesh varieties and the other for scarlet-flesh, and in each the competition was extremely keen. In the green-flesh class there were sixteen competitors, Mr. W. Alison, Seaview Gardens, Monifieth, winning the first place with a neat variety, but unnamed. Mr. H. Pettigrew, gardener to the Marquis of Bute, Cardiff Castle, was second with the same variety, Mr. Goodacre being third with Hero of Lockinge, very fine, the only fruit named. For a scarlet-flesh variety the competition was still more keen, nineteen fruits being entered.

Mr. James Malcolm, Sunnyside Asylum, Montrose, was first with a small unnamed fruit; Mr. John McKenzie, gardener to Thomas Bell, Esq., Belmont House, Dundee, was second, and Mr. Haig, gardener to Sir Thomas Munroe, Bart., Kirriemuir, third, each having neat but unnamed fruits.

PEACHES.—The display of Peaches were satisfactory, as, although finer fruits are occasionally seen, the majority were highly coloured, and some were of good size. Ten lots of twelve Peaches were entered, Mr. J. McLeod, gardener to Robert Smith, Esq., Brentham Park, Stirling, contributing the best specimens, really handsome fruits of a dark-coloured variety like Stirling Castle. Mr. James Johnston followed with a similar variety, and scarcely less fine fruits; Mr. J. McIndoe being third with Princess of Wales, large fruits, but not possessing the colour of the two former. With six Peaches the competition was nearly as good, nine dishes being staged, and all very close in merit. Mr. Milne won first honours for Princess of Wales, very large and handsome. Mr. W. Gardiner was second with Stirling Castle, excellent in colour, Mr. McKelvie taking the third place for the same variety as that shown by the preceding exhibitor.

NECTARINES.—Similar classes were provided for these as for the Peaches—namely, for twelve and six fruits respectively. In the former there were five competitors, Mr. Johnston securing first honours with Pitmaston Orange, large and extremely handsome. The second place was secured by Mr. James Hunter, gardener to the Earl of Durham, Lambton Castle, who had some fine examples of Violette Hâtive; Mr. James Brown, gardener to C. S. H. D. Moray, Esq., Abercairny, Crieff, being third with Violette Hâtive, well coloured. Eleven dishes of six Nectarines were entered, Mr. J. Brown, gardener to Robert Clarke, Esq., Taybank House, Errol, winning premier honours with Pitmaston Orange, very fine; Mr. John Laing, gardener to General Clark, Rattray, Craighall, Blairgowrie, was placed second with Elruge, good; Mr. James Milne, gardener to W. J. Tweedie, Esq., Rachan House, Biggar, Peebles, being third with an unnamed variety of good size but pale colour.

APRICOTS AND PLUMS.—Apricots are extremely well grown in Perthshire and neighbouring counties, and accordingly this handsome fruit was well represented by a dozen dishes of twelve fruits each, Mr. John Brunton, gardener to Sir Alexander Kinloch, Bart., Gilmerton, Drem, securing the leading prize for large richly coloured fruits of Moorpark. Following closely with the same variety were Messrs. J. Brown and John Galloway, gardener to the Earl of Minto, Minto House. There was a still greater competition in the Plum class, nineteen entering, and all showing handsome well-ripened fruits. Mr. W. Gardiner was first with Reine Claude Violette and Jefferson; Mr. Goodacre second with Pond's Seedling, Kirke's, and Guthrie's Green Gage, and Mr. J. Souza third.

PINES.—There was not an extensive display of these, nor were the fruits of extraordinary merit, though they were mostly of useful size, well developed, and ripe. The best pair were from Mr. D. Murray, Mr. McIndoe taking the second place with smaller samples. Mr. Goodacre was the only exhibitor of two Smooth Cayenne Pines, both handsome examples; Mr. McIndoe and Mr. Goodacre being awarded the prizes for a single Pine, each staging fairly good fruits.

APPLES.—The principal class in this section was for the six heaviest Apples, and in that class there were eighteen entries, all the exhibitors staging large handsome fruits. Mr. McKenzie took the lead with Gloria Mundi, 5½ lbs.; Mr. McIndoe followed with Ecklinville, nearly as fine; Mr. D. Murray having Gloria Mundi weighing 4½ lbs., for which he secured the third prize. The competition was very strong for a collection of baking Apples, twenty-four lots being entered, the majority unusually fine for the season. Mr. McKenzie won chief honours, having Warner's King, Lord Suffield, Gloria Mundi, and Peasgood's Nonsuch in splendid condition. Mr. McIndoe was second with smaller but even, clean fruits of a greater number of varieties, amongst which the most notable in size and general merit were Flanders Pippin, Lady Henniker, Lord Suffield, Grenadier, Waltham Abbey Seedling, Ecklinville, Warner's King, and Hollandbury. Mr. Hunter, who followed, had Lady Henniker, Cox's Pomona, Peasgood's Nonesuch, and Lord Suffield in satisfactory form. The dessert Apples were rather small and wanting in colour, but clean and even. Of the fourteen competitors Mr. J. Hunter was the most successful, taking first for Golden Pippin, Court-Pendû-Plat, Kerry Pippin, and Worcester Pearmain. Mr. McIndoe was a close second, his best fruits being Yorkshire Beauty, Duchess of Oldenburg, and Worcester Pearmain. Mr. Galloway was third with smaller examples.

PEARS.—These were not so largely shown as the Apples, and were not of remarkable quality, being mostly somewhat small, except in the first class, and unripe. Four dishes of six Pears for weight were entered, Mr. Hunter leading with Beurré Diel, 7¼ lbs., two of the fruits weighing 23 ozs. each. These were much the finest shown, those from Mr. McKenzie and Mr. Laing, who were second and third, being considerably smaller. For twelve varieties, two fruits of each, ripe or unripe, there were thirteen entries, Mr. Hunter securing first honours for fairly good fruits, of which the best were Beurré Clairgeau, Pitmaston Duchess, and Louise Bonne of Jersey. Mr. McKenzie's best fruits in this second collection were Duroseau, Beurré d'Arenberg, and Louise Bonne of Jersey; Mr. McIndoe showing Marie Louise d'Uccle, and Beurré Diel, very fine. With three varieties, exclusive of Jargonelle, Mr. Hunter was first, staging Souvenir du Congrès, and Jersey Gratioli, extremely fine. Mr. McIndoe had Souvenir du Congrès and Louise Bonne of Jersey in satisfactory condition, Mr. J. Laing following with smaller specimens. There were eight dishes of nine Jargonelles, the prizes being secured by Messrs. W. Murray, W. McDerwent, and McKenzie. The first-named having much the finest fruits.

MISCELLANEOUS FRUITS.—Numerous other classes were provided for fruits, but they can only be briefly referred to. The Vines in pots were not of exceptional merit, except the first-prize specimen from Mr. John Machar, gardener to Robert Mudie, Esq., which was a good example of Alicante, with nine fine bunches. In the white variety class Mr. G. R. Milne, The Grange Gardens, Monifieth, was first with an unnamed variety bearing fifteen small bunches of round greenish berries. With twelve Figs Messrs. Hunter, Galloway, and J. Reid were the prizetakers, the leading variety being Brown Turkey well ripened. Hardy fruits were shown in good condition, especially by the three winners in the class for eight dishes—namely, Mr. P. W. Fairgrieve, Mr. Peter Robertson, and Mr. J. Brown; and in several smaller amateur classes there was also a close competition with



good fruits. Mr. W. Murray had the only four fruit trees in pots, for which the first prize was awarded; excellently grown and freely fruiting specimens of *Souvenir du Congrès* and *Pitmaston Duchess Pears*, *Jefferson Plum*, and *Lord Grosvenor Apple*, each tree being about 6 feet high and well furnished. *Morello Cherries* were extensively shown, nineteen dishes being staged, the leading honours being secured by Mr. J. H. Milne, followed by Messrs. Goodacre and J. Laing. In the amateurs' classes *Gooseberries*, *Currants*, and *Plums* were represented by some fine dishes, and added considerably to the extent of the display.

#### PLANTS.

Sufficient plants were exhibited to afford an agreeable furnishing in the large hall, but although a number of classes were devoted to them, and the prizes were liberal, there were few exhibits of unusual merit except the tables or groups of plants. Some fine *Crotons* were notable in a few collections, and the *Ferns* throughout were healthy, but generally rather small. *Liliums* were excellently flowered and afforded an agreeable feature in the Show, the plants for table decoration being also extremely good. What were needed in such a large and lofty building were some of the giant specimens which take the honours at the southern shows, as they would have assisted greatly in removing the bareness a little too apparent in some parts of the halls.

*Groups of Plants.*—Two classes were devoted to these, one for nurserymen and the other for gardeners, five of the former entering and four of the latter. The prizes were offered for the most effectively arranged collection of plants, to be placed on low tables about 2 feet above the ground, and the nine competing groups were arranged with excellent effect down the centre of the principal hall, forming an extremely beautiful avenue. In the nurserymen's class, in which the stipulated size of group was 20 feet long by 8 feet wide, Messrs. Ireland & Thomson, Edinburgh, were the leading exhibitors, securing the premier honour for a well-finished, graceful, and bright group. The *Crotons* were especially notable in this collection, tall handsomely coloured examples of the best varieties. *Liliums auratum* and *speciosum* were also prominent, imparting a most pleasing appearance to the group; *Dracænas*, *Nepenthes*, *Anthuriums*, *Palms*, and miscellaneous foliage and flowering plants were also employed, the groundwork being formed of *Adiantums* informally arranged so as not to form a level bank. The margin consisted chiefly of *Ficus repens* and *Panicum variegatum*, which, drooping over the side of the table, added materially to the beauty of the arrangement by concealing the staging. Second honours were accorded to Messrs. D. & W. Croll, Dundee, who had a pleasing combination of *Palms*, *Ferns*, *Lilies*, *Impatiens Sultani*, and other flowering plants very freely disposed, and possessing a most agreeable brightness, the only defect being the margin, which, being formed of a wreath of shrub leaves and shoots, had a rather incongruous appearance. Messrs. Clarke Bros., Dundee, were third with a tasteful and pretty group, in which there was a good proportion of flowering plants arranged on an undulating groundwork of *Adiantums*.

In the gardeners' class for a table 15 feet by 8 feet the first prize was awarded to Mr. Hammond, gardener to Sir Wilfrid Lawson, Bart., Brayton, Carlisle, whose exceedingly graceful group was much admired by all who saw it. It was unpretentious but remarkably pretty, the surface being varied and the number of flowering plants well proportioned. A beautiful groundwork was formed of healthy fresh *Adiantums*, with a central *Cordylina* and two end *Crotons*, the space between being filled with *Celosias*, *Acalyphas*, *Oncidiums*, *Anthuriums*, *Hydrangeas*, and *Vallotas*, the margins being formed of *Panicum variegatum*, which drooped round the sides very gracefully. Mr. William Alison secured second honours for a pleasing group, in which *Crotons*, *Dracænas*, and *Palms* such as *Cocos Weddelliana* predominated, arranged upon a bank of *Ferns* as in the other groups. It had a very elegant appearance, but would have been improved by a few more flowering plants. The third place was accorded to Mr. P. McArthur, Kintral Newport, Fife, for a somewhat similar group to the last, but not quite so well finished, the margin being rather rough, especially at one corner.

*STOVE AND GREENHOUSE PLANTS.*—The finest of the specimens in this section of the Show were entered in the class for twelve plants, and Mr. Hammond was the most successful exhibitor, securing first honours with a praiseworthy collection of well-grown examples, amongst which the fine-foliage plants were especially good. *Cycas revoluta*, 10 feet in diameter, was in splendid health; *Croton majesticus*, 9 feet high, was grandly coloured; *C. Queen Victoria*, of similar proportions, was also excellent in colour; *Bonapartea juncea filamentos*, 4 feet high and as much in diameter, was in perfect health; *Dasylium acrotrichum*, large and healthy; and *Statice profusa*, freely flowered, were the most notable specimens in the collection. Mr. W. Alison was an extremely close second, showing finely grown plants of *Phenocoma prolifera*, 4 feet in diameter and extremely healthy; *Eucharis grandiflora*, with twenty-six large trusses of flowers, and several good *Crotons*. Mr. D. Ross, St. Martins, was third, one of his most notable plants being *Yucca aloifolia*, about 4 feet high and beautifully variegated. With six stove and greenhouse plants Messrs. P. Marshall and Edmonds were the chief prizetakers, the former having *Phoenix reclinata* and *Phormium tenax variegatum* very large and healthy.

*Heaths.*—A class was provided for three *Heaths*, and it was the centre of some interest, owing to the award of the Veitch medal for the best specimen plant in flower. This was secured by Mr. Boyes, Burnpark, Uddington, for one of his three premier *Heaths*, *Erica retorta major*, which was about 5 feet in diameter, profusely flowered, and perfectly healthy. The other two *Heaths* in this collection were *Erica Marnockiana*, 3 feet in diameter; and *Erica Jacksoni*, similar, and all alike were in most healthy condition, and evidently receiving the best cultural attention. Mr. Alison and Mr. G. McLennan, Fetteresso, were second and third, each with healthy plants, but not quite so even as the first-named.

*Orchids.*—There were very few *Orchids* shown, and none of the specimens was of extraordinary merit. Messrs. Ireland & Thomson were the only exhibitors of eight plants, being adjudged the first prize for small healthy specimens. They were *Odontoglossum Pescatorei*, bearing a panicle of two dozen flowers; *Saccolabium Blumei* Dayi, with two spikes 18 inches long; *Oncidium Rogersi*, with a fine panicle; *Cypripedium Haynaldianum*, bearing five flowers; *Lælia elegans*, with one spike of twelve flowers; *Oncidium tigrinum*, *Cypripedium Sedeni*, and *Cypripedium Dominionum*. Only one pair of *Orchids* was shown, for which Mr. Boyes was awarded first prize; and for one of them, *Odontoglossum grande*, he was awarded the Veitch Memorial

medal and prize for the best *Orchid*, thus securing the two medals in the plant class—no small achievement. The *Odontoglossum* was about 2 feet in diameter, perfectly healthy, and bearing six spikes, ten very handsome flowers being fully expanded. The other plant was a small example of *Mesospidium vulcanicum* with four spikes.

*Lilies.*—As already remarked, the *Lilies* were a beautiful feature in the Show, and some extremely well-flowered specimens were exhibited. With two *Lilium speciosum*, Mr. E. Moir, Newport, Fife, was first with the white and rose varieties, each specimen bearing about three dozen large clean flowers. Mr. James Low, Maryfield, was second with plants very slightly inferior, the flowers being almost as numerous as in the first. In some other amateur classes several fine specimens were also staged. For one *Lilium auratum*, Mr. G. Davidson, Lochee, was first, having a plant about 9 feet high, with thirty stems bearing from three to six flowers each. This was an extraordinary specimen, and was an imposing feature in the second hall. Mr. J. Bucknall, Milnefield, followed with a much smaller plant.

*TABLE PLANTS.*—In the plant department of the Exhibition no classes were better represented than those devoted to table plants, all the collections staged being distinguished by a neatness of size and gracefulness of habit which rendered the judging a somewhat difficult matter. There has been a great improvement recently in the style of plants entered in such classes; now the narrow-leaved *Crotons* and *Dracænas* are employed in preference to the broader-leaved, bolder, but less suitable varieties, and other plants of a light graceful habit of growth have replaced many of stronger growth which were at one time favourites. There were six competitors with twelve plants in pots not exceeding 6 inches in diameter, and Messrs. Ireland & Thomson were deservedly awarded the premier prize for neat well-coloured *Crotons*, *Palms*, *Aralias*, *Dracænas*, and *Pandanus*, the surface of the soil being covered with *Selaginella*, and the pots with a tasteful latticework. The second place was accorded to Messrs. R. B. Laird & Sons, Edinburgh, who had similar neat, handsome plants a very few points behind those which were awarded first honours. Messrs. James Cocker & Son, Edinburgh, took the third position with a similarly satisfactory collection, and these three exhibits were the most even and pleasing of any we have seen this season. Two other classes were also devoted to table plants, one being for six and the other for three. In the first named Mr. James Mitchell, gardener to James Hunter, Esq., Newmains, Aberdeen, secured the leading prize for a very creditable collection, followed by Mr. Robert Grigor, gardener to Professor J. W. Smith, Sunnyside, Aberdeen, and Mr. Adam Dunlop, gardener to Mrs. Springhill, Kilmarnock, all showing plants of nearly equal merit. With three plants, Messrs. W. Bell, J. D. Ker, and Wm. Kirton were the prize-takers in that order.

*NEW PLANTS.*—A class was provided for twelve new plants introduced since 1880, but only one collection was entered—namely, that from Messrs. Ireland & Thomson, who had well-grown examples of the following:—*Platynerium Hilli*, a very distinct form with hard trifid dark green fronds; *Anthurium splendidum*, notable for its dark handsome leaves, with a peculiar wrinkled surface; *Dieffenbachia Jenmani*, with narrow tapering leaves regularly spotted with pure white between the veins; *Dracæna Lindenii*, a variegated form, which is now well known; *Ficus elastica aurea variegata*, a useful and effective plant; a fine dark-spotted *Nepenthes*, *Nepenthes Dormanianna*; and *Croton Thomsoni*, finely coloured.

*FINE-FOLIAGE PLANTS.*—There was not a great display of these, but with the *Ferns* the numbers were greatly increased, though there were no large specimens, and some were extremely small. For six plants Mr. Hammond was first, his most remarkable plants being *Croton Sunset*, which was in beautiful condition and superbly coloured; *Dasylium acrotrichum* and *Phoenix rupicola*, all exceedingly vigorous examples. Mr. Alison was second, having *Yucca aloifolia variegata* and *Cycas revoluta* in excellent health. For one specimen foliage plant Mr. Marshall was awarded chief honours for an admirable conical specimen of *Coprosma Baueriana variegata*, about 6 feet high, well clothed with foliage and clearly variegated.

In the class for a trio of *Dracænas*, J. Broome, Esq., Didsbury, Manchester, was adjudged first honours for excellently grown plants, 6 to 7 feet high, and well clothed with leaves. The varieties were *D. Baptisti*, *D. Shepherdii*, and *D. Youngii*. The second place was taken by Mr. E. Douglas, whose plants were 4 feet high and well coloured; Mr. Hammond being third with smaller examples.

Of the *Ferns*, the best were staged in the class for eight plants, exotic species or varieties, Messrs. James Cocker & Son leading with fresh healthy examples of *Microlepia hirta cristata*, *Gleichenia dicarpa* (3 feet in diameter), *Gymnogramma peruviana argyrophylla*, *Nephrolepis pluma* (very healthy), *Davallia solida*, and *Adiantum grandiceps*. Messrs. W. P. Laird & Sinclair were second with smaller plants, of which *Adiantum cuneatum* and *Davallia elegans* were the most noteworthy; Messrs. Ireland and Thomson being third with still smaller plants, of which *Adiantum farleyense* was much the best. Several other classes were appropriated to *Ferns*, but in the majority the plants, though healthy, were rather small. This was particularly the case with the hardy *Ferns*, of which some creditable collections were staged.

Many smaller classes were represented, but they cannot be referred to in detail. *Vallotas* were particularly bright and freely flowered; *Eucharises* were fairly good, *Cockscombs* were of a moderate size but good colour, summer-flowering *Chrysanthemums* of ordinary merit, *Tuberous Begonias* healthy but not extraordinary either in the number or size of the flowers. *Alpine plants* were shown in fair numbers, those with which Mr. D. P. Scott, West Ferry, gained the premier position in their class deserving especial praise. *Pelargoniums* were also shown, but not very freely flowered, and some had been so damaged in transit that they lost all their blooms the first day of the Show.

*CONIFERS.*—In front of the chief hall and near the band stand three very attractive collections of *Conifers* were arranged in competition, and some charming varieties were represented. The class was for six specimens, Messrs. Dickson & Turnbull winning the first prize for compact examples of the following:—*Thuopsis dolabrata variegata*, *Wellingtonia gigantea pendula variegata*, *Taxus baccata aurea*, *Picea Pinsapo glauca*, *Abies Douglasii* Stairi having a whitish tinge, and *Abies Tsuga nana*, dwarf and of good habit. Messrs. Laird & Sinclair followed closely, having *Picea concolor*, *Juniperus chinensis aurea*, *Abies polita*, *Wellingtonia gigantea pendula*, *Retinospora plumosa aurea* very fine, and *Taxus fastigiata aurea variegata*.



The third position was taken by Messrs. D. & W. Croll, Dundee, who had *Picea nobilis glauca*, *Taxus elegantissima*, *Abies Alcoquiana*, *Cupressus Lawsoniana variegata*, *Retinospora filifera*, and *Cupressus Lawsoniana nana*.

#### VEGETABLES.

In general merit the vegetables deserve a prominent position amongst the best productions at the Dundee Show, and in all the leading classes the competition was extremely keen. All the collections staged were distinguished by a most satisfactory cleanness and freshness that indicated the most careful culture, though undoubtedly the district around Perth and Dundee is a favourable one. The principal class was for a basket of fifteen kinds, in which there were nine entries, the samples staged being of capital quality. Mr. John Brown, Abercainey Gardens, Crieff, was accorded first honours for beautiful specimens of Golden Ball Turnips, Cranston's Onions, Trophy Tomatoes, Evolution Peas, Canadian Wonder Beans, Muir's Hybrid Marrow, Brown's Hybrid Leeks, well blanched for a length of 15 inches; Veitch's Autumn Giant Cauliflowers, Leicester Red Celery, and Carters' Model Cucumber. Mr. J. McBean, gardener to J. C. Cunningham, Esq., Renfrewshire, won the second place with good Savoy, Leeks, Peas, Tomatoes, and Cauliflowers; Mr. P. McArthur, gardener to John Laing, Esq., Newport, securing the third place with fine Cauliflowers, Turnips, Leeks, and Carrots. With a collection of ten kinds Mr. John Stewart, St. Fort; Mr. W. Goodall, Errol; and Mr. W. Watson were the prizetakers in that order. In the collection-of-eight-kinds class the competition was much keener, eleven exhibitors entering the lists. The prizes were secured by Mr. Thomas Johnston, Mr. James Strong, Baledgarno, and Mr. Peter Auton, Baledgarno, who had some well-grown produce.

Of Potatoes there was a considerable display, eighteen collections of twelve varieties being staged very close in merit. Mr. Thomas Johnston won premier honours with fine even tubers of Myatt's Kidney, Woodstock Kidney, International Kidney, Reading Russet, Radstock Beauty, Fiftyfold, Blanchard, Porter's Excelsior, and Bresee's Prolific. Messrs. J. Wilson and John Stewart were second and third in the class with similar collections. For six varieties there were twenty-two competitors, Mr. John Fowles, Tayport, being first with admirable examples of Woodstock Kidney, Porter's Excelsior, Reading Russet, Grampian, Blanchard, and Schoolmaster. Mr. Francis Stewart and Mr. K. McGrigor, Banchory, followed in that order.

Cucumbers were extensively shown, sixteen brace of fruits being entered, the majority much larger than they are usually exhibited at southern shows. Mr. J. Cairns, Hirsell Gardens, Coldstream, was placed first with two enormous fruits, each over 2 feet 2 inches long; Mr. David Ross, St. Martin's Abbey, Perth, being second with fruits nearly the same size; Mr. McIndoe taking the third place with slightly smaller samples. Leeks were staged in splendid condition, even, and well blanched for a length of 12 to 16 inches. Turnips were abundant, and all of the Golden Ball type. Cauliflowers, Cabbages, Onions, Beet, Parsnips, and Vegetable Marrows were all abundantly represented and of admirable quality throughout.

#### CUT FLOWERS.

For these there were four divisions set apart—one for nurserymen alone, one for gardeners and amateurs, one for amateurs alone, and an open class devoted to bouquets, wreaths and epergnes. There was a keen and spirited competition for most of the prizes, much of the produce being excellent, and some of superior quality. The arrangements, so far as the Committee were concerned, were very good, Judges and reporters getting at the various classes with facility, a state of affairs we have not found at every big northern show. The general appearance and effect of the flowers was, however, greatly marred by the want of uniformity in the boxes and other articles in which flowers were set up. It is surely not too much to expect of such an intelligent Committee as that which the Dundee Horticultural Society can truly boast, to see that their exhibitions are not disfigured by a collection of showboards, some of which must be taken as examples of flower-staging when flower shows were in their infancy, and international facts of the far-off future.

Taking the several prizes in the order scheduled, a limited competition was apparent in the nurserymen's class. For twenty-four Roses Messrs. Cocker & Son, Aberdeen, were first with fresh and fine blooms for the season, comprising among others Etienne Levet, Dr. Andry, A. K. Williams, Ulrich Brunner, Alfred Colomb, Charles Lefebvre, Mrs. E. Wood, Duke of Edinburgh, Louis Van Houtte, Marie Rady, Marie Baumann, La France, and François Michelin. Messrs. Croll, Dundee, were second, and Mr. Montgomery third. For the first place for twenty-four Show Dahlias the competition was very close between Mr. Campbell, Blantyre, who eventually obtained the premier ticket, and Messrs. Cocker & Sons, whose blooms lacked the evenness of the first lot, and who had to be content with the second place, Mr. J. McPherson, Aberdeen, being third. The Messrs. Cocker were, however, first for twelve Fancy sorts; Messrs. R. B. Laird & Sons, Edinburgh, being second, and Clarke Brothers, Carlisle, third. The prizes offered for twenty-four single Dahlias, in twelve distinct sorts, two bunches of each, brought out a strong and good competition, in which Messrs. Lamont & Sons, Edinburgh, came off best with a grand lot, beautifully arranged in flat cone shape among dark green moss. Columbus, Miss Cameron, W. Quern, Attraction, Volunteer, and Mrs. J. Walker were the best kinds. The Messrs. Cocker were second here, and Mr. McPherson third.

For twenty-four Gladioli, distinct, Mr. Campbell, Cove Gardens, Gourrock, repeated his Crystal Palace victory, and was an easy first, Sylvia, Horace Pernet, Caprice, Mabel, Archduchess Marie Christine, Lady Bridport, Murillo, and Ondine being extra fine. Messrs. Stuart & Mein, Kelso, were a very good second, Baroness Burdett Coutts being extra in this lot, and Messrs. D. & W. Croll third. For twenty-four Hollyhock blooms, distinct, Mr. Campbell, Blantyre, was first with fairly good flowers; Messrs. Stuart & Mein second with larger though not such refined blooms; and Mr. John Forbes, Buccleuch Nurseries, Hawick, third. Mr. Forbes was first for twelve Hollyhock spikes, Mr. Campbell second, and Stuart & Mein third. There was a large and close competition for the prizes offered for twenty-four Fancy Pansies, Mr. Campbell being first; Mr. Sutherland, Lenzie, second; and Mr. A. Lister, Rothesay, third. For twenty-four bunches of bedding Violas, in twelve varieties, Messrs. Cocker, Aberdeen, were first, Mr. Sutherland second, and Mr. Forbes third. These exhaust the nurserymen's classes.

In the division open to gardeners and amateurs very much of the produce

was not only equal to but superior to that staged by the nurserymen, amateurs taking a fair share of the prizes. For twelve Roses and six Tea Roses Mr. Hall, Gray, Dunkeld, took first prize with small but fresh examples; Mr. Wallace, Rothesay, being second for the twelve. For twelve Show Dahlias Mr. W. Veitch, Carlisle, was first with very good blooms; Mr. J. Hogg, Aikenhead, second; and Mr. A. Davidson, Rubislaw, Aberdeen, third. For twelve Gladioli Mr. Gray, gardener to T. Moffatt, Esq., Newfield, Ayrshire, was first with wonderfully fine examples, superior to those of Mr. Campbell, and altogether the finest spikes shown for a very long time, if they have ever been excelled. The sorts were La Phare, Orpheus, Panorama, Archduchess Marie Christine, David Black (Gray), Psyche, André Leroy, Madame Desportes, Sylvie, Mrs. Finn (Gray), and Ondine. Mr. Smith, Prestwick, was a good second; and Mr. Johnstone, Ashludie, Monifieth, third. The prizes for twelve Hollyhock blooms also brought out flowers of much superior quality to those shown by nurserymen, Mr. J. C. Dingwall, gardener to M. Bullock, Esq., Ardock, being first with the best examples we have seen for many years; Mr. Cadzow, Lunark, second with a really good lot; and Mr. Thomson, Carluke, third. In contrast to these, prizes offered for twelve seedling Hollyhocks produced blooms unworthy of notice. For six Hollyhock spikes Mr. Dingwall was again first with grand examples, Messrs. Cadzow and Thomson taking the other prizes. It may be stated that these are, if not all, at least mostly old varieties, which were extensively grown before the Mallow Puccinia attacked the Hollyhock. The disease still exists, but not to seriously hurt the plants.

For twelve herbaceous flowers, open border, distinct, one or more spikes, what would have formed an imposing display was brought forward, but they were all too crowded, and the manner in which they were set up was bad, failing altogether to do justice to the flowers. The first prize went to Mr. Crichton, Inchture; the second to Mr. Miln, Linlathen; and the third to Mr. W. McLeish, Baledgarno. The finest examples were *Lobelia cardinalis* (type), *Gaillardia grandiflora*, *Anemone japonica alba*, *Hyacinthus candicans*, *Phygelius capensis*, *Chelone obliqua*, and examples of *Delphinium*. Pentstemons were very fine all through, Mr. Crichton being again first; Mr. W. Coots, Ellon, Aberdeen, second; and Mr. A. Brown, Orchill, third. Phloxes were also of extra fine quality. First for these was Mr. Brown; Earl of Wemyss, Miss Talbot, Capt. R. Jackson, David Christy, and D. McLellan being noteworthy; second Mr. J. Wilson, gardener to Mr. Gordon, Charleton, Montrose; and third Mr. Hill, Faily Place, Dundee. Some grand African Marigolds were staged, Mr. Bryson, Dunraight, being first for six; Mr. A. Ramsay, Baldorie, second; and Mr. J. Ruddiman, Aberdeen, third. Asters were, in quilled flowers, small and wanting in freshness, while flat-petalled varieties were, though large, very rough and greatly in need of a little "dressing." Pansies were very fine and very numerous. For twelve Show varieties Mr. Stewart, Lennoxton, was first; Mr. Storrie, Lenzie, second; and Mr. J. Ritchie, Denny, third, all with extra fine blooms. For twelve Fancy sorts Mr. A. Irvine, Tighnabruich (we hope that is correct); second, Mr. Stewart; Messrs. Storrie and Ritchie equal thirds. For twelve bunches of single Dahlias Mr. J. Hunter, gardener to J. Lyall Grant, Esq., Richmond Hill, was first; Mr. W. Saunders, Broughty, second; and Mr. G. McLennan, Fetteresso Castle, third. For twelve bunches annuals Mr. Miln, Linlathen, was first, having fine crimson Sweet Peas, single Poppies, Cornflowers, *Godetias*, *Eschscholtzias*, *Chrysanthemums*, &c. Mr. Alexander, Balmorie, was second; and Mr. Brydon third. For twelve Carnations or Picotees Mr. J. Mintz, Aberdeen, was first with a fairly good lot, the other being poor.

The prizes offered to amateurs brought out a large amount of bloom, some of it very good, much of it approaching rather near to mediocrity. The Gladioli were fine. For six spikes of these Mr. W. Kilgour, Kincardine, was first with good examples of *Carnation*, *Brennus*, *Picturata*, *Camille*, *Celiméne*, and *Sylvia*. Mr. Smith, Prestwick, was a very close second, the spikes being more equal, but the quality and size of flower inferior. Equal third prizes were awarded to Mr. Strong and Mr. J. W. Ker, Murrayfield, both staging fine spikes. The six herbaceous spikes were also keenly contested, Miss Pitcaithly, Elcho Cottage, Dundee, being awarded first. *Gladiolus Lemoinei* and *Hyacinthus candicans* were extremely telling in this collection. Mr. Smith was second with a fine lot, and Mr. D. Duff, Baledgarno, third; while a large number of highly deserving collections were perforce left out in the cold. Mr. D. Wallace, Rothesay, was first for six Roses. Mr. S. Angus, Aberdeen, for six Dahlias—fine blooms, but aged. Hollyhocks were again fine here, for six blooms Mr. Cadzow being first, Mr. Thomson second, and Mr. Galloway, Montrose, third. The prizes for three spikes of Hollyhocks went to same exhibitor. Pentstemons were poor, so were Phloxes, Asters, and Stocks; Pansies were fine. Mr. Stewart, Mr. Storrie, and Mr. McLaw, Cherrybank, Perth, took the prizes in the order named for six Show varieties; Mr. Stewart, Mr. Irvine, and Mr. Storrie being successful for the Fancy sorts.

In the open class for bouquets and other modes of arranging flowers the competition was large; but with the exception of a few examples these were not of a high order of merit. For a hand bouquet Messrs. Todd & Co., Edinburgh, were first with a fine example; Messrs. Jones & Co., Shrewsbury, second, also fine. For a bride's bouquet Messrs. Todd were again first with a lovely mass of Gardenias as ground work, relieved with a few *Eucharis* and white *Lapageria* blooms and Tuberoses pips standing out from the Gardenias. Messrs. Jones were again second, and Messrs. R. B. Laird & Sons, Edinburgh, third. For a table bouquet Messrs. Jones & Son were first with the only really good one, Mr. Watson, Stirling, second, and P. Buchanan, West Ferry, Dundee, third. Messrs. Jones were first for a basket of flowers not exceeding 12 inches across, with a pleasing arrangement, light and graceful. Others were very heavy and ineffective. For an epergne Messrs. Jones were again easily first with a broad glass dish for base, with a long-necked trumpet for centre and three small horn-shaped vessels attached to the middle of the trumpet stem. The second prize was awarded to Miss Pitcaithly, Elcho Bank, for an arrangement in which large *Allamanda* blooms predominated. Mr. W. Alison, Monifieth, was third. Mr. J. Johnston, Ashludie, was first for 15-inch wreath; Messrs. Harley & Sons, Dundee, second; and Miss E. Harley, Perth, third.

In the miscellaneous collection, Messrs. Todd & Co., Edinburgh, showed a beautiful floral cross and a wreath of lovely white flowers. Messrs. Lamont & Son showed a grand collection of single Dahlias, to two of which first-class certificates were awarded. These were respectively named Sir John Hope and R. D. Hound, both striped varieties. From Messrs. Dobbie came



about 350 blooms of beautiful Show and Fancy Pansies, and examples of a grand strain of African Marigolds. Two Fancy Pansies, My Lady and Mrs. D. Lutz, were selected from the above for first-class certificates.

To Mr. Lister, Rothesay, a certificate of merit was awarded for a grand lot of 150 blooms Show and Fancy Pansies; and a like award to Mr. Cuthbertson, Rothesay, for a large collection of French, African, and Scotch Marigolds, the African being a fine strain. Mr. Sutherland, Lenzie, showed some fine Pansies and very good Asters. Messrs. Ireland & Thomson, Edinburgh, two dozen bunches of extra fine single Begonia flowers, Messrs. Laing & Co., Forest Hill, also showing boxes of their grand single and double Begonias with plants of the same. These attracted much attention.

#### MISCELLANEOUS EXHIBITS.

Numerous collections and groups of plants were contributed by nurserymen both in England and Scotland, and some of these were extremely beautiful, adding much to the attraction of the Show. Very prominent amongst the best were the following:—A large group of foliage and flowering plants, including *Ericas*, *Nepenthes*, &c., from Messrs. Ireland and Thomson; a basket of a fine bronze purple-leaved Maple, *Acer Hookeriana*, from Messrs. Dickson & Co., Edinburgh; a choice collection of Tuberous Begonias, both single and double, from Messrs. J. Laing & Co., Forest Hill, London; a group of *Crotons*, *Dracenas*, and flowering plants from Messrs. W. P. Laird & Sinclair, Dundee; a collection of Zonal Pelargoniums and Tuberous Begonias from Messrs. H. Cannell & Sons, Swanley; a new *Croton* named *Thynnei* from Mr. R. Thynne, Glasgow, a variety with leaves 12 to 14 inches long, and 3 to 4 inches broad, of a golden-yellow suffused with red and dark green blotches; a group of fine-foliage and flowering plants from Messrs. Storrie & Murray, 96, Nethergate, Dundee; a group of Ferns and fine-foliage plants from Messrs. W. P. Laird & Sinclair, Dundee; collections of Apples and Pears, including some fine fruits, from Mr. T. Frost, Maidstone, Kent.

Some fine samples of the Rousham Park Hero Onions were shown by Mr. H. Deverill, Banbury; and Mr. J. Muir, Margam Park Gardens, Taibach, South Wales, sent specimens of his new Vegetable Marrow, *Pen-y-Byd*, a flat solid fruit of medium size, and said to be of excellent quality. A certificate was awarded for this.

At 1 P.M. on the opening day (Thursday) the Judges and exhibitors and visitors to the number of about seventy were entertained at luncheon in the Queen's Hotel, Dundee, Provost Moncur presiding, supported by the Earl of Strathmore and Lord Kinnaid. Several appropriate toasts were proposed and responded to. Provost Moncur stated that the success of the International Show in 1876 had induced them to hold another, and it was hoped that in a few years they would be enabled to have a third still better than either of these. Mr. B. S. Williams, Mr. Dunn, Mr. Greene, and Mr. Browning replied for the Judges, and after some further toasts the company separated.

The number of visitors to the Show was 21,000 on the three days. The total receipts were £627 from non-members, which we understand leaves a rather serious deficiency, though it is expected that with the members' subscriptions all demands can be paid in full.

#### MESSRS. JEFFERIES' NURSERIES, CIRENCESTER.

"ESTABLISHED 1795" is one of the intimations Messrs. Jefferies place on the covers of their seed, plant, Rose, and tree catalogues; but this is not the only recommendation the firm possesses to engage the confidence of the public, as a walk through their nurseries reveals the fact that they are in possession of as fine stocks of plants as could be found in the country, and in several important instances we must own to never having seen a better class of nursery stock. This is prominently the case with Roses, fruit trees, and Conifers. The Roses are really magnificent batches. At the London and other Rose shows in 1884, and long before that, the blooms from their nursery competing in important classes stood high in the prize lists, and in learning this from the reports in this Journal we resolved to see their place of production. Lengthy introductory remarks to the nursery are not needed. It is well known in the West of England, and far beyond. Perhaps most of the fine bushes, trees, and shrubs which now adorn the Royal Gardens, Kew, were obtained from this nursery in 1844, but we question if ever there was a time when it contained better specimens than it does at the present time. Years ago the greater part of the ground devoted to the culture of outdoor plants was quite close to the town of Cirencester, but the town has been extending so much that little now remains excepting the numerous glass houses and the ground which immediately surrounds them; but the main part of the nursery, many acres in extent, is now about three miles in the country, in an open sunny position, with soil of the finest description for Rose and tree culture. In going from the old nursery to this comparatively new one there is a small nursery about half way, and some two or three acres in extent, which is being solely devoted to Roses. Thousands of plants worked on Briar cuttings about this time last year were bearing as many as five and six shoots from 3 to 5 feet in height, and they were so strong and prominent that the majority of them were staked up carefully to prevent breakage by the wind. Others on the *Manetti* were not quite so strong, and those on the seedling Briars were not quite so perfect as the first-named, as stock from seed are more liable to vary than those selected and propagated from cuttings, and it is these the Messrs. Jefferies are using largely.

In the main nursery we find Roses, Roses everywhere in immense numbers, and budding going rapidly on by many hands. Dwarf bushes are the most numerous, but standards with clean stems and handsome heads are plentiful. The whole bears a decided stamp of great excellency. The varieties embrace every valuable kind in cultivation, new and old.

Great attention is devoted to the fruit tree department, and satisfactory returns is the result. Apples, Pears, Plums, Cherries, Peaches,

Nectarines, and Apricots are alike good. All the young trees bear indication of being very carefully trained and their wants attended to in a proper way and at the right time. The beds for everything in the nursery are 20 yards wide and many 100 yards in length; between them are grass or gravel walks 6 feet or more in width, which are very convenient for working and inspecting the stock.

Along each side of the principal walk in the nursery there is a wide border artistically planted with the best kinds of trees and shrubs; many of these have grown into neat specimens, and intending planters can see at a glance what effects will be produced by the different kinds they may select from the nursery quarters. Amongst a fine collection of *Cupressus*, *C. Lawsoniana erecta viridis* is the most beautiful of all. It originated in this nursery, and should be in every collection of trees or shrubs. *Abies* are here in all their varieties. *A. excelsa Gregoryana* is worth noting as a singularly dwarf variety. Seedling *Aucubas* showed many signs of being improvements on the old *A. japonica*, being larger in foliage and beautifully marked. Everything in the way of rare Coniferae, choice shrubs, and deciduous trees which are worth growing may be seen here in quantity and in fine condition; we never saw the foliage of these so rich-looking as here. The soil evidently suits them admirably, and they enjoy the decided advantage to all young trees of having a good beginning.

Hardy flowers, Dahlias, and all the most useful plants required in gardens are produced in healthy quantities. The locality altogether is favourable to the full development and proper maturing of all kinds of vegetation, and in taking a last look at this fertile spot we could not refrain from congratulating the Messrs. Jefferies on the general excellency of their nursery.

In the glass houses near the town we found large quantities of Tea Roses in pots equally as well grown as those in the open quarters. Besides these there is a general stock of plants such as are to be found in all good nurseries. In concluding this brief notice I have to thank one of the younger members of the firm for his courteous attention, and I cannot help expressing my gratification at meeting the senior partner, as his experiences cannot be spoken of without calling forth the deepest respect for a longlife well spent in the best interests of horticulture.—M. M.

CELANDINE.—Will "A Surgeon" kindly tell me whether Celandine, which he describes as a remedy for corns, is *Chelidonium majus*, a plant with an orange juice, sometimes called Bloodwort, or *Ranunculus Ficaria*, which is like a small Buttercup? Also, how the remedy is prepared? I take great interest in the use of herbs, and should like to know whether blossoms, leaves, or roots are used, and whether the common process of steeping in salad oil would make the tincture, or whether heat is required, simmering or boiling in lard or oil? or if it is a known remedy which is to be had from a chemist?—A HERB LOVER.



#### HARDY FRUIT GARDEN.

*Root-pruning.*—Fibrous roots having well hold of the surface soil bring fruit; tap roots running down into the subsoil bring wood at the expense of fruit—ergo, cut off the tap roots of your barren trees and they will be fruitful. To all earnest students of fruit culture we say, Get the foregoing sentence thoroughly into your minds, try to grasp its full significance, and at once apply it to practice, for now is the time to prune the roots of such fruit trees as by barrenness and extreme vigour of wood growth show plainly that they require it. First of all, consider well the age and size of such trees. Young trees 8 to 14 feet in height should have a trench opened 3 feet from the stem, half way round it and 2 feet deep. Use a sharp spade, cut clean through the roots as you proceed, and then work well under this semicircular portion of the soil containing the roots, and sever all downward roots till you reach a point just beyond the stem. You will then have pruned rather the larger half of the roots, which will suffice for this year, leaving the remainder to be treated in a precisely similar manner next September. Bearing in mind that barrenness and rampant growth often arise from too rich a soil, and in order to check an excessive reproduction of rootlets ram a hard mass of broken stones in the excavation beneath the ball, and fill up the side trench with soil that is only moderately rich, sound virgin loam being the very best for such a purpose. Once get the tree into full bearing and you can easily promote the full development of the fruit by a top-dressing of manure, or the use of liquid manure should it be necessary. Older trees often have the roots deep down in the subsoil, and then it is best to sink a trench 8 or 10 feet from the stem, and when the roots are reached to cautiously remove the soil between the trench and the stem, tracing every root and, so far as possible, lifting it, and subsequently spreading them carefully out in the soil near the surface. The outer roots only can be treated in this manner, those beneath the stem going downwards like tap roots must of course be severed. Do only half of the roots of the old trees now and leave the remainder till next year.



There must be no rash or careless work here, or such trees may be killed outright.

**Ripe Fruit.**—Look frequently over the fruit trees now and get the fruit gathered and stored carefully as it becomes ready. Autumn Pears are all fast approaching maturity, and we have been busy among the Apples, gathering a fine crop of Warner's King, Small's Admirable, Rymer, Nelson's Codlin, Cellini, and Wormsley Pippin.

#### FRUIT-FORCING.

**PEACHES AND NECTARINES.**—*Lifting Early-forced Trees.*—In all cases where lifting is about to be performed two great essentials to success are a properly moistened state of the old border and dispatch in carrying out the work. If the roots of the trees are confined to inside borders the trees should be shaded before they are disturbed, and when the old soil has been picked out and cleared away the exposed roots should be drawn aside and kept moist during the time the drainage is being made ready for covering with sods grass side downwards. Upon this the roughest portion, consisting of strong calcareous loam, old lime rubbish, or charred earth, should be put a proper depth and made very firm. This done the points of any long bare roots should be shortened with a knife, being careful to preserve all the small roots possible, spreading them out evenly over the surface of the bed, soil being cast over them and worked in with the hands, arranging the roots in layers according to their previous disposition. When all are covered a good watering with tepid water will settle the soil firmly, and the remainder may be placed over them, but not covering the uppermost roots more than 3 or 4 inches deep. It will be well to keep the front ventilators closed to check evaporation, and to have the foliage moistened with water from the syringe for a few days until the leaves become crisp, which is evidence that new roots are taking to the fresh warm compost; the houses may then be thrown open and the trees will be in a fit state for forcing when the proper time arrives.

Old trees as a rule do not require lifting entirely, particularly where the borders are composed of sound healthy loam free from manure, but a trench taken out along the front and the removal of inert soil from the surface inwards will give space for the addition of fresh compost that will add greatly to the vigour of the trees and quality of the fruit. In the management of Peach trees it should be borne in mind that the soil cannot be made too firm about the roots, and if it be rich and strong they will make a better class of bearing wood and remain longer in a healthy state if manure is used as a top-dressing only. If fresh trees have to be introduced from the walls some time must elapse before they can be disturbed; but if they have been lifted annually, as trees intended for the purpose should be, they will be ready for removal much earlier than trees that have to be brought from a distance.

**Pruning.**—Trees from which the fruit has recently been cleared should, so soon as this is effected, have the bearing shoots of the current year cut away to the shoot at their base intended for next year's fruiting. This will admit of a freer access of light and air, and assist in the maturation of the wood. If the trees are overcrowded with wood thin it well out, as it is important that the growths be well ripened and the buds prominent. If there be any doubt about the wood ripening increase the day temperature to 80° or 85° from sun, ventilating early, and throw the house open for the night both top and front. There must be no deficiency of moisture, but water should be given as necessary to keep the soil in a moist condition, and if the trees are weakly and have carried heavy crops of fruit some weak liquid manure will help to swell the buds.

Trees of late kinds will now be ripening their crops of fruit, and require good mulching with heavy watering at short intervals to support them through the strain they are undergoing, keeping the temperature at 80° from sun heat, and resting the trees at night, particularly those that are carrying heavy crops.

**FIGS.**—*Early Trees in Pots.*—These ought to have a resting period of about two months, during which they should be kept moderately dry and as cool as possible. If they persist in making growth the roots that have found their way into the mulching may be cut through with a sharp instrument run round each pot some 12 or 18 inches from the rim, and as a means of starving them the mulching material may be removed quite down to the bottom of the pots. Remove all unripe fruit, and prevent red spider from spreading by giving an occasional syringing until the leaves fall, when the annual cleaning may be performed. In the meantime the interior of the house and the roof lights should be painted if they require it, which will allow time for its hardening before it is subjected to the trying ordeal of the vapour arising from fermenting material in addition to the confined moisture.

**Succession Houses.**—The trees are still ripening quantities of useful Figs, the fine weather having been favourable to the admission of a free circulation of air. Where it is necessary to keep the trees in bearing, a little dry heat with ventilation through the night will be necessary, and any root-watering that may be required must be performed early in the morning when the day promises to be fine. Brown scale is often troublesome. It must not be allowed to spread, but the shoots infested should be well washed with an insecticide. Thin out the growths where too crowded, remove all useless spray, and allow the regular succession of shoots intended for giving next year's crop to find their way up to the glass instead of keeping them closely tied-in to the trellis.

**Young Trees in Pots.**—If any of these still under glass have rooted into the bed in which they are plunged they should be cut off as a means of inducing rest, whilst those that require another shift before they are forced should be transferred to larger pots without delay. Cut off all

strong roots when potting, and use rich turfy loam, bones, and lime rubbish in a dry state. Make it very firm as the work proceeds, otherwise the water when they are again started will pass away, the old soil becoming dry, and the first crop of fruit drop. Variety being an object, the pot system answers well, as many of the moderate growers can be accommodated in a small house, and being extremely prolific, plenty of heat and moisture supplemented by good feeding will result in the production of a plentiful crop of delicious fruit.

#### PLANT HOUSES.

**Stephanotis floribunda.**—Plants that are intended to flower early next year cannot have too much sun. They should be exposed to every ray of light, and, if possible, kept in a drier and a little cooler atmosphere. Every attention should be paid to the thorough ripening of the wood and bringing the growth to a complete standstill. After this has been accomplished the plants will rest well and safely in a temperature of 50° to 55° where the atmosphere is moderately dry for the following two months. While at rest no more water should be given than is necessary to keep the wood and foliage fresh.

**Allamandas.**—Plants that commenced flowering early in the season may, if required for the same purpose again, have their unripe or growing ends removed. This is the more necessary if they are trained upon a trellis, for if the wood where they are to be pruned back to is not thoroughly ripened, the growths next season will attain a very great length before they show any flowers. These plants should also be kept drier at their roots, gradually at first until water can be withheld entirely, and the soil in which they are growing kept quite dry. Expose the plants as much as possible to the light, and allow a good circulation of air to reach them as well as keep the temperature cooler and drier. Later plants, and those intended to flower as long as possible during the winter, should not at this season be in a lower temperature than 65° at night. All shading, if any is employed, should be removed, for the rays of the sun from this date will not prove too strong, shade being only needed for a few hours daily during the brightest part of the year. Apply water freely and feed liberally if the pots or borders in which they are growing are full of roots, or the plants will soon cease flowering. All plants of this description that have been used in the conservatory during the summer should be removed to warmer quarters without delay, or the roots will become injured, and perhaps the plants go off altogether.

**Anthurium Schertzerianum.**—This is one of the most useful plants that can be grown for flowering in the stove during the early months of the year, provided it be carefully and judiciously treated from the present time. To have them in flower early the growth must be completed and the plants subjected to an early rest, then there is no difficulty in having them in flower when required. Those that flowered early and have been in a moist warm temperature will have completed their growth, and should be removed into a house where an intermediate temperature is maintained. While in this condition the watering must be done carefully, keeping the roots rather dry than overwet, or the roots will perish. Avoid cold draughts striking upon the plants, or the foliage will be injured. When rested for two or more months they are afterwards readily brought into flower by introducing them into a warm moist structure.

**Crotons.**—This is perhaps the best time of the whole year to root successfully fine large heads into small or moderately small pots for purposes of decoration. If strong cuttings are rooted now in small pots and afterwards transferred into 6-inch pots they will be ready for starting into vigorous growth early the following year, while well-coloured tops for table decoration can be prevented from growing, and thus spoiling their beauty by green or uncoloured foliage on the newly-made growth. When struck large enough for the purpose for which they are required there is no need for pushing them into growth afterwards; on the contrary, they should be gradually hardened to a lower temperature, when they will remain healthy and retain their beautiful colour. Heads and cuttings will root in about three weeks if kept in a close warm frame and shaded from strong sunshine.

**Gardenias.**—Where the entire stock for spring flowering is raised annually from cuttings, in preference to cutting back and keeping old plants, the cuttings should be inserted at once. Young plants are much better than old ones, for they grow luxuriantly, and can be kept cleaner from insects than plants that have become stunted or checked in their growth. The principal object is to select robust cuttings, not too firm, and insert them singly in small pots of sandy soil. If well watered after insertion, and placed in a close moist frame and shaded, nearly every one will root. The only attention after is to keep them moving slowly during the winter, pinch the buds off when they need it to induce a bushy growth, and place them, when ready, in 4-inch pots. Plants intended for winter flowering, and which have been kept cool to ripen the wood will, if they are introduced again into brisk moist heat, soon show their flower buds. The side shoots that appear should be removed so as to induce the buds to swell as rapidly as possible. After they are swelling feed liberally if the plants are root-bound and need manurial assistance.

**Begonias.**—Young plants of the *B. nitida* type are very useful for spring flowering, and if good cuttings are selected and rooted at once the plants will be invaluable for flowering in 4-inch pots early in the season. They should be inserted singly in small pots and placed on a shelf close to the glass, where they will root much better if shaded from bright sun than in a close frame. Any house with a night temperature of about 60° will do for them. They should be flowered in 4-inch pots and grown without being stopped.



# THE BEE-KEEPER.

## BEES AT THE HEATHER.

### A PROPER ESTIMATE OF HIVES.

OVER and over again in these pages has it been stated that no trial is sufficient to test hives and systems of management unless in actual comparison in one locality. So satisfied am I of this, that I have no hesitation in saying that any trials held otherwise, and possibly by novices with hives they know little about, will end in failure. Such "trials," however, may possibly open the eyes of those who may have been so misled as to adopt the most expensive and most modern of hives and appliances under the advice of persons who are but very little removed from the novices themselves, and their experience is rather dearly purchased. I can scarcely point to one invention or improvement that the bee-keeper could adopt safely of which this Journal was not the pioneer and the instrument in diffusing knowledge and giving zest to bee-keepers who now form the centres of associations for teaching apiculture.

These centres of teaching are responsible for many of the departures from profitable bee-keeping, thereby causing dissatisfaction and disappointment to beginners. This necessitates the repetition of much that has been previously taught, which repetition might have been avoided had the would-be teacher kept more to practice than theory, and continued to teach as the veterans in apiculture had taught and fully demonstrated, instead of, as has been often done, denouncing the best system and hives of which they had no experience, bee-keeping would have been more advanced at the present time. If gentlemen who are really anxious to teach their poorer neighbours the profitable and humane art of apiculture (I do not refer to the brimstone pit) instead of hearkening to interested parties as to the great utility of their goods, and then recommending the same to beginners, who soon find out that they are disappointed in their expectations, had taken a run across the border in August and visited some of the Scottish moors, where every sort of hive stands side by side, from the most primitive small straw hive to that of the most capacious and well-made one, or from the common packing box to the most elaborate frame or Stewarton hive, then they could have witnessed the various arrangements, comparing one with another, taking notes, and weighing which had gathered most honey; then they, by ocular demonstration, could have not only have depended upon what they saw, but their pupils would in turn have depended on their statement and been grateful, for the ball set rolling in such a practical way could not have ended in other than success.

In my last article I stated the doings of one hive which, though good as an old swarmed stock, is not the greatest weight gathered, many hives having far surpassed it; but as it is yet too early to give in accurate reports as to weights made, I will confine my remarks at present to describing how I found my stocks on the 25th August. Apart from my own, however, I may make one remark on a Ligurian stock situated near them. It was weighed by the owner when taken to the moors on the 16 ult., and found to be 40 lbs., then on the 30th of the month, or in exactly two weeks, it weighed—well, I cannot exactly say how much, because as the owner said, "the hunner lb steelyard wouldna play poup tilt." The above will be a nut to crack for those who have had so much to say against the Ligurian bee as a bad storer of surplus honey and worker upon the Heather.

My own hives consist of Stewarton and frame hives. The former, true to the right principles of bee-keeping, are supplied with supers known as Stewarton supers, filled and sealed out to the number of two and three, besides the body boxes containing a large quantity of honey, while the brood nest is unimpaired, containing plenty of brood and space for eggs sufficient to carry on the economy of the hive and honey-gathering, though it should last for months, with sufficient bees to tide over the winter and start under favourable circumstances in the spring, with the best prospects for collecting another large harvest of honey. In the same enclosure are numbers of straw hives, which the clever bee-keeper (knowing the great advantage of large breeding space, and preventing it being glutted with honey by tiering) has of enormous weight, contrasting greatly with others of small dimensions, with every cell sealed with honey, and what few bees there are crowded out, fit only to be joined to another stock, as they are too few ever to be able to live during winter and start afresh in spring ever to be profitable; and though the hive is full of honey, an ordinary super from a strong stock will yield more honey than it. When the owner is remonstrated for

having small hives, the rejoinder is, "Big enough for my district," a popular error, which we are so anxious to eradicate.

Little better, and standing side by side with these, are the so-called "standard hives," also too small, with the same faults as the small straw hives, showing a decided contrast to either Stewarton, straw, or large-sized frame hives. Need it be wondered, then, that evils are to be resorted to to manage the mismanaged hives? Sections, so greatly applauded by some, have never found favour amongst the advanced Scotch bee-keepers, are here in different forms, my own hives being covered, and some partly covered, half sections, and half boxes. Wherever that is the case the supers or boxes are finished before a section is entered, while those whole sections the bees prefer to cluster out, then enter them. Sections, however, minus the bottom, are readily taken possession of. Some hives have sections filled, but so unwilling are the bees to enter them, that often the best time of the honey glut is past before they do so, as the bees require to get every advantage, losing no opportunity to enable them to come to perfection and attaining to great weights. It will be obvious to the merest tyro that anything, however trivial, that detains or interrupts the progress of bees should be earnestly studied and avoided. I trust that the foregoing, pointing out as it does some errors of bee management, will have a salutary effect upon the uninitiated to guard against such in the future, when they will be able to record success only. While it is not so heartsome to record failures, still it is hoped good will accrue from it, and be of as much service to the beginner as it has been to—A LANARKSHIRE BEE-KEEPER.

### TRADE CATALOGUES RECEIVED.

William Bull, King's Road, Chelsea.—Retail List of Bulbs and Tuberous rooted Plants.

E. G. Henderson & Son, Maida Vale, London.—Catalogue of Bulbous Flowering Plants.

John Lamont & Son, Edinburgh.—Catalogue of Bulbs.

James Yates, Stockport.—Catalogue of Bulbous Plants.

Joseph Schwartz, Lyon, France.—Catalogue of Roses.

Sutton & Sons, Reading.—Illustrated Catalogue of Bulbs for 1884.

Daniels Bros., Norwich.—Catalogue of Dutch Flower Roots.



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Wasp Traps (T. F.).**—If these are sold at a trifling cost it is a wonder they are not advertised—that is, if the vendor has more than he can dispose of privately, but perhaps he has not.

**Pandanus Veitchii (F. H.).**—This is a stove plant, and cannot be kept healthy in an ordinary greenhouse temperature during the winter.

**Nymphaea alba var. rosea (J. O.).**—There is no doubt that this variety is quite hardy and may be safely grown in the northern counties. Further particulars relative to the Rose-coloured Water Lily will be published in a future issue.

**Double Begonias (J. J.).**—The flowers, though not large, are excellent, and the colour is particularly pleasing. You evidently grow these plants well, and we shall be glad to have the details of your method of culture when it is convenient for you to send them.

**Grubs in Soil (G. C. E.).**—Your garden appears to be infested with the caterpillar of the common dart moth, which is exceedingly destructive in eating the stems of Cabbages, Lettuces, &c., just at or below the surface of the ground. It is very difficult to eradicate. We have often found it necessary to scrape the soil from the plants and place a mixture of lime, soot, and sulphur round the stems. If we were troubled now we should try the effects of petroleum, mixing a wineglassful to two gallons of water in which 4 ozs. of softsoap were dissolved, and pouring it freely in the soil close to and well round the stems. We should first try it on a few plants and note the effects. If the plants showed no signs of injury in three days we should



consider the application safe, and apply it to the remainder. We suspect it would act as a manure, and be a good preventive of the grubs.

**Small Figs (M. C. B.).**—The very small Figs on your tree in the open air will be of no use whatever, as they cannot be kept fresh through the winter. They will, perhaps, do the tree no harm, especially if it grows strongly, and may either be taken off in the autumn or allowed to shrivel on the branches. Only incipient fruits, smaller than the smallest peas, in October, as a rule, remain fresh through the winter, and ripen during the following season on trees in the open air.

**Apricots Failing (R. C.).**—As a rule Apricots do not succeed so well under glass as Peaches do; still, we have seen excellent crops. The Moorpark is the best variety. Do not make a large rich border; good loam with a twentieth part of lime rubbish and wood ashes will be quite rich enough, and it need not be more than 18 inches deep and 2 feet wide for young trees. It should also be made firm, taking especial care that the soil is neither extremely dry nor excessively wet when used. Let the tree have a light position, training the branches thinly about a foot from the glass; avoid forcing, and also sharp currents of air in spring when growth is commencing, yet give abundance of air on all favourable occasions, and you may hope to succeed in your object. The tree should be planted as soon as the leaves fall in the autumn; before then if it has only to be removed from the wall to the house. See remarks on moving Peach trees in "Work for the Week." This also applies to Apricots. If a large tree is planted the border must of course extend as far as the roots.

**Lord Grosvenor (W. B.).**—Our correspondent writes:—"I have sent you six Apples from a tree much prized. It is now about fifteen years old, and has always borne good crops, the last three or four years fifteen to sixteen pecks, although a small tree. As there are many judges who differ in opinion about the name I wish your judgment. It was sent to me for Hawthornden

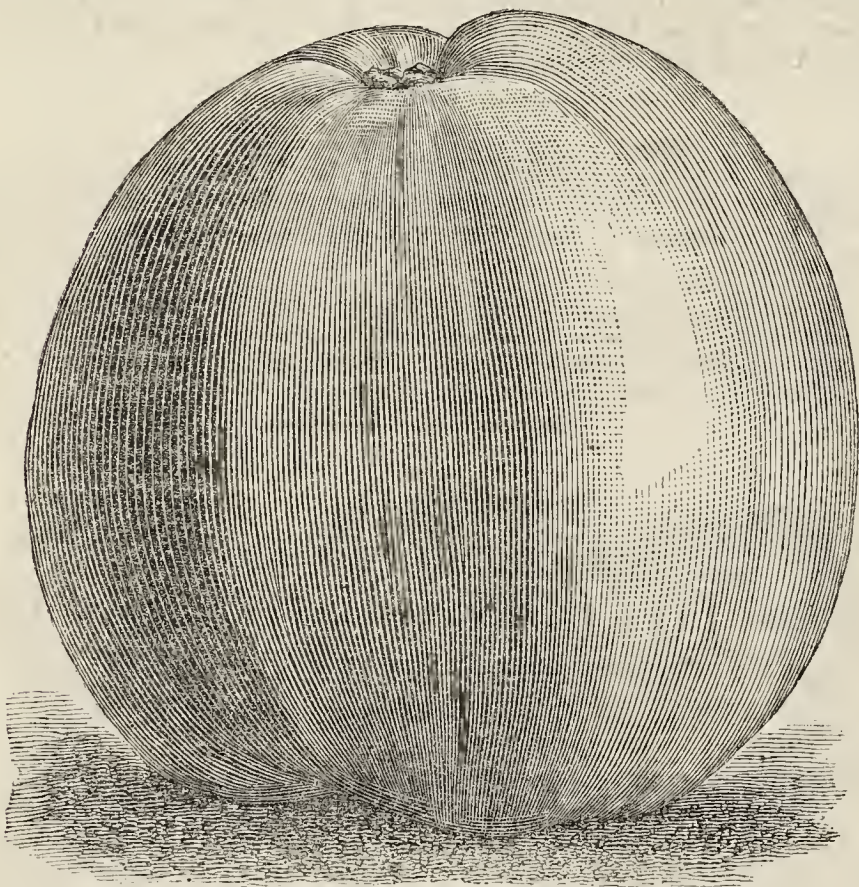


Fig. 46.—Apple Lord Grosvenor.

by an old nurseryman, but the name has been long erased." We insert this letter because it affords evidence of the value of the Apple, the name of which is given above. Lord Grosvenor has a general resemblance to Lord Suffield, but the fruit is more dense and heavy—no small advantage—and trees bear heavily in a small state; the fruit also keeps longer than that of Lord Suffield. It is a valuable Apple, and quite distinct from Jolly Beggar, with which it has been considered identical. It is important to remember this when trees of these varieties are ordered.

**Cucumber Leaves Withered (J. T. S.).**—The condition of the leaves sent indicates exhaustion of the plants. They have been too dry at some time or other, and this under the great heat has caused a shrinking of the tissue, hence the innumerable white specks. The presence of insects also suggests that the atmosphere of the house has been too dry. To keep Cucumber plants vigorous frequent top-dressings of rich soil are necessary, then with suitable moisture new roots are ever forming, and the plants may be kept growing strongly throughout the season. As to the Melons, unless you have young growths fairly starting from the older stems it will be of no use cutting the plants down now. If there are young growths remove the older parts and maintain a warm moist temperature, and you may perhaps get a small second crop of fruit.

**Grapes Certificated (Constant Reader).**—The following varieties have been certificated by the Fruit Committee of the Royal Horticultural Society:—Alnwick Seedling, Dr. Hogg, Duke of Buccleuch, Duchess of Buccleuch, Golden Champion, Golden Queen, Gros Maroc, Madresfield Court, Mrs. Pince, Mrs. Pearson, Royal Ascot, Royal Vineyard, and Waltham Cross. Possibly one or two others may have been similarly honoured, but we do not recollect them.

**Trees and Stocks (E. P. C. B.).**—We are glad to hear of your success. Your proposed method of planting and subsequently thinning and transplanting will do very well. As to the method, we should simply pursue the plan that has answered your expectations; we know of none more econo-

mical. We are not able to assess the value of trees or stocks, but according to your description we do not think the prices you name excessive. We are not in a position to express an opinion as to the desirability of raising a number of tall stocks, as we do not know what the demand is; but we know that many standard Apples are worked low on dwarf stocks, the trunks of the trees being formed by the varieties that bear the fruit. It is a mistake also to cut off closely all lateral growths from the stems while still young. A few leaves assist them to thicken considerably, as you may ascertain by experiment. We advise you to engage a practical man before entering largely on the work in question.

**The Russian Shallot (W. D.).**—It is not easy to find the origin of the dark-coloured variety known as the Russian Shallot. Mr. Barron, in his review on Shallots formed on the varieties in the Chiswick trials, observes:—"As to varieties, there are two very distinct types that have long been cultivated in this country, and two only—viz., 1, *Common*.—Bulbs small or about the size of a walnut, 1 inch in diameter and 1½ inch in height, of irregular pyriform shape; the outer skin when ripe silver grey or of a dirty brown colour; the inner scales slightly tinged with purple, produced in tufts of from five to eight or ten in number. Leaves about a foot in length, produced in close tufts of a bright green colour. This is the earliest variety. 2, *Large Brown*.—Bulbs nearly twice the size of the Common, being 2 inches in diameter and about 2½ inches high. The outer skin of a reddish brown colour; the inner scales or flesh tinged with deep violet or purple, fleshy. The bulbs produced in tufts of from three to seven or eight. The leaves 18 inches long, not nearly so spreading as the Common, of a deep green colour. It had for its synonyms New Russian, Small Red, Large Red, and Large Russian, also Stuart & Mein's Exhibition Shallot, which certainly appeared to be an extra large and fine selection. Two other varieties were grown and demand notice—viz., that which is known as the Jersey Giant Red Shallots and the Jersey Silver-skin, the seeds of which on being sown the one season produce bulbs like the Onion, and which on being planted out the following season produce flowers and seeds. These are biennial characters similar to the Onion (*Allium Cepa*), and quite distinct from the perennial and almost seedless character of *Allium ascalonicum*. These Jersey Shallots are in fact Onions, and of a very inferior variety. The bulbs are of a fair size, of uneven and irregular growth, being often divided into a number of crowns or smaller side bulbs similar to the Potato Onion. Some confusion seems to exist with regard to the Russian Shallot, Vilmorin and Thompson giving it as a synonym of the Jersey; whilst in this country, and more particularly in Scotland, it is well known as a true Shallot and synonymous with the Large Brown, and was in cultivation long antecedent to the so-called Jersey Shallots."

**Figs not Ripening (Z. H., Eastbourne).**—The most likely cause of the Figs not ripening is an excess of vigour in the tree, which we should counteract by root-pruning in autumn so soon as the wood becomes firm and before the leaves fall. Take out a trench one-third the distance from the stem the tree has spread of branches, cutting off all roots and going down to the lowest. Remove the surface soil from the trench to the stem down to the roots, and pick out as much as possible from amongst them without injuring them, and in place of the soil removed add some good loam mixed with a sixth part of old mortar rubbish, filling up the trench with the same, and ramming all very firmly. Water copiously when complete, but only once, and mulch with short manure 3 or 4 inches thick. Thin out the long bare shoots and leave the tree moderately thin of wood, so as to admit light and air, which will assist in its ripening. Remove all the unripe Figs larger than a horse bean in autumn, and those left that pass through the winter will give the crop of fruit next season. Give water abundantly during dry weather in summer and renew the mulching, or if you cannot apply the mulching afford weak liquid manure. You do not say upon what aspect the tree is grown. We presume south; if upon any other, the Figs not ripening may be due to that cause alone, there not being sufficient warmth on other aspects.

**Mushrooms Failing (J. C.).**—Many beginners in Mushroom-growing fail by commencing at the wrong time. June, July, and August are the months in which experienced growers fail to obtain a regular supply. It is clearly stated in "Mushrooms for the Million" that towards the end of July is the best time for beginners to collect manure, but August and September will do very well, as then the beds come into bearing in late autumn or early winter. It is impossible to expect such productive beds in the middle of summer as in autumn and spring, and manure should be collected accordingly. When this is good, rightly prepared, good spawn inserted, and the temperature correct Mushrooms are sure to follow. When the soil is sufficiently moist when used and the beds are kept covered with damp material little moisture can escape; still, if they get dry they must be watered. Your beds have no doubt been too dry. If they are dry now we should give a very heavy watering, and there is a possibility that if kept moist they may yield well as the autumn approaches. It is a mistake to purchase manure for growing Mushrooms at midsummer. Read carefully the article of "J. H. S." on page 232 last week, and you will find that the experience there recorded exactly agrees with our advice on this matter.

**Thuja occidentalis (J. O., Monmouth).**—We could not find any seeds in the cones; in fact, they are not yet ripe. If any seeds are perfected you may readily raise a few seedlings. The seed should be preserved until spring, and then sown in a pan filled with any light sandy soil, and then placed in a cold frame or under a handlight. The seeds should be covered with about a quarter of an inch of soil, which, if moderately moist at the time of sowing, will not need water. The frame or handlight in which the seed pan is placed must be kept close and shaded to prevent evaporation until the seeds germinate, when more air and light must be given until the seedlings can be grown under cool conditions. You may readily raise young plants by inserting cuttings now in light sandy soil under a handlight, the surface of the soil being covered entirely with sand. The cuttings should be selected similar to the portion sent to us and taken off with a small heel where they join the wood of the previous year. They will be all the better if they are a little longer and stronger. The heel must be cut clean with a sharp knife and the side sprays removed from the stem of the cuttings for about 2 inches of their length. These cuttings should be inserted thickly together, then given a good watering. After this they must be kept perfectly close and shaded from bright sunshine. They will



need no further attention until spring, when the cuttings will be well callused, and the handlights can be removed occasionally during showery weather. As soon as the cuttings have formed roots they may be lifted and transplanted 6 inches apart, or, better still, they may be potted until they are established, and then planted out. The creeper you enclosed is *Vinca minor*.

**Storing Filberts (Subscriber).**—See that the husks are thoroughly dry at the base before storing. A good plan is to place them in a glazed jar, and paste paper or other material closely over the tops, keeping them where it is not damp, and where the temperature is tolerably equable—a dry cellar for instance. Or the jars containing them may be covered securely and buried in a dry situation.

**Oncidium Papilio (L. J. K.).**—We think in time that your *Oncidium* will flower freely enough. Place it for the winter close to the glass in a temperature not exceeding 60°, and give only sufficient water to keep the pseudo-bulbs fresh and plump; and we do not doubt that flower spikes will appear from the growths made, if they are strong enough, just as the plant starts into growth. It is better to remove the flower spikes from Orchids that are “exhausting themselves” than to lose the plants. That is the best mode of recruiting their health. These varieties flower so freely and continuously that unless care is taken to afford them rest annually they soon become exhausted. We have nearly lost plants of *O. Kramerii* through neglecting to remove the flower spikes. You had better do this than further weaken your plants, and have to wait two or three years before they are sufficiently strong to flower again.

**Rondeletia speciosa (Tin Box).**—The above is the name of the flower No. 2, which from its appearance has been badly infested with thrips. It is a stove plant, and will grow rapidly and luxuriantly in a moist temperature of 60° to 70° by night, with a rise of 10° or 15° by day from sun heat. It should be grown in a pot in either a mixture of peat and loam in equal proportions, or in all peat and sand, the latter being preferable if the peat is good, as it does not turn sour so quickly. This is important, for unless this plant is kept in a healthy condition at the roots it will not long thrive satisfactorily. Potting should be done in spring, just after the plants show signs of starting into growth. The pots should be well drained, as a liberal supply of water is needed during the season of activity. Water must be most carefully applied after potting until the roots are fairly active. From this stage the plant must be grown in a moderately light position, or the wood will not be sufficiently firm to flower freely. After flowering the growths must be thoroughly ripened, the plant kept in a temperature of 60° during the winter, and watered with great care. If the specimen is as large as is desired, the previous season's wood may be well pruned back before starting the plant again into growth. One of the great secrets of success is to keep the foliage free from thrips, to which it is very subject. This can be done by washing it thoroughly with a solution of tobacco water and soft soap, 1 oz. of the latter to a gallon of the former. It may also be destroyed by fumigation with tobacco smoke. The other plant is *Solidago virgaurea*.

**Plants for Stove—Vines and Plants for Greenhouse (J. T. K.).**—In addition to the *Dipladenia Brearleyana* as climbers we should have *Stephanotis floribunda*, *Bougainvillea glabra*, and *Allamanda Hendersoni*. The *Clerodendron Balfourianum*, along with those above named, will give you some of the finest of stove climbers, and they should be trained to a trellis 12 to 15 inches from the glass. If you could make a border along one side to plant them in they would do better than in pots, excepting the *Dipladenia*. In addition to *Gloxinias* we should have some *Achimenes* for summer flowering. *Tabernaemontana coronaria* fl.-pl. is very sweet and not unlike a *Gardenia*, flowering in early summer; but we should have most plants in pots for winter flowering, such as *Begonia insignis*, *B. fuchsioides*, *B. semperflorens grandiflora*, *B. Ingrami*, *B. Saundersiana*, *Poinsettia pulcherrima*, *Euphorbia jacquiniæflora*, *Euphorbia splendens*, *Centropogon Lucyanus*, *Centradenia rosea*, *Thyracanthus rutilans*, *Epiphyllums*, &c. The *Gardenias* now setting their buds will not flower until spring unless you give them moist heat, 70° to 75°, and feed liberally so as to incite growth. That we do not advise, for though we have them the year round ours are grown in a house to themselves. It is best in an ordinary stove to be content with the flowers in late spring or early summer. Do not entirely withhold water from the *Clerodendron*, but only give sufficient to prevent severe flagging. Keep the soil dry through the winter, and give water again in February or early March. The wood when the plant is at rest must not be allowed to shrivel, and do not re-pot until after flowering. In the greenhouse, besides *Zonal Pelargoniums* you ought to have *Fuchsias*, *Tuberous-rooted Begonias*, *Show Pelargoniums*, which are fine for summer, and *Primulas* in winter, with bulbs and such plants for introducing after the new year as *Hoteia japonica*, *Deutzia gracilis*, *Dielytra spectabilis*, *Lily of the Valley*, &c. These would make your house gay in spring, and you might have a couple of *Camellias* with some *Indian Azaleas*. *Cinerarias* ought not to be omitted, nor yet *Calceolarias*. You could grow *Grapes* fairly well in the house, planting in the inside border, and 3 feet in width would answer if you feed the roots liberally. One Vine would do, but we should have two—a black and a white—and train to the roof, having a trellis 16 inches from the glass and a single rod from each, so as to allow of the plants receiving light; also the *Roses* on the back wall, which, if the roof were very much shaded, would not do very well. *Camellias* would succeed admirably beneath the Vines, and would do better on the back wall than the *Roses*; but you may prefer the latter, and the *Camellias* would do well in pots. Plant one Vine at each end of the border, which must be well drained, turfy loam, with a tenth of lime rubbish and a sprinkling of crushed bones being a suitable compost, the border being about 2 feet deep, and having a foot of rubble under for drainage. The best kinds of *Grapes* for your purpose would be *Black Hamburg* and *Foster's Seedling*. If you prefer one have the former.

**Grapes Cracked (J. P. S., Cornwall).**—This is not a case of cracking alone. In the first place, the setting was imperfect, the house having possibly been too moist when the Vines were flowering, and the pollen consequently was not freely distributed. Subsequently, we suspect, the atmosphere of the house was too dry, and possibly the border also; certainly the *Grapes* ceased swelling and the cuticle lost its expansive property; then when rain came in the autumn, or water was given, the influx of sap ruptured the berries. We also suspect the house has been kept too cold and damp at

night, and possibly the ventilators have not been always opened sufficiently early in the morning, otherwise mildew would not be so pronounced on the fruit. Your letter contains no data to enable us to form an opinion as to the condition of the Vines. They may be old and enfeebled, or the growths far too much crowded. They should be so disposed that every leaf is fully exposed to the light, and the foliage must be kept free from insects, which may not be the case at present; also, active roots should be present near the surface of the border. If they are not some of the soil should be removed, and fresh loam with a liberal admixture of wood ashes placed in contact with the roots, and on the soil a thick covering of manure which should remain to decay. With free root-action in good soil, stout, clean, thinly disposed foliage, and a genial buoyant atmosphere maintained, with a night temperature of 60° to 65° during the growing season, an increase of 5° in the day without sun and 15° with it, opening the ventilators early in the morning and closing early in the afternoon until the fruit colours, then admitting air night and day freely, yet judiciously, healthy Vines and good *Grapes* may be produced. We shall be glad if we can assist you further if you like to make us acquainted with the history and condition of the Vines, indicating also the treatment to which they have been subjected.

**Parcels.**—In Dr. Hogg's absence from this office, which will extend over a few weeks, parcels addressed to him cannot be attended to; nor can any parcels be forwarded to him. See notification at the head of this column.

**Names of Fruits (H. W.).**—Unless numbers are attached to the fruit they are certain to be displaced in transit. We can only say the striped Apple is the *Nonesuch*, and the flattish red fruit *Fearn's Pippin*. (A. D.).—If you desire the Apple to be examined again you must send good typical specimens.

**Names of Plants (C. O.).**—1, *Euonymus europæus*; 2, *Hibiscus syriacus variegatus*. (Sutton).—*Helianthus decapetalus*. (J. R. P.).—*Crinum capense*; hardly if planted in a warm border. (F. H. D. E.).—*Staphylea pinnata*, the Bladder Nut. (J. M.).—The flower is *Lysimachia vulgaris*. The Apples are not well-developed typical specimens, and we cannot name them. (A. Cole).—We have no recollection of receiving the flower alluded to; can you send another specimen?

#### COVENT GARDEN MARKET.—SEPTEMBER 17TH.

A good supply of Cobs, but clearing at reduced prices. Trade dull generally.

##### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. ..	½ sieve	2 6 to 4 6	Oranges .. ..	100	8 0 to 12 0
Chestnuts .. ..	bushel	0 0	Peaches .. ..	per doz.	3 0
Cobs, Kent .. ..	per 100 lbs.	50 0	Pears, kitchen ..	dozen	0 0
Currants, Red ..	½ sieve	0 0	„ dessert .. ..	dozen	1 0
„ Black .. ..	½ sieve	0 0	Fine Apples English ..	lb.	4 0
Figs .. ..	dozen	0 6	Plums .. ..	½ sieve	4 0
Grapes .. ..	lb.	0 6	Strawberries .. ..	lb.	0 0
Lemons .. ..	case	15 0	St. Michael Pines ..	each	0 0

##### VEGETABLES

	s. d.	s. d.		s. d.	s. d.
Artichokes .. ..	dozen	2 0 to 4 0	Lettuce .. ..	dozen	1 0 to 1 6
Beans, Kidney ..	lb.	0 3	Mushrooms .. ..	punnet	0 0
Beet, Red .. ..	dozen	1 0	Mustard and Cress ..	punnet	0 2
Broccoli .. ..	bundle	0 9	Onions .. ..	bunch	0 3
Brussels Sprouts ..	½ sieve	0 0	Parsley .. ..	dozen bunches	2 0
Cabbage .. ..	dozen	0 0	Parsnips .. ..	dozen	1 0
Capsicums .. ..	100	1 6	Potatoes .. ..	cwt.	4 0
Carrots .. ..	bunch	0 3	„ Kidney .. ..	cwt.	4 0
Cauliflowers .. ..	dozen	2 0	Rhubarb .. ..	bundle	0 4
Celery .. ..	bundle	1 6	Salsafy .. ..	bundle	1 0
Coleworts .. ..	dcz. bunches	2 0	Scorzonera .. ..	bundle	1 6
Cucumbers .. ..	each	0 2	Shallots .. ..	lb.	0 3
Endive .. ..	dozen	1 0	Spinach .. ..	bushel	2 0
Herbs .. ..	bunch	0 2	Tomatoes .. ..	lb.	0 6
Leeks .. ..	bunch	0 3	Turnips .. ..	bunch	0 4



#### LAND TILLAGE AFTER HARVEST.

(Continued from page 254.)

##### DRAINING LAND.

SOILS are so different that the general adoption of a common depth for drains is clearly impracticable. Desirable as it is to make them 4 feet deep, yet to do this in a heavy clay, which is put back upon the pipes and settles down into a dense mass almost impervious to water, is to court failure. Two feet of hard rubble over the pipes would make the drains perfect, but it would add so materially to the expense as to be impracticable. Compact little faggots of White or Black Thorn are often put upon the pipes and covered with soil. This answers tolerably well for a time, but with the decay of the wood the action of the drains becomes slower and less efficient. The best plan would be to burn the whole of the clay excavated from the trenches before putting it back, to make the drains 5 or 6 feet closer than usual, and then all would have been done for it that is possible by mere drainage. We have then only to impart thorough mechanical division to the soil, and we shall then, and not till then have brought it into a suitable condition to be rendered fertile and



really profitable farm land. How to do this is altogether a question of ways and means, often of so seriously expensive a nature that one could only hope to effect it gradually year by year. It may be said that such a case is an extreme one, not often occurring, and the measures requisite both for drainage and mechanical division are hardly applicable to ordinary clay soils. We admit it, but as such cases do exist it is well they should not be overlooked.

Clay soils of a less tenacious nature really require a similar course of treatment to that indicated, although it may be in a modified form, for no drainage will effect a radical change in such soils. Retention, expansion, and contraction are still there, causing them to be beaten down by rain, so that pools of water will be found upon the surface for some time after heavy rain has fallen. The power of clay to absorb water is greater than that of any other soil, but its power of retention is also greater, so that when its capacity of absorption is reached rain water must either accumulate upon the surface or run over and not enter it. Professor Schubler's experiments showed that 100 lbs. of dry sand would retain 25 lbs. of water; the same weight of dry loam retained 40 lbs.; of clay-loam 50 lbs.; and of pure clay 70 lbs. Drainage therefore should be immediately followed by a surface dressing of sand, ashes, lime, gravel, stone chippings, burnt clay, pebbles or shells from the coast, mortar rubbish, shattered bricks, or any other available substance calculated to blend readily with the soil and render it porous and free. We once turned a heap of 80,000 badly tempered bricks shattered in the burning to excellent account for this purpose, and may mention as an important fact that we have upon several occasions used one or other of the materials we have mentioned, simply because we have found them ready to our hand within reasonable distance of the field which it was desirable to improve. It is really astonishing how frequently such local advantages are overlooked or neglected; and we may mention as a case in point of hearing expressions of regret of the heavy wet condition of a piece of land upon a home farm near which lay a heap of several hundred cartloads of coal ashes, the accumulation of several years from the fires of the mansion.

In soil of a free, porous, uniform texture, drainage followed by thorough cultivation is sufficient. The work must, however, be well considered and carefully arranged beforehand. Levels, slopes, hollows, and all unevenness of the surface calculated to affect the work must be passed in survey, and a plan of the drains made. Parallel drains, useful as they are in level land, are often uncalled for upon land where the surface is much broken, however wet it may be, a main drain with a few branches often doing all that is required. Springs may cause wetness of the land, or there may be a mere accumulation of surface water only requiring an outlet. A piece of land sloping gently down to a stream was often so wet in winter as to be impassable. Upon examination we found the channel of the stream so deep that the water even in winter was several feet below the surface. The bank adjoining the wet land was of clay, a mere strip only a few yards in thickness, but so impervious to moisture that it acted as a barrier, confining the water in the soft boggy land behind it. A few openings cut through it soon drew off the water, and expensive drains were avoided. In another neglected field a spring was the cause of the mischief. A deep main to its source, with a few branches at right angles right and left of it, not only drained that field, but another field above it which was periodically wet owing to a false spring, which was really an overflow of the real spring in the swampy lower field.

TABLE FOR SIZE OF TILE OR MAIN DRAINS.

Rate of Inclination.	Acres drained (thorough drainage).						
	2-inch Tile.	3-inch Tile.	4-inch Tile.	6-inch Tile.	8-inch Pipe.	10-inch Pipe.	12-inch Pipe.
1 foot in 20	6.7	18.6	26.8	74.4	150.0	270.0	426.0
1 " 30	5.5	15.1	21.8	60.4	128.0	220.8	346.0
1 " 40	4.7	12.9	18.6	51.6	108.8	189.6	298.4
1 " 50	4.3	11.9	17.0	47.7	98.0	170.4	269.0
1 " 60	3.9	10.9	15.6	43.4	90.0	156.0	246.0
1 " 70	3.6	10.0	14.5	39.9	83.0	144.4	228.1
1 " 80	3.4	9.3	13.4	37.2	77.0	135.0	213.0
1 " 90	3.2	8.1	12.6	35.0	72.5	127.0	200.5
1 " 100	3.0	8.3	11.9	33.1	69.2	120.6	190.5
1 " 150	2.4	6.7	9.5	26.6	56.0	97.3	154.4
1 " 200	2.1	5.7	8.2	22.8	48.0	83.9	132.5
1 " 250	1.9	5.1	7.5	20.4	42.4	74.4	117.0
1 " 300	1.7	4.6	6.9	18.4	38.2	65.5	104.0
1 " 400	1.5	4.1	5.9	16.5	32.6	60.3	90.7
1 " 500	1.3	3.7	5.2	14.8	30.1	54.0	81.6
1 " 600	1.2	3.3	4.7	13.3	28.0	48.6	74.0
1 " 800	1.0	2.9	4.1	11.4	24.0	41.9	65.0
1 " 1000	0.9	2.6	3.7	10.2	21.2	37.2	56.0
1 " 1500	0.8	2.1	3.0	8.5	16.8	30.8	47.0
1 " 2000	0.7	1.9	2.8	7.4	15.0	25.0	40.8

One disadvantage of early drainage in autumn is the difficulty in

some instances of ascertaining the quantity of water to be dealt with during winter, and in cases of doubt it is better to put off the work then because of the danger of blowing from the use of pipes of insufficient capacity. For ordinary work the computation is simple. Tables of rainfall show that the maximum fall in twenty-four hours seldom exceeds 1 inch. An inch of rain equals 3630 cubic feet per acre, and as 50 per cent. of this only reaches the drains in that time, we have only to make enough drains to convey 1815 cubic feet of water per acre to render drainage of the land thorough. We insert Professor Sheldon's valuable table for the size of main pipes, and note his advice that the areas given in it should be doubled for ordinary farm drainage.

#### WORK ON THE HOME FARM.

*Horse and Hand Labour.*—Several beds of couch grass upon the Oat stubble taken for Trifolium gave so much trouble that the sowing was delayed for a couple of days in order that a clean seed bed might be had. The horse-hoe, harrows, carts, and men with steel forks were all kept briskly at work till the land was ready and the seed sown. First of all the horse-hoe was passed twice up and down the stubbles, and as it was soon evident that the twitch had a strong hold of the land, the men were set to dig out the large patches; meanwhile harrows followed the horse-hoe up and down, and were also put across twice, carts following as closely as possible to remove the rubbish out of the way of the horse-hoe, which was then put twice across the land. The harrows and carts again followed closely, the seed was then sown, harrowed in, and our Trifolium bed finished once more.

The broadshare has been steadily at work upon other foul stubbles, but the burning has been somewhat hindered by the heavy rainfall, which, however, has enabled us to do some paring left so late, because when tried a month ago the work proved too heavy for such horse power as could then be spared for it, and steam tackle was not to be had for the work just then. Wheat-growing at 4s. 6d. per bushel does not answer, and prices are not likely to improve while we have Wheat brought from America as ballast free of charge. Such a state of things brought about by shipping competition cannot last, and is so clearly a freak of the moment that home-grown Wheat had better remain unthrashed till the new year rather than be sold at a loss.

Barley is the crop to which greater attention will be given if only a fairly remunerative price is obtained now. This, and the broader question, What does pay? are keenly discussed when farmers meet just now. A serious diminution in the area of land under Wheat next season is a very possible outcome of the present depression.

Our Rye has been sown on a stale furrow, which gave an excellent seed bed. The ploughing was done a few weeks ago after tares. The appearance of some Dock leaves induced us to pass the horse-hoe twice through the soil; this brought the Dock roots to the surface, and they were carefully picked off before the sowing.

Hop-picking is in full swing, and will soon be at an end in many gardens. Early and continuous washing with the mixture given in the Journal a few weeks ago is rewarded by an abundant crop of large bright Hops, giving an excellent sample when dried. Prices range from £6 to £10 10s. per cwt., the higher price paying expenses and affording a handsome margin of profit, which the lower price will not do, for the outlay upon the crop this year has been exceptionally heavy. Special experience is required for the management of Hops, but we may usefully give some data. Taking a garden of thirty acres, three drying kilns will be required of sufficient capacity to dry 1500 bushels of Hops every twenty-four hours. Of this quantity 750 bushels will be picked and delivered at the kilns by mid-day, and the remainder some five hours later on. Each batch of Hops is from eleven to twelve hours upon the kilns, the whole being turned upon the kiln-floor at the fifth or sixth hour of the drying. The fires are of charcoal, and a small quantity of sulphur is put upon the fires twice at intervals of about two hours before the turning, and once afterwards.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1884. September.	Baromet- er at 32 1/2 inches and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.				
		Dry.	Wet.			Max.	Min.	In sun.	On grass.			
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.		
Sunday .....	7 29.542	57.8	51.7	W.	57.6	64.5	55.2	100.8	50.9			
Monday .....	8 30.138	60.6	55.2	N.E.	51.9	62.5	49.9	83.6	44.7	0.047		
Tuesday .....	9 30.212	64.3	61.3	N.E.	57.8	70.1	57.2	94.4	52.3	—		
Wednesday ..	10 30.254	62.1	58.7	E.	59.7	70.3	53.8	101.1	52.5	—		
Thursday ....	11 30.352	58.8	56.9	N.E.	59.3	73.4	51.3	109.3	43.0	—		
Friday .....	12 30.343	62.8	59.4	N.	59.4	74.2	54.3	111.9	46.6	—		
Saturday ....	13 30.265	66.0	61.7	N.E.	59.7	77.4	54.7	115.8	48.3	—		
	30.159	61.8	57.8		58.6	70.3	54.5	102.4	48.3	0.047		

#### REMARKS.

7th.—Cloudy, with gale in morning; remainder of day fine, bright, and pleasant.  
8th.—Dull morning, with spots of rain; drizzling afternoon; dull evening.  
9th.—Dull cloudy day. 10th.—Fair morning; bright afternoon, with cold easterly wind.  
11th, 12th, 13th.—Fine and bright; cool N.E. wind.  
A fine week, and on the whole bright, but with a good deal of chilly north-easterly wind. Temperature nearly 4° above that of the preceding week, and about 5° above the average.—G. J. SYMONS.





25	TH	Protheroe & Morris's Bulb Sale.
26	F	
27	S	
28	SUN	16TH SUNDAY AFTER TRINITY.
29	M	
30	TU	
1	W	Stevens's Bulb Sale.

## FLOWERS FOR VASES.

**T**HE highest philosophy leads to simplicity. What a time elapses before we recognise that fact! All Nature is essentially simple, and gardeners, as waiters on Nature and fellow workers with her, ought to study simplicity above all things. In nothing is this so true as in the arrangement of flowers. A dozen years ago we entered a cycle of vulgarity and ugliness in the floral decoration of dining tables. It is true that flowers, no matter how barbarously treated, always retain their individual beauty. That we cannot destroy, but we can and often do mar it, and at the time named we certainly did reach the lowest level of decorative floral art, while the labour and time spent in filling and refilling receptacles of tin or other material was just so much time wasted. Happily, we have attained to a period when Nature is more left to speak for herself. Without doubt we shall always have those who consider the labour and ingenuity spent on arranging flowers as some measure of their beauty, but a freer and a healthier tone prevails generally. In fashionable bouquets for the hand this is especially noticeable, for while a large amount of artificiality is retained it is an artificiality of a more generous nature, individual blossoms being less crushed together, and the rarer ones brought so prominently forward as to show their beauty on every side.

Bouquet-making, however, is comparatively limited in extent, and does not appear to be growing as a feature of garden work. Room-decoration with flowers, on the other hand, is spreading to an "alarming" extent, using that expression from a gardener's point of view, for the market grower and the middleman who disposes of his goods must look with lively satisfaction on the spreading downward tendency of this innocent and pleasure-giving taste, while all must cordially view the increasing love for flowers with appreciation. But from the gardener's look-out it becomes a question of much importance, as the prevailing tendency with all extra demands is to expect them to be met without any corresponding addition to the means for doing so. So it is in this case; summer and winter, spring and autumn, flowers are wanted, and the gardener is left to find them as best he may. I am afraid too many gardeners at the present day must think of the doings of Pharaoh the hard-hearted when he ordered his Hebrew subjects to gather their own straw without lessening their tale of bricks, and apply the case to themselves. Certainly it now-a-days requires much ingenuity to make ends meet.

I must return to my opening sentences and reiterate the fitness of simplicity. Too often very much more material is employed in vase-decoration than is required. To be orthodox we must have a border of Ferns and a complicated arrangement of blossom and greenery firmly packed so as to cover every particle of the space inside this Fern border. This is merely stereotyped conventionality, and it is wasteful. I see no reason why a vase may not be so arranged occa-

sionally, or always if you like; but to fill half a dozen or a dozen glasses in one room in this fashion, and further to carry the same arrangement out in every occupied room in a house, is beyond good taste to say the very least. When we call to mind that these flower receptacles may be of all sizes and shapes—tall trumpets and flat wide-mouthed dishes, dainty little vessels with narrow openings, or classical pieces of various shapes—the system above condemned becomes so much the worse. The vases gardeners are oftentimes called on to decorate are unsuitable, and so far it is difficult to carry out simple arrangements. I am also aware that the taste of their owners has to be studied, but outside these particular instances lies a vast field for many gardeners to work in with effect.

Considering the matter in a practical manner I have at once to concede that no strict rule can be laid down to be followed with advantage. But I may be allowed to offer some hints, which I trust may be found not altogether unworthy of consideration. The first hint I would give is to consider that flowers do not grow in bunches. A bunch of flowers tied together is a reasonable mode of carrying these in the hand, but not necessarily the best way of showing off or enjoying their individual beauty. This brings us to hint that the shape and size of the receptacle should be studied. A large trumpet-shaped glass, and a low, wide, and open dish require widely different treatment. The latter might at present be effectively and simply filled with flowering shoots of Pansies or Violas; or Sweet Peas, Horse Gowans, and Mignonette make a charming mixture; or, going to more refined (?) material, we may employ double Ivy-leaf Pelargoniums, sprays of Heaths, Begonias, Lapagerias, or Stephanotis, in each case using sufficient foliage of Pelargonium or Begonia or Sweet Peas for a setting without having to add Ferns. The idea is to have flowers charming in themselves, and so arranged as to show their beauty easily. Then if we take the tall trumpet we must decide on bold flowers at once, and, as in the case of the flat dish, a certain flatness of arrangement is called for, so in our tall glass any approach to flatness must be avoided. If you use single Dahlias, cut shoots with leaves, buds, and open blossom, and arrange as freely as the plant itself grows. If Gladiolus be selected, cut with foliage attached and let the spikes be fresh, young, and bold. And so on with any other flower chosen, let them always be massive if possible, and stand free of each other. For medium-sized glasses a certain degree of airiness should prevail. Roses are not particularly "airy," but by cutting with long stems, keeping the foliage intact, and adding sprays of Jasmine or the common Clematis lumpiness is easily avoided. Very suitable for such glasses just now are the Japanese Windflowers, which may either be used by themselves or intermixed with Marguerites, Oxeye Daisies, and Sweet Peas. The most charming of all flowers just now are Picotees and Carnations. These are much better arranged in smallish vases, first inserting in the water four or five healthy cuttings (foliage), and then adding a few long-stemmed shoots cut off just as they grow. For small glasses I think, as a rule, that fine single blooms are much the best—an Eucharis backed with a spray of Maiden-hair Fern, an open Gloire de Dijon with foliage and bud, a truss of double Ivy-leaf Pelargoniums with its own foliage, are examples of what I mean.

These are all flowers common at present that are mentioned, but the same remarks are applicable to flowers at all seasons. Notwithstanding the great variety of flowers we have to choose from, gardeners have restricted themselves to a few well-known kinds, and, unfortunately, have treated them all very much alike, no matter whether a flower grows in lowly fashion like a Pansy or on tall shoots like a Chrysanthemum, the blossom itself is snipped off with an almost unvarying length of stalk. This should not prevail. Colours of flowers are often badly selected for effect. Take the Chrysanthemum as an instance, and we have a great variety



of shades and colours which are not uncommonly mixed together when cut. Red, white, and yellow Chrysanthemums are almost enough to employ for cut purposes, and they should, as a rule, be cut with long stems and arranged thinly in large vases, leaving foliage and buds to show. Single Anemones are grand for spring, but are very seldom met with. Many wayside or wild flowers are lovely. Forget-me-nots, Bugloss, Marsh Marigolds, Oxeye Daisies, Cornflowers, Harebells, Grass of Parnassus, and Wild Roses, are names that occur at the moment.

Just a line or two more to protest against the general employment of Maidenhair Fern to the exclusion of other foliage that is equally beautiful when appropriately employed. For many purposes the Maidenhair is of unique value, but for decorating vases in general it is much better to rely on foliage belonging to the flowers used. With even more force does this apply when decorators pass the leafage Nature has bestowed on plants and ransack the pinetum for material.

In decorating dinner tables, I do not think anything is more suitable than rather small glasses to be filled with good flowers. At the same time I would not like to say anything against laying cut flowers on the cloth provided it is done without anything hinting of artificiality. I mean I would not make any arrangement as to shape other than just laying on the flowers as they are cut. If the flowers are poor in character some other means of using them should be employed.—SYLVANUS.

### THE TOMATO CROP AND ITS USES.

So uncertain have been the Tomato crops in the open air of late years that many growers have nearly or entirely discontinued planting out, preferring to fruit a greater number of plants under glass. The season of 1884 will perhaps again lead to a return to the old practices, or at any rate will encourage many to persevere with open air culture that have not the superior advantages afforded by a forcing house. On all sides we hear of wonderfully heavy crops being secured from plants trained to sunny walls, and which were by no means specially prepared for the purpose—that is to say, the plants were raised in frames, and by the end of May or early in June, and when planted were smaller and more backward than they ought to be. The plants grew well from the commencement. No disease has touched them, and the tropical weather experienced during August had the effect of swelling the fruit to a great size, and, what is still more satisfactory, induced an early and perfect ripening. As a rule house-grown fruits are considerably better in quality than any ripened in the open air, but this season there is but little to choose between them. Tomatoes, too, are the only fruits that are not greatly injured by wasps this season, and altogether those who have acquired a real liking for them have every opportunity of enjoying their own products, or of purchasing at a comparatively cheap rate.

It would be a difficult matter to decide which are the heaviest cropping varieties this season, but none that I have seen surpasses Orangefield, Old Red, Earley's Defiance, Hathaway's Excelsior, King Humbert, Hackwood Park, Phillip's Perfection, and President Garfield. King Humbert, a variety of continental origin, has been grown extensively on the open walls in Messrs. Robert Veitch & Co.'s Exeter Nurseries, the plants carrying very heavy crops of fruit from the ground up to 4 feet in height. The fruit are borne in large clusters, are of the shape and size of Victoria Plums, of good colour and quality. Unless I am much mistaken it will be found identical with the newly certificated Chiswick Red. Be that as it may, it is evidently a robust prolific sort and well worthy of a trial. Hackworth Park with me, both in pots and on open walls cropped heavily, the fruit being handsome and fairly good in quality, but why it should receive a certificate from the Royal Horticultural Society, and Phillip's Perfection be passed over, is a mystery to me. I find Perfection quite as heavy cropping, rather more handsome in shape, and decidedly superior in quality. The fruit of Hackwood Park is more thick-skinned, and does not always ripen and colour well up to the stalk, but Perfection never fails in this respect, and, as Mr. W. Taylor has more than once remarked, it is the only sort I grew that would favourably compare with Dwarf Orangefield as he grew it when at Longleat. Varieties of Tomatoes in common with Melons are fast becoming too plentiful, and size and appearance would appear to be principal objects aimed at by the raisers.

Where the competition is good in the classes for Tomatoes, and it has been the case in several good shows I have visited this season, awarding the prizes has been a very difficult matter, and the awards, as might be expected, were anything but satisfactory to the non-

winners. In some cases the corrugated or ribbed sorts were preferred, in others smooth round sorts triumphed, while in one or two instances mere weight, regardless of appearance, carried the day. Of the three decisions the latter was by far the worst, as such monstrosities as President Garfield and Sims' Mammoth are by no means desirable varieties in my estimation, though the former as grown at Wilton House by Mr. Challis is said to be the best flavoured sort he has yet tried. The time has arrived when something definite should be decided on as to the proper manner of judging Tomatoes, and in my humble opinion quality should be the principal essential. Melons have always been judged by flavour, and it is fast becoming the practice at shows to cut and taste Peaches, Nectarines, Figs, Apples, and Pears, and why not, therefore, judge Tomatoes on the same lines? To some judges the tasting would be a disagreeable duty, but not more so than tasting twenty Melons, of which not unfrequently about seventeen are unfit to eat. I do not suppose there are six men in the country that are competent to give an opinion on the merits of all the varieties of Tomatoes now grown unless by tasting, and as they are cultivated principally for use, this and not the fact of certain sorts being most ornamental should be borne in mind. Judged on these lines we should soon see a change effected, the best flavoured sorts being then eagerly sought after, to the manifest gain of those who eat the principal portion of the produce.

It is now very well known that it is a good plan to cut all nearly fully grown, but still unripe Tomatoes, before they are injured by frost, and hang them in bunches either in a warm plant or forcing house to ripen. Failing these positions they may be hung up in the kitchen near the fireplace, where many of them will also ripen fairly well. It must not be expected that fruit thus ripened or coloured will equal those ripened on the plant, but they will be fit for cooking purposes.

There are various ways of storing and otherwise utilising the ripe fruit when these are plentiful; but there are, I believe, but few people who think of turning the small late-formed fruit which will not ripen, no matter how favourable the season may be, to good account. They can be made into most excellent pickle, which but few would think of declining. The best recipe I am acquainted with was found in an old cookery book under the title of "Chou-chou Pickle," and this differs slightly from that given, among various other recipes, by Dr. Hogg in the "Gardeners' Year-Book" for 1880, and which he kindly allowed me to copy into my treatise on the Tomato. The recipe I allude to, and which I have proved to be most trustworthy, is as follows:—"Take 2 lbs. of green Tomatoes, bruise them, then add two or three medium-sized Onions, sliced according to size, and six Chillies; scatter salt over it, letting it stand fifteen hours, then strain away the moisture, and cover the remainder with good vinegar. Bake this in an oven for one hour, and then press the pulp into jars. Now take a dessert spoon each of mustard, pepper, mixed spice, half teaspoon each of sugar and cloves, a little cinnamon, and four Chillies, adding sufficient vinegar to make this quite thin. Boil it and pour over contents of jars while boiling hot." Another good recipe under the heading "Tomatoes for Pies" may also be acceptable to some of my readers who may have a quantity of green fruit too backward to ripen. "Pick the Tomatoes green; scald them and take off the skins. Put them into a preserving pan, and let them boil for half an hour. Cut them up, and put in 1 lb. of sugar to 3 lbs. of Tomatoes, and let them cook for half an hour longer. Season them with the juice and peel of Lemon, and put them away in jars. These make very good pies in the winter, and resemble Gooseberries."—W. IGGULDEN.

### CHOICE ALPINE PLANTS.

GENTIANA KURROO.—Some five years ago this lovely species figured among hardy plant novelties, and plants were eagerly purchased, though the price was an exorbitant one. It never came to us in any quantity, and it is highly probable that it is even rarer now than when first offered to the public. Such a state of things is to be regretted, for where we met with a dozen instances of its loveliness then, we can neither hear of nor see it to day. Why this should be so I know not, still it is an undeniable fact. That it ranks among the best of its race there is no doubt, and is in all respects a gem of the first water. Many testified to its being one of the most distinct and beautiful among Indian Gentians, and which was readily and fully endorsed by all who had either flowered it themselves or seen its lovely blossoms expanded in the morning's sun. The charming species under consideration is a distinct plant in a variety of ways; primarily in its long linear radical leaves, which bear a strong resemblance to some of the narrower-leaved forms of our British Plantains, and not at all unlike *Armeria plantaginea*. Its flowering stems, which vary from 6 to 12 inches in length, are of decumbent habit, and are furnished at intervals with small oppositely placed leaves, while the flowers are produced in



terminal and axillary clusters, in all cases the terminal ones being much the finer. The calyx tube is distinctly twisted, while the flower buds, together with the fully expanded blooms, are equal in size to those of the garden Gentian. The predominant colour is an intense indigo blue, of a lighter shade on nearing the tube, and densely spotted with white in a uniform blotch. It comes from the Western Himalayas, where it is found at a great elevation. It delights in a deep moist (never wet and never dry) bed of equal parts of peat and rich fibrous loam, with abundance of sharp grit, suits it well; choosing for it a partially shaded position where the direct rays of the mid-day sun may be broken. Its time of flowering is about the second week in September, and it is a decided acquisition to its genus: it is propagated by seeds chiefly, since the plants themselves take some years ere they are of sufficient size to admit of division.

**CAMPANULA WALDSTEINIANA.**—This is a rare and pretty species from Carinthia, and is remarkable for its dense carpet-like tufts, which soon form into a complete and spreading mass, smothered during August and September with its tiny erect bluish-lilac flowers; these usually appear in such numbers as to completely hide its slightly glaucous leaves. It is quite the plant required for covering bare places on the rockery, being easily managed and readily increased by division. This operation should be performed during showery weather in spring. It delights in light sandy loam and a somewhat sunny position; freestone, sandstone, or magnesian limestone chippings might with advantage be mixed with the soil. It should be in every collection of choice plants. It seldom exceeds 3 inches in height, at least under cultivation. I have both grown it well and seen it in excellent condition in the York Nurseries, also in the Rock Garden at Bickley. It appears originally to have been brought from Hungary during the year 1824.

**ZAUSCHNERIA CALIFORNICA.**—Apart from this dwarf autumn-flowering rock plant, we have scarcely anything possessing such a brilliancy of colour and producing greater effect for so lengthened a period as this does. It is one of those indispensable plants, seeing that it flowers at a time when rock and alpine plants generally are conspicuous by the almost total absence of flowers. It is fairly known and duly appreciated. Still, there is a wide field open for it, and those desirous of having it on trial need not wait till they can afford some elaborate rockery to plant it on, for it is as much at home in the open border as anywhere, and, above all, a point considerably in its favour, too, is that it succeeds in almost any ordinary well-drained soil. I recently saw some splendid patches 2 feet or more across in a gravelly and somewhat hungry soil, and this after a dry scorching hot summer; therefore I do not think there is any further need to impress upon the minds of intelligent readers the desirability of growing such a plant as this. It is of neat, compact, bushy habit, and usually grows about 1 foot high, though I have known it in light loamy soils in a warm situation to attain a height of 18 inches. Its flowers are of a bright vermilion scarlet and tubular in shape; these are borne in great profusion, which, coupled with its brilliant colour, render it one of the most effective of autumn-flowering plants. I may here mention a fact connected with its free growth. Last autumn I purchased some plants in small pots; these with many others were permanently planted out, and have now made charming cushions 18 inches across and studded with flowers. Strictly speaking, it is an herbaceous perennial, and appears to form numerous underground stems during the winter, as I have known it to send up stoloniferous shoots 6 inches each way from the spot where it was originally placed, and that in about four months after planting from 2½-inch pots. It is easily increased by division and also by seeds, and cannot be too extensively employed.

**CAMPANULA FRAGILIS.**—This is another of the gems of late summer and early autumn. For pot culture it is well adapted. Of this I am forcibly reminded by some splendidly flowered examples almost within arm's reach, which completely hide both pot and foliage from view. They are simply grand with their pale blue flowers. Not the least noteworthy fact in connection with it is that it succeeds admirably as a window plant, and far eclipses all others of its genus in this particular. Nothing can afford greater pleasure than to possess a plant of such sterling merit, which is so well adapted to such a variety of purposes; it makes, too, a capital basket plant, and is not less useful for adorning the rockery. Those who have experience with it as a pot plant where occasional handling is necessary will not be in ignorance of the peculiar aptness of its specific name, the prostrate stems breaking off at the slightest touch. In planting it on the rockery, place it in a well-drained sunny position in rich light sandy loam, and where it may droop over a projecting

ledge; in this way its effect is most pleasing, and can be seen to advantage. I should have mentioned that it delights in deep soil. It is a native of the Italian Alps. *C. fragilis hirsuta* is a variety which, as the name implies, is densely clothed with stiff silken down: in other respects it is identical with the typical species, being equally valuable. Both are propagated by careful division of the rootstock and by cuttings of the young shoots in heat in the spring. So remarkably brittle is the plant that in potting press the soil firmly with the fingers, and avoid the usual knocking of the pot on the bench, or half of the branches may be broken off.—J. H. E.

[We reproduce an engraving of *Campanula fragilis*, which appeared a few years ago in the Journal under the incorrect



Fig. 47.—*Campanula fragilis*.

name of *C. isophylla*. For suspending in pots in windows we know of no plant better adapted nor more beautiful.]

#### NOTES ON VEGETABLES.

**Ne Plus Ultra Pea.**—Is there a better late Pea than Ne Plus Ultra? Is there one so good as regards size of peas, colour, and especially flavour? I have not met with one; in fact I know no Pea which at any season is so fine in all respects when placed on the table. Its one fault is the height to which the haulm grows, but this can very easily be cured by switching off the tops when a desired height has been reached. From Messrs. Veitch we had a moderately dwarf variety named Sturdy. It is nearly as good as Ne Plus Ultra, and would be worth looking after by those desirous of growing dwarf sorts.

**The Best-flavoured Tomatoes.**—I do not think we are wise in growing very large-fruited varieties which do not possess the flavour of some smaller fruits. Dedham Favourite is one of the best flavoured I have tried; moreover, the fruit is very fleshy and with very few seeds. There is one aspect of Tomato culture which I do not remember to have seen noted, and that is the advantage of ripening the fruit in a warm temperature. The difference between fruit ripened in a low temperature



and that finished in a high one is decided as regards flavour, in the latter case the flavour being much better.

*Garden Potatoes.*—What advantage is there in growing so many varieties of these in gardens? I know of none. I do not think that any Potato is so generally suitable for gardens as Myatt's Kidney. It is a good cropper, of excellent flavour, and with proper treatment it is perhaps as early as any. It is, moreover, a variety that can be eaten till field crops are ready, and later if desired, and if a few are wanted to show it can be turned out in pretty good form for that purpose. Has not the time arrived for judges to recognise the table qualities of Potatoes? We have gained absolutely nothing in respect of flavour with all the new sorts which have been so freely thrown into the market during the past few years.

*Changing Seed.*—I am not convinced that "Thinker" is correct with regard to a change of seed being of no advantage. I can tell by the growth which is bought seed and which is our own. The former is always stronger and healthier, and the crop better. I fully recognise the necessity of having every set strongly started before planting, and to defer planting until the season is so far advanced as to justify the expectation of genial weather. Potatoes to do well should be grown from first to last without a check.

*Assisting Vegetables.*—Just at this time it is possible, by a little judicious help, to make a difference on the right side on vegetable-growing for winter and early spring use. Weak plants neither winter so well nor are of so much use as robust plants. There are two ways of rendering help. The one is to spread a thin coating of fresh horse droppings amongst any backward crops—a barrowload will go a long way if judiciously applied. The other way is to give a very slight dressing of sulphate of ammonia, three-quarters of a cwt. to the acre is amply sufficient now. Neither of these dressings, if applied as directed, will cause a growth which cold weather will hurt, while they will quicken growth at a very critical period. Leeks, Onions, Spinach, Lettuces, late Turnips, and Greens for spring are the crops likely to receive benefit. I have even found Broccoli very much helped when in a backward state at this date.—B.

### IMPORTED DENDROBIUMS.

PERHAPS of all the Orchids in cultivation few are imported and established more successfully than the above; and taking the Dendrobiums collectively I question if any others will so readily adapt themselves to the various conditions under which they are placed on their arrival in this country, or more liberally repay by their profuse and gorgeous inflorescence any extra attention to their cultural requirements. Although there are about 300 known species and varieties of Dendrobiums, yet there are but a little over a hundred in cultivation in this country, and about one-half of these may be said to be of botanical interest only, thus leaving some fifty or sixty species and varieties worthy of general cultivation on account of their showy flowers only.

It has been my duty at two different periods of my career to deal with the establishment of large importations of Orchids from different parts of the globe, and I have frequently had the privilege of inspecting the private department of the most noted metropolitan nursery; but I have never had nor seen more complete success in the establishment of imported Orchids—Dendrobiums in particular—than is attained by Mr. Walker, gardener to B. P. Broomhead, Esq., Broomhall Park, Sheffield. Whether they be Vandas, Aerides, Saccolabiums, Cattleyas, Lælias, Thunias, Oncidiums, Odontoglossums, Cœlogynes, Paphinias, Scuticarias, Chysis, or Dendrobiums, everything appears to grow as if by magic. Pay Mr. Walker a visit in the month of April, and you find a large batch of Dendrobium Wardianum and various species of Vanda and Saccolabiums just received from Rangoon all dried and shrivelled; the Dendrobes just started into growth, perhaps, and the young growths quite bleached by the darkness of the box, and the strongest pseudo-bulbs not more than 12 to 15 inches in length and  $1\frac{1}{2}$  in circumference. Visit him again at the end of August or beginning of September, and you find stout aerial roots of Saccolabiums, Vandas, and Aerides wandering in all directions; those that are nearest to the front wall clinging to the same and extending more than a foot in length, as though they thoroughly enjoy the brickwork. In another and cooler house is seen about a hundred plants of Dendrobium Wardianum on the front shelf in 48-size pots, and so robust in appearance as to render it almost incredible that they can be the same plants seen in April. From the comparatively weak imported pseudo-bulbs have sprung, under Mr. Walker's fostering care, stout pseudo-bulbs from 2 to 3 feet in length and of proportionate strength, with foliage broad and leathery. Adjoining the D. Wardianums are some extra strong plants of D. primulinum with growths 2 feet long and nearly as thick as an ordinary ruler. Close to these are several plants of D. heterocarpum var. philippinense equally as vigorous. On the back stage are several beautiful specimens of D. thyrsiflorum and D. densiflorum without a blemish, and, if my memory fails me not, grown during the past three seasons from imported

pieces. At the back is a magnificent example of D. Dalhousianum with pseudo-bulbs 6 feet long. This year they have broke double, and promise to finish fine growths. Next to this is a good plant of the brilliantly coloured D. Paxtoni. This species in my opinion is not surpassed in the richness of its colour by any other Dendrobium in cultivation, and when laden with from twenty to thirty panicles of its semi-transparent rich yellow and crimson-lipped flowers it is a sight to win the admiration of everyone. Dendrobium Devonianum is a highly creditable example of cultural skill, with pseudo-bulbs 3 feet 6 inches long and  $1\frac{1}{2}$  inch in circumference. This lovely Dendrobe should be in every collection of Orchids however small. Close by is a capital piece of D. Wardianum with growths nearly 5 feet in length and strong in proportion. It is questionable if there are any finer growths than these in the kingdom.

In other houses are as creditable examples of D. dixanthum, D. Bensoniæ, D. chrysanthum, D. pulchellum, D. Dearci, D. Falconeri, D. Parishii, &c., all established from imported pieces, and giving unmistakeable evidence of the success that may be achieved even by those who are comparatively inexperienced in the cultivation of these choice exotics provided they are treated in a common-sense way. Nor are elaborately and expensively constructed houses a necessity; indeed I know several instances where such structures proved Orchid-killing instead of Orchid-growing. Therefore I say to amateurs (for whose benefit these notes are written), Do not be afraid to attempt to grow Dendrobiums, or any other Orchids, if you possess two structures in which you can stand upright, and command in one a mean annual temperature of  $55^{\circ}$  and in the other an annual mean of  $45^{\circ}$ , with facilities of maintaining a fairly moist and buoyant atmosphere and of giving shade at will. Given the possession of those few simple elements of cultivation, combined with a love for the subject and steady application, success will be certain.

As soon as the imported plants are received they should be carefully sorted and each kind placed by itself, decaying and decayed pseudo-bulbs and roots being cut off with a sharp knife, all sound portions of both pseudo-bulbs and roots being retained. They should then be carefully washed all over, removing all decayed vegetable matter from amongst the roots, and keeping a sharp look-out for and removing all insects that may be upon them. As I am writing of Dendrobes in particular, most of the pieces may then be placed in as small pots as possible, using clean pots and crocks; the former should be about three parts filled with the latter, using a layer of sphagnum over all. The most important point is to keep the base of the pseudo-bulbs well elevated above the rim of the pot from three-quarters of an inch to 3 or 4 inches according to the size of plants and pots used. The interstices between the roots and side of pot may advantageously be filled compactly with sphagnum and fibry peat, sticks should be placed firmly in the crocks to which the plants can be tied securely. The operation of potting being completed, the Dendrobes should be placed in a position where they can have a genial temperature of from  $60^{\circ}$  to  $70^{\circ}$  (a higher temperature before new roots are formed is to be avoided). A mat or some other material may be kept over them for a few days whilst the plants become inured to the light, but as the pseudo-bulbs "plump up" and the young growths lose their bleached appearance the shading should be gradually dispensed with until it is only used to prevent scorching.

A few of the dwarfest species would be better fixed on to blocks with copper wire, and a little moss placed about their roots, but most of the other species I find to do the best when treated as described.—J. U. S.

### THE PAST ROSE SEASON.

"A. F. M." gave us some very pleasant thoughts on the past season, and as he asks opinions from others I will see how we agree. It has been often pointed out in your columns that it is as unfair to oneself as to the Rose to judge of its value from its behaviour in one season, or from its appearance in a stand. Roses have their years of super-excellent character, and many of them have also years when they appear almost worthless. Even we, the ladies and lords of creation, would not care to be judged on an occasion when, for instance, matters had not gone quite smoothly, and when we may have been greatly tried, and possibly been put somewhat awry. So it is with the Roses, for as "A. F. M." remarks, even that queen, Marie Baumann, has not with him been "always good alike."

Circumstances have utterly precluded my visiting any Rose exhibition this year, and therefore my remarks are penned wholly from watching my own plants. With me Marie Baumann has not been the conspicuous failure of which he writes; she has held her own, although possibly not quite equal to some years, yet, take her for all in all, no other H.P. has equalled her. My greatest successes



in the Hybrid Perpetuals have been with Marie Baumann ; the weakness of stem is her only blemish. Charles Lefebvre, Alfred Colomb (this Rose I have never grown so well), Beauty of Waltham, Duke of Wellington, Madame Victor Verdier, and Pauline Talabot among the darker ; Comtesse d'Oxford, Marquise de Castellane, and Victor Verdier among the pinker varieties ; La France and Baronne de Rothschild among the lights. No light H.P. in my humble opinion behaves so kindly as her ladyship in bad weather ; of all light Roses of the H.P. type she is A1, soiling less than any other, and retaining her beauties under difficulties. With a few more petals she would be very high in any election. Her children in some respects follow her as to behaviour in bad weather, but with me Mabel Morrison is whiter than Merveille de Lyon. Thus far I am of the same opinion as "A. F. M." "Disappointing" I should apply to Merveille de Lyon, but it is too early to form any opinion ; Violette Bowyer has not impressed me, and Madame Lacharme never gives me an exhibition bloom. Does Madame behave the same with "A. F. M.," throwing up numbers of buds at every joint, which as they grow up appear to me to arrest all growth in the primary bud ? I am speaking of shoots that have already been fairly disbudded, these shoots not appearing till the selected bud is just expanding. With me she is a perfect failure. Mons. Noman we have long given up about here ; Capitaine Christy I do not give up, but he is terribly disappointing—foliage so handsome, buds so large and promising, and then a blotched distorted bloom as the reward of expectant waiting ! Still I cannot discard it ; there are some Roses one keeps from association, and Captain Christy and I were schoolfellows ; yes, "a long time ago !"

Talking of association in Rose-keeping, there is another Rose I do not discard partly from association yet not a little for itself, but I never hear of anyone else who grows it, I mean, of course, amongst amateurs. I have just referred to Cheshunt Paul's catalogue, and the Rose has slipped out of that. Some years ago our Journal frequently contained notes on Roses and other matters from the Rev. W. F. Radclyffe. All he wrote, whatever he may have preached, was not gospel, and some of his notions were quaint and were adhered to pertinaciously ; some might put a stronger word. Still I was sorry, very sorry to miss his thoughts in the Journal, though I frequently disagreed with them. Well, there is a Rose named Rushton Radclyffe, after him and his former abode ; it is a shade small, but beautiful in shape with me, whilst in perfume it is one of the most delicious of the Perpetuals.

As showing the difference of locality, I should have said that Pierre Notting had not been so successful this season as "A. F. M." has found it. This Rose has always been a very great favourite of mine, indeed it is only the last year or two that in the election lists I have relegated it to the second twelve, pushed down by younger aspirants. I have before now shown it, so that had there been a prize for the best H.P. the bloom must have been in the running, but this season has not been so good. Then, as to A. K. Williams, I, too, have noticed the same thing as "A. F. M. ;" a bloom picked, apparently not arrived at its best, placed in water, has markedly diminished in size as if shrivelling, but I have seen the same with other Roses, and doubt whether it does not depend on certain conditions of atmosphere at the time of cutting. Since I wrote, some few weeks since, on the constitution of this grand Rose, not a few have endorsed my opinion.

Of Teas, my greatest success and pleasure have been with Marie Van Houtte. Years ago I wrote of this as only being able to grow it as a buttonhole Rose, but this year some of my blooms might not have disgraced the "back seats" of a stand ; it is very decidedly one of the best. In the early part of the season I was delighted with Francisca Krüger (I hope no relation to the Boer) ; she is a beautiful combination of colours, and a free bloomer ; the later blooms have not opened so well. Madame Lambard, of whatever shade of colour—and she is seen in many—always beautiful, but a little too quick in opening, a point to be thought of when exhibiting ; but what an addition to this most charming class of Rose ! Perle des Jardins exquisite, and with me far superior to the Rose that has been said to surpass it—Etoile de Lyon ; this Rose, with many plants, has utterly failed to give me a single respectable bloom. The buds on standards and on dwarfs promise well ; cease to open, the outer petals shrivel and get ragged, and altogether with me this Etoile is a star of the smallest magnitude. Catherine Mermet merits always a title that the French are fond of giving—"ravissante."

Like "A. F. M.," I took Madame Cusin without a character. I recollect his asking for one. Like him, I cannot at present give her one ; I fancy she will not remain in the catalogues. Rubens I took on the character obtained in the election lists ; few electors gave this Rose an A1 testimonial, but also very few omitted naming it. I have not been disappointed here, and think Rubens one of the loveliest, especially in the bud.

My pen is running away with me, but I cannot hold it in, and you must prune, Mr. Editor, if you will. Before leaving the Teas, let me

urge all who say they cannot grow this lovely—well, yes—this loveliest class of the queen or empress of flowers, to try them as suggested by Mr. George Paul on beds raised a foot higher than the rest of the surface. I tried the experiment last year ; they were nearly all weak plants, the remnants, in fact, and those that lived have done capitally, and the summer for such a bed has been very trying. I propose adding to the bed, for supposing all the blooms fail of exhibition rank, yet, if any young rosarian bachelor wishes to make a favourable impression on one he might desire to make his queen, among his flowers I commend him to a bed of Tea Roses, where he can cut freely, and may his prospects be as rosy as his offering.

I agree with "A. F. M." that "yearling" would be better than "maiden." I also agree with him that those who can select their buds should take them from a flowering shoot, but I go a little further. If you want the best plants you need to select your buds from the shoot that has given the grandest bloom, and this is just one of the reasons that makes it difficult to estimate the value of a Rose during the early years of its coming out. Every bud of a "marvel" is a bud, that if it take, will make a plant, and hence is used. Nor can we blame the nurseryman for this ; he has already "paid dearly for his whistle," and perhaps the whistle may never give a sound worth listening to.

Lastly, if I can, I would repay "A. F. M." some of the pleasure his article has given me by saying, Does he touch his Cloth of Gold with a knife ? If he will leave it alone, nailing it up—I presume it is against a wall—let it run up 20 feet high or more, and patience will have its reward some season in the future ; a wealth of buds will burst into glorious blossoms, and "A. F. M." will allow that its name is deserved. One other hint. If "A. F. M." has a fruit tree that grows luxuriantly but does not bloom, I suspect he root-prunes. Well, why not serve Cloth of Gold the same ?—Y. B. A. Z.

#### THOUGHTS ON CURRENT TOPICS.

THERE has been so much that is good to think about of late in the Journal that I cannot keep abreast of the subjects ; but before it is too late I must ask all who are interested in hardy fruits, such as Apples and Pears, and who desire to preserve them in the best condition, to peruse thoughtfully the valuable article on the "Fruit Room" on page 223. A more suggestive, useful, and opportune contribution has not appeared for some time, and it should not be passed over lightly.

EXCEPT butter and fatty matter, there is nothing more absorbent and at the same time retentive of effluvia than Apples and Pears. If these are to be placed on the table as they should be, with the peculiar flavour of each in all its purity, the fruit room must be kept as clean as the dairy ; yet herbs, Onions, fusty straw, and now and then a Mushroom bed may be found in the structures in which the produce of orchards is stored. That is a great mistake, and when it is committed it is impossible to have Apples and Pears in anything like perfection.

THERE is a German adage to the effect that he who thinks much accomplishes little, which means that thought without action is profitless. And it is ; but I have been acting as well as thinking, and the result is I have paint-flavoured, petroleum-flavoured, tar-flavoured, carbolic acid-flavoured, Onion-flavoured, Mint-flavoured, Sage-flavoured, and fusty hay-flavoured Apples by simply enclosing fruit with the different articles in boxes for several days. This has proved conclusively the immense importance of scrupulously clean, sweet, and properly ventilated fruit rooms.

THAT experiment has led to further action, and the fruit room is now as clean as hot water and limewash can make it, for the shelves have been scrubbed, the walls washed, and every nook and cranny thoroughly cleansed. In this room neither hay, straw, nor any other "bedding" will be used. The fruit will be placed carefully on the shelves, which are as clean as a kitchen dresser ought to be. If the boards were quite new I should cover them with white paper, not newspapers saturated with bad ink, and by changing the air of the structure as needed the fruit will be uncontaminated. That is, I think, what we should strive for ; and the first and most important step to be taken at once, not merely "thought about," is that of thoroughly cleansing and sweetening the structures in which Apples and Pears will have to be kept, when they are sufficiently plentiful, for the next six months.

"SURELY learning is to be had without wrangling," writes Mr. Burton on page 263. I thought when I read that observation I would give it all the prominence in my power, as a timely hint to controversialists. Those persons who cannot discuss a subject without indulging in personalities, which if not intended to give pain are calculated to do so, ought not to venture into the field of public criticism. Nothing is more pleasant nor instructive than a well-conducted discussion when the object of the writers is to elicit facts ; but when the subject is lost sight of in a mere wordy wrangle the wranglers are regarded with mixed feelings, in which admiration is not a chief element. Let us have discussion and even differences ; but also let us remember that a person who studies to express his differences in the most agreeable manner possible towards opponents shows a generosity of mind that commands respect.



THE concluding paragraph in the truly admirable article of "A. F. M." last week shows conclusively that the strong can afford to be generous. I am thanked, be it noted, not for supporting the views of a writer, but because my criticism was "friendly." That is what we should endeavour to cultivate—"friendly criticism." The best way in which I can show my appreciation of the kindly references is to comply with the request of your correspondent to bestow a few passing thoughts on his "disjointed notes."

"DISJOINTED." In that lies their freshness. One-idea articles, stretched over column after column, are seldom otherwise than tedious; but here is an article that sparkles with ideas and suggestions from end to end. There is, in fact, so much to think about in it that the difficulty is to know where to begin.

LEAVING to rosarians the discussion of varieties, I will dwell on a few other points, and will first of all tell "A. F. M." what he "ought to have done" when his blooms were infested with thrips, as at least I will tell him what I found useful. When both Roses and Carnations were opening I syringed them with quassia water; being perfectly clear it did not stain a petal, and the insects certainly did not enjoy it. This decoction was made in the simplest manner, and not in accordance with the orthodox prescription of boiling for so many minutes, then diluting, &c. Chips were just put in a vessel of clear cold water at the rate of an ounce to each gallon, and after forty-eight hours the decoction was used without any dilution. As often as a gallon of water was taken out another was put in with an ounce of chips, and a supply of the insect deterrent was always at hand with little trouble. That, I think, is the easiest mode of preparing quassia water and of banishing thrips.

"A. F. M.'s" observations on and experience with liquid manure merit thoughtful attention. Liquid manure is either an enemy or a friend of the cultivator. Given when needed of the proper strength, and when the soil to which it is applied is moist, it cannot fail to be highly beneficial; but given when not required or given too strong, it is decidedly injurious; in fact, it is in one case nourishing food, in the other nothing less than poison. Plants that are growing freely and have thereby impoverished the soil in pots or borders may, and indeed ought, to have liquid manure if further or stronger growth is desired; but to give it to weakly plants with slight root-action is one of the greatest mistakes that can be made. The few roots cannot absorb what is given, but the soil absorbs the salts of the manure to such an extent as to prevent what is greatly needed—further root-extension. The erring cultivator thus defeats his object in the most effectual manner.

LIQUID manure should never be given when the soil is dry, even if the plants need extra support. Strong food given to a famishing mau is admittedly dangerous, and it is equally dangerous to give it to plants suffering from thirst. An able man has written, "A plant which is in soil healthily moist will take up what it wants: one flaccid by want of water will absorb any soluble matter, even to its own repletion and destruction if applied in water."

"A. F. M." is quite right in advocating the use of liquid manure when the soil is moist, but not for the reason he states, that the plants "have their mouths open then, and are on the feed." They are "on the feed," it is true, as a healthy satisfied animal is; but if the animal is half dead with thirst it will drink five times more in a given time when water is within its reach than if it were not uncomfortably thirsty, and if the water contains anything that is injurious it is drunk all the same; therefore, supposing one grain of matter in a gallon is safe and five grains dangerous, the dangerous dose is necessarily taken by the great greedy drink. It is exactly the same with thirsty plants; they absorb much more water—their roots of course being plentiful and absorbent—in a given time than less thirsty plants do, and consequently take up an injurious quantity of the matter in solution. They have no power to reject it; if they take the water they take what is in it, and the excess is poison. That, I think, is the explanation of the danger of giving liquid manure to plants in dry soil.

THE right course to pursue in giving Roses or anything else a needed stimulant in dry weather is to first give water copiously, and allow a sufficient time for the plants to quench their thirst before liquid manure is applied to the roots. It is not enough that the soil be moist, but should have remained so for several hours when the stimulant is applied. It is then not only safe but beneficial. A good plan is to saturate the beds towards night and give the liquid manure before the dew is off the foliage the next morning.

ANOTHER method of giving liquid manure to Roses well established in beds is worth thinking about. I have thought a great deal about it and acted on the thought with decided benefit to the Roses and satisfaction to myself. I refer to giving the liquid stimulant in the winter. Whenever the soil is sufficiently drained for water to pass freely through it the drainage from manure hills may be poured into it copiously without fear any time from October till February, and the liquid can be given then much stronger than at any other period of the year. I think if "A. F. M." will try this out-of-the-way plan of giving liquid manure to a few Roses that need assistance, the results will be such as to encourage him to extend the practice another year.

ANOTHER "wrinkle" in the article in question will be noted by

the observant and turned to account by the wise. "Be sure to bud stocks from flowering shoots" of strong-growing and shy-blooming varieties is a splendid idea. I recall to mind a circumstance that occurred years ago with the barren but beautiful Cloth of Gold. The first bloom I saw of that Rose was in the coat of a nobleman. From the stem supporting the bloom we took two weak buds which were inserted in a standard Briar; one of them grew, and the next year produced a splendid bloom. After that the plant took to growing, was pruned like the other standards, but was never known to bloom again. I know that cuttings made from wood that has flowered, say of Gloire de Dijon, produces dwarfer and more floriferous plants than those raised from strong flowerless shoots, and for years I have been careful to select the former growths for plants raised for flowering in small pots. And it is the same with Maréchal Niel, which may be flowered in 5-inch pots, but not when raised from robust shoots. It would be singular if the same character was not displayed in plants raised from buds, and I can only regard myself as a poor thinker not to have thought of that before.

OTHER things I should like to dwell on, but cannot; one, however, should not be passed on maintaining a supply of late Peas. Young gardeners especially should take note of a remark in Mr. Luckhurst's excellent article on vegetables on page 255 relative to doubling the number of rows of Peas for a late supply. I failed in the manner referred to more than twenty years ago. Ever since then, instead of the usual two rows at a time, I have put in six rows of late Peas towards the end of May, or a similar and larger quantity towards the middle of June, and have never since failed to gather a dish of Peas when wanted until frost stopped the supply. When we consider that very late Peas do not set half so many pods as form on earlier rows it follows that we must double the quantity of rows or a blank is inevitable. By far the best Pea for use in September, October, and November is Ne Plus Ultra.

IN conclusion, I am going to venture on delicate ground. In all meekness may I suggest that I think it would be an improvement if the printers would not make me talk more nonsense than is my wont? In the last line of my fourth paragraph last week the words "this communication" were substituted for "their communications," which the Editor will find if he cares to refer to my manuscript.—A THINKER.

[Our correspondent is quite right; it was a printer's error that ought not to have been made and passed.]

#### FRUIT TREES IN POTS—A REVIEW.

IT is quite a quarter of a century since my first attempt was made in the culture of fruit trees in pots. The system was then in its infancy, for though it was not new to grow Vines, Figs, and Cherries in pots, it was not until the publication of "The Orchard House" by the late Mr. Rivers in December, 1850, that an impetus was given to the general culture of fruit trees in pots. Some possessors of gardens, not overburdened with means, saw, or believed they saw, in these cheap structures a convenient mode of reducing the fruiterer's bill. Some became quite as enthusiastic as the originator of the system, and this was more particularly the case with those residing near the great manufacturing towns. To grow fruit outdoors was next to impossible, and that had from the shops was stale or not of a quality seen at the tables of friends in the country; besides, the locality itself was quite unfavourable to the successful cultivation of the choicer fruits either against walls or in the open. It was in cold localities and smoky districts that orchard houses were to effect wonders. The proprietor of a plot of ground had nothing to do but erect a cheap house, and requiring no expensive appliances, or little skill in management to enable him to grow his own fruit instead of buying it or trusting to the weather. Those that could not afford expensive vineries, Peacheries, and walls for growing choice fruit could have all they needed from an orchard house—Grapes, Peaches, Nectarines, Apricots, Figs, Plums, Cherries, Pears, and Apples. There arose quite a mania for orchard houses; they sprung up like Mushrooms, quickly and thickly, until in the words of the author above noted, "Every moderate-sized garden in England—more particularly in the north and in Scotland—had in the course of a few years its orchard house. They glistened on highland and lowland, and gladdened many a garden-lover with their genial climate and varied produce." This is one side of the question. Gardeners of the old school, though they were accustomed to grow fairly good Grapes over Pines, Peaches, and Nectarines on trellises beneath, scouted the toy trees and the flimsy houses, their frailness of construction and instability of material. I confess to having formed a similar opinion. Houses with wood sides to a height of several feet, in fact to the eaves, did not appear likely to render the lower part of bush or pyramid trees healthy. The trees, as they must have all the light they received vertically, would soon be in the same condition as trees in a wood, very different indeed from trees having light laterally as well as vertically.

Ours was the first house of its kind within three-quarters of a mile of the centre of a large manufacturing town. It had wood sides, a glass roof, and side ventilation only. It was a complete failure. Other houses were erected in the locality. They had glass side lights made to open the entire length of the house by crank and lever movement, and were 20 feet in width, ours being only 12 feet. They succeeded admirably. I had the temerity to give an account of these in this Journal, and was complimented by Mr. Rivers for having the courage of my convictions, but the late Mr. Pearson of Chilwell took me to task, and sought to give



zest to the "new idea" by applying to me the old adage of "Bad workmen always complain of their tools." I believe it was Loudon that once wrote that there was more to learn in visiting a good but badly kept garden than there was in viewing one well kept. Failure prompts inquiry, leads to the making of comparative experiments, and these result in the acquirement of a fund of reliable information. Success institutes no inquiry, it knows nothing only the bare fact, and that may vanish upon the first trial under adverse circumstances.

After a long experience in orchard-house culture, and in various localities, it is well to take a retrospective view of what has been accomplished through their agency. The most important of these is the fact of the great incentive given to amateur gardeners to attempt the culture of fruit trees under glass. Perhaps more houses have been erected within the last thirty years for the culture of fruit trees in pots than any other, except it be by those constructed for a few plants. Where are orchard houses now? What has become of those large structures that were erected in many trade establishments for raising trees to sell in a fruiting condition? What has become of this particular branch of fruit culture? I could name several large trade establishments that each devoted a large house to fruit trees in pots. In one instance the house is now used for rearing Vines, another for Orchids, and a third for growing Pelargoniums for market. I was forcibly struck with the cause assigned for the discontinuance of growing fruit trees in pots at the Royal Horticultural Society's Gardens, Chiswick—viz., the success of this mode of culture being established and the house required for other experimental purposes. Why not for the same reason do away with the Vines in the great conservatory? I suppose these pay. Did the pot fruit trees pay? Of the many houses that sprang up on every hand a quarter of a century ago how many are now devoted to the cultivation of fruit trees in pots as originally intended? There has been from some cause a great diminution in the number of orchard houses and the culture of fruit trees in pots. Many expected a pyramid tree in a pot to carry almost as many and as fine fruits as a tree on a trellis covering several more feet of space, and were accordingly disappointed.

There is no question of the value of an orchard house, even in large gardens, where there are ranges of vineries, Peach, and Fig houses, if it be only to grow Plums, Cherries, Pears, and the choicer Apples. These attain a greater degree of perfection in cold localities than they do in the open, and very valuable dishes of fruit are had, which help out the dessert, especially during the last ten years, as outdoor fruits were not only scarce, but as compared with that grown under glass, of indifferent quality.

Where there are not the usual vineries, Peach houses, &c., I know nothing so useful as an orchard house. Judiciously managed, it will afford Strawberries from plants in pots on shelves in early June, Cherries a little later, Peaches in July of the early kinds, Plums in August, Pears and Apples in the same month of early sorts, and will continue until October or later with a proper selection, and a Vine or two over the pathway will afford Grapes in September. I do not know any structure so useful in a garden, especially in cold localities, as the orchard house. From June to October inclusive something of value for the dessert may always be relied upon, and these come in very acceptably, even where there are other means for growing fruit. Orchard houses are also very useful for hardening off summer bedding plants in spring, and they are still more so in autumn for housing and affording a display of the finest of autumn flowers—the Chrysanthemum, as the fruit trees can be moved outside, and are all the better of a few weeks' exposure, their roots being protected from frost.

One fact about trees in pots is generally overlooked—viz., their becoming too large for the house, which is a result generally of overstocking in the first instance, but for the successful treatment of any trees it is essential that they make some growth, and as a consequence they become too large, in which case it is better to plant younger trees than permit overcrowding, which soon spoils the trees. In some gardens a reserve is kept—young trees growing on, and from these some are drafted each year to supplant those which are not in a satisfactory condition, and by those means a much larger measure of success is attainable than when there are no such reserves to draw upon, as the house is kept filled with healthy fruitful trees.—G. ABBEY.

#### CHRYSANTHEMUMS IN 1884.

CHRYSANTHEMUMS promise this season to be very good, judging from the appearance of the plants at this stage; they are strong, and the recent hot weather seems to have ripened the wood thoroughly, a necessary matter in the production of finely developed blooms. The buds, too, which have been "taken" are swelling fast and look plump and of good form. We may look forward to a very busy season, as there are so many fresh shows in almost every direction, indicating well the increased love for the queen of autumn flowers. Connoisseurs of this flower will be on the look-out for novelties in the different sections, of which there are likely to be several additions that may not be any improvement on good older varieties.

I note several societies are offering prizes for "naturally" grown flowers, a very good way to assist in settling the vexed question of "dressing" by giving the general public an opportunity of comparing one style with the other, and of course will much please the lovers of naturally grown flowers; but will they be able to distinguish them from the others? After all it is only a matter of personal taste. We wonder what the "National" Society will do this season to merit its name. No doubt they will have a fine show, as they offer good prizes, but I think

they would have a much better one if they selected another place to hold it in; however, that concerns them only. All will welcome any improvements they make, and I heartily wish them success.

MR. DAVIS'S CHRYSANTHEMUM NURSERY.—Lovers of Chrysanthemums in the neighbourhood of London are likely to have a rich treat this season, judging from the preparations which are being made at Mr. Davis's nursery at Lilford Road, Camberwell. He has erected a new span-roofed house 70 feet long and 30 feet wide wherein to display his very large collection. The house in question is thoroughly well ventilated and very light—two great advantages in Chrysanthemum culture. Judging from the appearance of his plants he is likely to have a very fine show. His 2000 plants look wonderfully well—strong, clean, and carrying good foliage down to the pot, a sure indication of their health. Since Mr. Davis turned his attention solely to the cultivation of Chrysanthemums he has been able to increase his stock, which now has assumed large proportions, including all the new varieties as they are brought into commerce. This season he has a number of seedlings, from which he expects some novelties.—E. MOLYNEUX.

#### WHITE PINKS FOR FORCING.

REGARDING this old garden favourite, it may be of service to some if I give a few particulars of a somewhat rough-and-ready system of culture we have adopted for several years with success. From the middle of this month to the first week in October we look over our clumps and choose such as are most compact and are then showing a number of small fibrous roots at the base of the season's growth. Some plants appear to emit roots much more freely than others, hence our care in selecting. Cutting them off with two or three inches of old stem will ensure having a cluster of growths on each piece. According to their size place two, three, or four together in a 4 or 5-inch pot, which may form one bushy plant. Place them in a shady position or cool frame for a few weeks, when the small hair-like roots soon commence growing, and by the middle of February reach the pot sides. If the plants have had a cool airy position sheltered from heavy rains and frost they may be introduced as required into gentle moist heat, and will give a good supply of bloom from Easter onwards. Some other Pinks may be flowered under the same treatment, though not quite so early, nor are they so valuable as the old white.—E. BURTON.



THE NEIL PRIZE.—We are informed that Mr. W. Young, the well-known Assistant Secretary of the Royal Caledonian Horticultural Society, has been awarded the Neil prize of £40. This prize is awarded triennially to noted horticulturists, and has been held, among others, by the Messrs. Thomson and Mr. Webster of Gordon Castle.

— A GARDENER sends the three following notes on Roses:—"At this season of the year a large bed of the CHINESE ROSE CRAMOISIE SUPERIEURE, colour brilliant rich crimson, is very effective. If it is grown on its own roots there need be no fear of it being destroyed by frost if the surface of the bed receive a good dressing of long manure about December. It produces vigorous shoots from the base, which bloom beautifully in September.

— "MINIATURE ROSES.—Miniature Roses, or Rosa polyantha as they are sometimes termed, are very useful either for growing in pots or beds. We have grown the following three varieties, and have found them very useful for buttonholes, as they are very light and elegant. Pacquerette, pure white; Mignonette, light pink; and Anna Maria de Montravel, white.

— "AUSTRIAN BRIARS.—The different varieties of Austrian Briars are very useful for growing in shrubbery borders. Harrisonii and the Persian Yellow are the best. They do not require any pruning beyond the first year or two; if this is not attended to they are apt to become top-heavy."

— CHARLOTTE ROTHSCHILD PINE APPLE.—Mr. J. Muir, Margam, writes:—"This I regard as one of the best of all Pine Apples. It is a good all-the-year-round variety, as it swells up handsomely at all times, and the flavour, which is the main point in all productions for the table, is first-rate in winter and summer."

— HYACINTHUS CANDICANS.—"M. M." says—"This is most effective for the shrubbery. One day lately I saw some splendid specimens of it,



with massive pure white spikes of beautiful flowers 6 feet in height. They were associated with choice evergreens, which showed them to advantage, so much so that I am sure were they generally planted in such positions they would give the utmost satisfaction."

— AT the last meeting of the Royal Horticultural Society of Ireland a new SCARLET-FLESH MELON from The Gardens, Stradbally Hall, Queen's County, and raised there by Captain Cosby's gardener, Mr. Taylor, was placed on the table. It was considered, both as regards handsome appearance, size, and flavour to be of exceptional merit, and was unanimously awarded a first-class certificate and also the Society's bronze medal. Mr. Taylor will perhaps oblige us with the name of his Melon which received such a signal mark of approval.

— "THE ENGLISH BOTANY" (G. Bell & Sons, Covent Garden).—Part 87 of this work continues the description and illustration of native Cryptogamous plants, concluding the Equisetaceæ and commencing the Characeæ. Eleven plates of Equisetums are given, together with ten plates of Nitellas, beautifully executed. The descriptive matter is very full, and contains a great number of references and synonyms.

— HULL CHRYSANTHEMUM SOCIETY.—We are informed that the Committee of this recently organised Society are endeavouring to have a satisfactory exhibition in November, and with that object liberal prizes are offered, including the handsome one of £10 as the first prize for forty-eight blooms. The Chairman of the Society is Mr. Geo. Bohn, son of Mr. H. G. Bohn of Twickenham, whose death was announced in our issue of the 28th ult. Some of the most influential gentlemen of the neighbourhood are supporting the Society, of which Mr. R. F. Jameson, Queen's Dock, is the Honorary Secretary.

— CELANDINE.—"A Surgeon," in answer to "A Herb Lover," states that he believes the basis of Celandine to be salicylic acid. That is all he knows about it. He has no doubt it may be had from any chemist.

— TRITOMAS.—These are among the showiest of autumn-flowered perennials, and seem to be generally very fine this year, but nowhere have we seen them in better condition than with Messrs. Heath & Son, Cheltenham, where hundreds of their brilliant spikes are now in perfection.

— THE ESSEX FIELD CLUB CRYPTOGAMIC MEETING.—The fifth annual Cryptogamic meeting of the Club will be held on Friday and Saturday, the 3rd and 4th of October, in Epping Forest. It is intended to devote the Friday to collecting specimens, and to their examination and arrangement by the experts, and on the Saturday to hold an exhibition of fresh and preserved botanical specimens, microscopical objects, drawings, &c. The exhibition will be confined to subjects from the vegetable kingdom, but not necessarily to the Cryptogamia, although that division will hold a very important place. The exhibition will be opened at four o'clock on Saturday, October 4th, in the large ball-room attached to the "Roebuck Inn," Buckhurst Hill.

— WEIGHT OF FRUITS.—Mr. R. Begbie, Ravensbury, Ascot, Bucks, writes:—"Having read in the *Journal of Horticulture*, page 262, a request by one of your correspondents in reference to the greatest weight of Peaches, it may be recorded that when I was an apprentice, and in charge of the forcing department in the gardens of Lord Blantyre at Erskine House, Renfrewshire, many years since, Noblesse Peaches were grown and exhibited in London which weighed 1 lb. each. Black Hamburgh Grapes were shown at the same time from flued hot walls weighing about 4 lbs. per bunch, and with only herring-nets in front as protection. The gardener then, and for many years previous, was the late Mr. George Shiels, a most excellent fruit-grower and a leader in other branches of gardening." Mr. Thos. Elsworthy, Court Hey Gardens, Liverpool, also writes:—"It may be interesting to your correspondent to know that in 1881 I gathered six Peaches, which weighed 4 lbs. 1 oz.; the largest weighed 13½ ozs. The variety was Walburton Admirable, which I consider one of the best late Peaches we have."

— THRIPS ON DAHLIAS.—Thrips seem to have this year infested the Dahlia blooms in a remarkable manner, many flowers being full of them and rendered useless. Standing in the vicinity of some large beds recently, clouds of thrips were observed hovering overhead. This is one of the incidents of a hot dry season.

— STEWED LETTUCE.—"F. S. R." wishes she could endorse Mr. Luckhurst's experience of his vegetables this year. She never was so badly

off owing to drought. She would also be greatly obliged if Mr. Luckhurst would publish the receipt for stewing Lettuces as recommended in the article referred to.

— "M. S." writes:—"No collection of herbaceous plants, however small, should be complete without *SENECIO PULCHER*. Flowering at this season, when the number of showy flowers is fast declining, leaves no doubt of its usefulness. Grown in the ordinary bed or border it does fairly well in stiff soil, but where the soil is light, sandy, or stony, unless in complete shade its success will not be satisfactory. Its favourite situation, however, is in the marsh or bog, where it is not unusual for it to attain 5 or 6 feet in height, with large beautiful-coloured flowers from 2 to 3 inches across. In the latter position, too, it has the advantage of flowering a little earlier than in the border, thereby giving a longer period of flowering before it succumbs to the early frosts. Owing to its lateness in flowering it rarely has time sufficient to ripen seed in this country; but it may be freely propagated by cutting the root into small pieces and placing them in pots or pans in a slightly heated frame. It is a native of Buenos Ayres, and is perfectly hardy in sheltered places outside."

— AMONGST the few ALPINE CALCEOLARIAS none is more suitable or more hardy for rockery cultivation than the handsome *C. plantagineum* when grown in a nice sunny position with free gritty soil on a gentle slope. It sends up at this late season numerous beautiful pale sulphury-yellow flowers, which are very welcome now, as most of the early things have gone past. The leaves are broad, oval, coarsely toothed, quite glabrous, and shining, in which it differs widely from the pretty hybrid between it and *C. Fothergillii*, and called *Kellayana*, which is also an extremely valuable plant in its way, though, owing to the damp and wet, more difficult to cultivate with us than the above. A cool shady corner should be chosen for *C. Kellayana*, and any extra attention will be sure to be repaid by the display of curiously marked flowers. A good companion to the above is the pretty dwarf *Erodium Reichardi*, quite at home scrambling over the small rough stones, and displaying its charming white, reddish-veined, star-like flowers—quite a contrast against the dark rosettes of kidney-shaped leaves. It proves hardy in shady well-drained nooks, though its increase is very slow until fairly established.

— CASSIA FISTULA AND POINCIANA REGIA.—On our visit to Haputale last year we found *Cassia fistula* blazing with golden blossoms below Koslanda, and again in approaching Belihuloya from Haldummulla. The natives use not only the pods but the bark as medicine, and from their inveterate habit of barking the trees it is difficult to preserve the specimens of *Cassia fistula*, now scattered about Colombo. There are fine specimens in several gardens in Colombo. One grown from seed which we brought from Batticaloa in 1861 was a few months ago simply a mass of gold. This and the Madagascar tree (*Poinciana regia*) form splendid contrasts of rich green, scarlet, orange, and bright yellow. Gamble, in his "Manual of Indian Timbers," writes of this tree, which is widely distributed in India and Ceylon, from sea level to 4000 feet:—"The wood is very durable, but rarely of sufficiently large size for timber. It makes excellent posts, and is good for cart, agricultural implements, and rice-pounders. The pulp of the pods is a strong purgative; the bark is used in dyeing and tanning, and the gum as an astringent. It is a very handsome tree, having long pendulous racemes of bright yellow flowers, and a long, straight, cylindrical, indehiscent pod often 1 and 2 feet long. It is often cultivated for ornament." This "Indian Laburnum," with *Bougainvillea* climbing up its stem, ought to be in every garden in Colombo.—(*Ceylon Observer*.)

— DRIED APRICOTS.—California fruit-growers have discovered that Apricots bleached with sulphur fumes and then dried in the sun are superior to those that are dried in any other manner, or that are canned. They regard this fact of very great importance to the whole State. It enables every fruit-culturist, however limited his means, and however small the product of his orchards, to dry his own fruit for market, and makes him independent of the canning factories. It is also stated that fruit can be prepared in the same manner more cheaply than in any other, that its weight is better preserved, and that it is of superior flavour. Large dealers in dried fruit say that the market for such products of California orchards will always be greater than the supply can possibly be. The United States alone will readily take all the fruit of the kind and quality now being produced by the sun-drying process that California can ever raise. Many thousands of Apricot trees have been planted within a recent date in orchard form in South California.



Sun-dried Apricots are being sold to California dealers at double the price paid for the best raisins.—(*Adelaide Observer*.)

### HOW OUR ROSES BEHAVED.

ONE who has only a small collection of Roses is perhaps hardly entitled to exchange experiences with more extensive and practised observers, still I should like to say that mildew has been extremely prevalent, and that my hopes of a good aftermath were consequently greatly disappointed. Did the terribly scorching sunshine induce mildew? Plants were certainly much weakened by drought; it seemed vain to attempt to supply water, either manure or simple; and except endeavouring to protect the most exposed beds or borders with mowings of short grass, I did absolutely nothing. Like your correspondent, "A. F. M.," I fancied the patients would not bear stimulants, and left them to Nature. With me Prince Camille de Rohan and La Rosière are not only too much alike, but almost undistinguishable. I have several plants of each, and I agree with "A. F. M." that Prince Camille de Rohan has declined. Certainly the Rose is much smaller, and has been smaller for several seasons than it used to be; but with me it preserves its colour, and is always the very darkest of all dark Roses, very free, and very fragrant. Marie Baumann was for the most part a failure, and suffered severely from mildew. Alfred Colomb was grand. Général Jacqueminot good, but thin as usual. Sénateur Vaisse another old Rose, did nobly, his petals as stout, his heart hidden, and his colour as unchangeable as ever. Maréchal Vaillant came, spite of the hot weather, unflinchingly to the front. La France at first was languid and unsatisfactory, now she is charming in form and complexion. A. K. Williams has not held his own; in some hot summers, rather hot weeks, his blooms have remained almost unaltered in their vivid colouring for three days. Mons. E. Y. Teas, not a very large Rose, has been good and bright. Gloire du Bourg-la-Reine and Duke of Teck have both been, I may say, as brilliant as usual. Sir Garnet Wolseley, Mrs. Charles Wood indifferent; Star of Waltham, Thomas Mills, and Marie Rady good; Horace Vernet and Fisher Holmes very good; Baron Bonstetten unusually fine. But we must not prolong the list.

Just a word about the Tea Roses. They have been charming for the last two or three weeks. Innocente Pirola large and fine; Niphetos poor in foliage, but otherwise exquisite in grace and purity of tint; Madame Willermoz sulky and soiled—bad company amongst the beautiful Marie Van Houtte, ever-cheerful Madame Falcot, and other amiable ladies who delighted in the hot weather after the rains came. Royal Standard, H.P., displayed his faultless blooms and fine foliage as unfalteringly as usual—a Rose almost matchless in form and colour like Emilie Hausberg, but freer and finer.—A. M. B.

### APPLES IN EAST WORCESTERSHIRE.

LET me recommend an Apple which is not enough known—"American Mother." I gathered some to-day and they were delicious. I have but one tree, a pyramid. About a fortnight ago I put eight or nine of the best of the fruits in muslin bags as a protection against the wasps. Seeing one of these on the ground I tried the rest and found all ready for gathering. I have a good specimen of Blenheim Pippin gathered yesterday, weight 18 ozs. exactly. The Apple crop here is very partial. In my own orchards it will not pay for gathering. A mile away an orchard is overcrowded. Especially heavy in crop and good in quality is the Orange Pearmain, not a local name, as I was told to-day that it was well known in Cheshire. We rely for market purposes chiefly upon Blenheims, Wyken Pippins, Hanwell Sourings, Keswick Codlins, Annie Elizabeth, Old Nonpareil, and Scarlet Nonpareil. Lord Suffield cankers, as the soil is too heavy. Worcester Pearmain will be largely planted in the future, I fancy. I shall try and encourage Lane's Prince Albert, it has fruited wonderfully with me on young trees bought in and planted late last year.

We are anxiously awaiting the Apple Congress report and the new edition of Dr. Hogg's "Fruit Manual."—J. A. W., *Alderminster*.

### ROYAL CALEDONIAN HORTICULTURAL SOCIETY'S SHOW. SEPTEMBER 17TH AND 18TH.

THE annual autumn Exhibition of this well-supported Society was held in the Waverley Market, Edinburgh, last week, and admirably maintained the credit of the horticulture in the east of Scotland by an extensive display of fruits, flowers, plants, and vegetables of most commendable quality. The chief attraction of the Show was, however, found in the fruit classes, which brought a large number of competitors, particularly with Grapes. The plants were also distinguished by a fresh healthy appearance, and though they were mostly of medium size the Lilliums, Vallotas, and highly coloured Crotons furnished much brightness to the display, the tables of plants arranged for effect being especially handsome.

The cut flowers, including Roses, Gladioluses, and Dahlias, were remarkably fine, and formed an exhibition alone of considerable importance. The Market Hall, though of large dimensions, was well filled, and had a very beautiful appearance when viewed from the gallery which runs round the building. The attendance of visitors was also large, especially on the evening of the first day, when the hall was densely crowded for some hours.

#### FRUIT.

**Collections.**—The principal class in this section was that for a collection of twelve sorts, the prizes being £6, £4, and £2. There were three competitors, and Mr. McIndoe, Hutton Hall Gardens, Guisborough, York,

following up his success at Dundee, was again awarded premier honours. His dishes comprised the following—Grapes: Black Hamburgh fine in bunch and berry, Madresfield Court well coloured, Trebbiano very large; even and handsome Smooth Cayenne and Queen Pines, Scarlet Premier Melon large and handsome, Princess of Wales Peaches, Souvenir du Congrès Pears, Magnum Bonum Plums, Brown Turkey Figs, and Green Gages, all well ripened. Mr. Johnstone, The Gardens, Glamis Castle, Forfar, was only a few points behind, having large bunches of Muscat of Alexandria beautifully coloured, Alicante bearing a dense bloom, Raisin de Calabre very large, a fine bunch of Bananas, an admirable Smooth Cayenne Pine, good Walburton Peaches, and well-ripened Best of All and Lord Strathmore Melons. The third place was accorded to Mr. Malcom McIntyre, gardener to Charles Tennant, Esq., M.P., The Glen, Innerleithing, who had Prince Albert Pine very good, fair Alicante, Black Hamburgh, and Trebbiano Grapes, and two beautiful dishes of Galande and Late Admirable Peaches. With a collection of eight sorts Mr. J. McConochie, gardener to P. B. Smollett, Esq., Cameron House, Alexandria, took the lead, showing small but highly coloured Muscat of Alexandria, good Stirling Castle Peaches, and a fine Best of All Melon. Mr. McIndoe followed, having large Trebbiano Grapes; and Mr. Peter Fairgrieve, gardener to the Duchess of Athol, Dunkeld, was third, his best dishes being Pitmaston Orange Nectarines and Orange Apricots, both large and finely ripened. A class was provided for a collection of ten sorts of fruits grown out of doors, and three admirable collections were staged. The premier honours were adjudged to Mr. Fairgrieve for remarkably fine examples of the following: Jefferson Plums, Worcester Pearmain Apples, Early York and Hales' Early Peaches, Shipley Apricots, Morello Cherries, Elruge Nectarines, Jargonelle and Louise Bonne of Jersey Pears. These were all uncommonly handsome and clean for outdoor produce. Mr. L. Dow, gardener to Sir David Baird, Bart., Newbyth, was placed second, his Royal George Peaches and Breda Apricots being notable for their size and colour. Mr. J. Brunton, gardener to Sir Alex. Kinloch, Bart., Gilmerton, took the third place with good samples.

**Grapes.**—An extensive display of Grapes was provided, the entries being numerous in the majority of the smaller classes. For twelve bunches, six black and six white varieties, Mr. Alex. Kirk, gardener to J. T. Paton, Esq., Norwood, Alloa, was placed first with Muscat of Alexandria with very fine berries and excellent in colour; Lady Downe's, very handsome in bunch and colour; Duke of Buccleuch, large berries and grandly coloured; Black Hamburgh, good bunch and colour; Mrs. Pearson, a fine even bunch, but a trifle green; Alicante, good in bunch and colour; Raisin de Calabre, large but greenish; Gros Colman, and Alnwick Seedling finely coloured. Mr. McIndoe was second, several of his bunches showing too evident signs of the distance they had travelled. With eight bunches Mr. Wm. Jenkins, gardener to Brodie Cochrane, Esq., Aldin Grange, Durham, was the leading exhibitor, showing Foster's Seedling, Black Hamburgh, and Muscat of Alexandria, small but well coloured; Alicante, very handsome in size and colour; Lady Downe's, and Gros Colman of moderate size. Mr. Lees, gardener to the Marquis of Downshire, Hillsbro' Castle, County Down, secured the third prize, and showed a remarkably fine bunch of Cooper's Black, the others being not fully ripened. Some creditable examples were staged in the class for four bunches. Mr. G. Mackinnon, gardener to Viscount Melville, Melville Castle, Lasswade, being the leading prizetaker with Trebbiano, of great size but not fully ripe; Gros Colman, handsome in all respects; Black Hamburgh, of good colour; and Alicantes of fair size but not quite ripe. The second place was secured by Mr. Lees, who again had Cooper's Black very fine, Gros Colman and Muscat of Alexandria being of similar merit. Mr. McConochie was third with smaller and less well-ripened samples.

In the special variety classes there was a number of exhibitors, and their produce, as a rule, was commendable for general finish. There were two series of classes, one for a pair of bunches and the other for single bunches. Muscat of Alexandria was well represented by five exhibitors with the pair bunches, and three with single bunches. In the first, Mr. G. Ramsay, gardener to the Hon. Mrs. Mercer Henderson, Fordell, took the lead with handsome even bunches, the berries clean, well developed, and highly coloured. Mr. F. Hacker, gardener to J. More Nisbett, Esq., Drem, was second with smaller but almost equally well coloured samples. Mr. H. Crosbie, Drymen, Stirling, being third with well-ripened bunches. The best single bunch was staged by Mr. Jeffrey, a beautiful compact bunch, the remaining prizes being secured by Mr. H. Spence, gardener to James Lindsay, Esq., Drydenbank, and Mr. G. McClure, gardener to J. Milne, Esq., Trinity Grove.

The best pair of Black Hamburgs were shown by Mr. A. Smith, gardener to J. H. G. Clark, Esq., Speddock, Dumfries, large bunches and good berries, but only moderately good in colour. Messrs. G. Mackinnon and J. Forbes, gardener to A. D. Patterson, Esq., Dean Path, being second and third respectively with fairly good but not remarkable examples. Mr. W. Murray, gardener to T. L. Learmouth, Esq., Parkhall, Dundee, and Mr. J. Lamont, gardener to Lord Balfour of Burleigh Kennet House, were first and second with good bunches of fair colour. Alicantes were well shown by Mr. W. Collins, gardener to John Ballantyne, Esq., Stoneyhill, and Mr. W. Murray, both of whom had finely coloured bunches, differing chiefly in size.

In the single bunch classes there was also a number of entries, and the leading exhibitors had Grapes of considerable merit. Mr. J. Brown, Abercainry Gardens, Crieff, had the best Alnwick Seedling, even in form; compact, and excellent in colour, but not large. Mr. Forbes, who was second, had an even bunch, bearing a fine bloom. Mr. McIntyre took the premier position with a large bunch fairly coloured, but not quite so well coloured as might be desired. Mr. A. Smith followed with small bunches. Lady Downe's was grandly shown by Mr. G. McLeod, gardener to G. Young, Esq., Westbourn, a most handsome bunch, of moderate size, and finely coloured; Mr. John Forbes being second with a slightly smaller bunch, but similarly well finished. In the any black variety class Mr. Lees was adjudged first honours for Cooper's Black, extremely handsome in size and form, and bearing a dense bloom. Mr. Alexander Chalmers, gardener to Captain Maxwell, Terregles, Dumfries, was second with Abercainry Seedling, large and well developed, but not fully ripe. In the any white variety class Mr. G. Ramsay led with an unnamed variety, said to be White Tokay, clear and beautifully coloured; Mr. Chalmers being second with Trebbiano, large, but only fairly ripened. For one bunch of the best flavoured black variety Mr. F. Hacker was first with Madresfield Court, and Mr. McIndoe was second with th



same variety; while in the corresponding white variety class Mr. McIndoe took the lead with Muscat of Alexandria, followed by Mr. King, Dalzell House Gardens, with the same variety. For a bunch with the finest bloom Mr. Jeffrey was first with Alicante, very handsome; and Mr. Lees second with Cooper's Black, similarly good.

Pines were not very numerous, Mr. A. Young, gardener to Earl Bredalbane, Taymouth Castle, having the best Smooth Cayenne, and Mr. McIntyre the best Queen, Mr. McIntyre leading with two Pines, fine examples of Prince Albert and Queen. Melons were fairly good, but not of remarkable merit.

Apples were extremely well shown both as regards numbers and quality, the competition in some of the classes devoted to special varieties being extraordinary. Lord Suffield was particularly strongly shown, no less than thirty-four competitors entering with six fruits each, and all were so nearly equal in merit that the Judges had some difficulty in selecting the winners. Mr. Brunton and Mr. L. Dow were, however, finally awarded the honours in that order. Stirling Castle came next in point of numbers, eighteen dishes being staged, Messrs. Murray and Sharp taking the prizes. There were twelve competitors in the Warner's King class, Mr. J. Duncan Amisfield, Haddington, leading closely, followed by Mr. Melville. Ribston Pippin was represented by sixteen exhibitors, Mr. McIndoe winning the first place for large handsome fruits, Mr. Hunter, Lambton Castle Gardens, taking the second honours. Peasgood's Nonesuch was not largely shown, but Ecklinville, Hawthornden, Keswick Codlin, and King of Pippins were, however, contributed by a great number of exhibitors.

Pears were not very abundant, but Plums were capitally shown by eighteen competitors in each class. With twelve yellow Plums Mr. D. Melville, gardener to G. G. Dalrymple, Esq., Elliston, was first with Coe's Golden Drop, large and handsome, Mr. Galloway being second with Jefferson's; while in the red variety class Mr. McKenzie, gardener to J. Stewart, Esq., Balloch, Perthshire, led with Goliath, followed by Mr. McIndoe with Belgian Purple. Red and White Currants were grandly shown by Mr. Brown of Abercairny, who has a great local fame for these fruits. Gooseberries, Figs, and Apricots also added to the excellence and beauty of the Show.

Messrs. C. Daly & Son, Coleraine, exhibited a collection of fifty sorts of Apples, to which a special prize and certificate was awarded. Messrs. Stuart & Mein, Kelso, also showed a collection of seventy-five sorts gathered from young trees.

A very large quantity of vegetables was staged, the market garden collection prize going to Mr. D. Logan, Coldstream, second to Mr. Milne, Sunnbank, Edinburgh. The first prize for gardener's collection of twelve kinds was secured by Mr. Brown, Abercairny, who had a beautiful collection; Mr. Potter, Seacliffe, North Berwick, being a close second. Mr. N. Glass, Larbert, showed extra fine Leeks and Onions, and the other kinds of vegetables were well represented.

Plants were rather sparsely represented, the competition being very limited. Mr. Patterson, Millbank, had first prize for six flowering plants, for three handsome Heaths, and for a graceful Palm. Mr. Grossart, gardener to Mr. Buchanan, Cavann Lane, was the only exhibitor for table of plants, and was awarded first prize; the first for four Orchids and for one Orchid fell to the same exhibitor, as also for four Palms. Mr. S. Graham, Kilarock Lodge, took first for six exotic Ferns, six Ferns for table, and six Lycopods. Mr. Scott, Carberry Tower, Musselburgh, had first for four foliage plants. Among the classes open to nurserymen Messrs. Ireland & Thomson were, as at former shows, easily first; Messrs. R. B. Laird & Sons being second. The same exhibitors reversed places for four Palms. Messrs. Ireland and Thomson were first for twelve Coniferae and also for twelve table Conifers; Messrs. R. B. Laird & Son, second. Messrs. Laird and Sinclair, Dundee, had first for twelve table plants, Messrs. Ireland & Thomson being second.

Cut flowers formed a very good display. Mr. Campbell, Gourrock, repeated his victory for thirty Gladioli, with much the same kinds as noted in previous reports; Mr. J. Service, Dumfries, second. For twelve spikes, Mr. Gray, Newfield, Ayrshire, as at Dundee, showed the best examples in the Show. For six Gladioli, Mr. Smith, Prestwich, was first. For eleven Hollyhock spikes, Mr. M. Campbell, High Blantyre, showed fine examples of Invincible, G. B. Elliot, Hercules, Menmon, Mrs. Johnston's Champion, D. Forbes, Lady Middleton, Albion, Purple Pine, and Cygnet; Messrs. Lamont & Son, second. Mr. D. McFarlane, Kempmeadows, Peebles, was first, Mr. Dingwall, Ardock, being a good second. For twelve Hollyhock blooms Mr. R. Kerr was first; Mr. Cadzow, Lanark, being first for six blooms. Messrs. Cocker & Sons, Aberdeen, were first for Show and Fancy Dahlias; Messrs. Lamont & Sons for thirty-six singles. Messrs. Dickson & Son, Belfast, showed well for thirty-six Roses, and were awarded first; Mr. Smith, Stranraer, being first for eighteen Roses; and Mr. A. H. Gray first for twenty-four in the gardeners' class. Messrs. Ireland & Thomson were first for collections of cut stove and greenhouse plants; Messrs. Laird & Son being second.

Among the miscellaneous produce staged for exhibition only Messrs. Lamont & Son, Musselburgh, put up a grand lot of forty-eight single Dahlias; Messrs. R. B. Laird & Son a new Adiantum, Victoria; Messrs. Laing & Co., Forest Hill, some of the famed Begonias; Messrs. Todd & Co., Edinburgh, showed examples of bouquets and wreaths of great beauty; Mr. Lindsay, Royal Botanic Garden, had a table of peculiarities of plant life, a grand example of the Latticeleaf Plant attracting much attention, and a specimen of the curious Aciphylla squarrosa, which is quite hardy in Edinburgh; Messrs. Cunningham & Fraser, Comely Bank, and Messrs. Methven and Sons, Leith Walk Nurseries, had excellent tables of decorative and other plants of much interest.

### WASPS AND RED SPIDER.

HAVING had my attention recently attracted by the continual visits of wasps to a second early Peach house, I have wondered what they were in pursuit of, as the fruits have been cleared for some time past. I have now come to the conclusion that they are in search of red spider. The trees in question have not been syringed since the fruit ripened, and yet they are as healthy as possible, which is not often the case under these conditions, as when left to themselves red spider is sure to appear. Although these trees have been so far neglected for several weeks, red

spider is very scarce, and this I attribute to the visits of wasps. They crawl about on the upper and under sides of the leaves, apparently in search of these insects, or why should they continue to visit this house in such numbers when there are other houses adjoining with ripe fruit yet ungathered? I would like to know the opinion of some of your readers on this subject. No doubt there will be some that will pooh-pooh such an idea; but why should not wasps have a liking for the red spider as well as for flies, for they will demolish these ravenously when within their reach and other food is short.—S.

### INDOOR WINTER-FLOWERING PLANTS.

I CONSIDER September and October very important months in the management of these. Where plants are weakly and unsatisfactory there is still time to improve them before winter, and where they are good they may always be made better by seasonable treatment. In winter, when water at the roots is not required in such quantities as in summer, it is of the utmost importance that the drainage be perfect. Unless it is this, the soil will be sure to become water-logged before the new year, and after that there can be no hope of success. There is no plant to which this does not apply, and before another week is over every plant growing in a pot for winter use should be carefully turned out, the drainage examined, and all deficiencies rectified. Worms must be excluded, for when they are present the drainage will soon be inoperative. No plants will ever be healthy when the worms are working in the soil about the roots, and banish them by all means. In looking over the drainage catch and throw out any seen there, and if they are inside the balls and cannot be seen, give soot water frequently until they are destroyed. Soot will nourish the plant as well as destroy the worms. Perfect drainage and no worms are two important conditions to the well-being of the roots of our winter-flowering plants, and should on no account be overlooked. Remedies can of course be applied in winter, but then the plants may be checked, both by the cause and cure, and at this season they will improve far more quickly than they would do then; indeed it is wholly to have them in a proper condition before the short days and long nights that I insist on their having attention now.

Next to the roots being right the foliage must be clean. Absolute failure will follow should the winter be commenced with the foliage impaired by the attacks of insects. Cleanliness is an advantage of the greatest importance. Nothing else will do, and the sponge and syringe must be kept at work until all has been made clean. With good roots and clean foliage what splendid prospects plant-growers have before them in winter.

The ripening of the wood requires attention, for hardwooded plants such as Heaths and Azaleas are not the only ones that require to be ripened, Cinerarias, Primulas, and many others stand in need of it too. In hot bright summers, like the one now past, many plants must be shaded from the sun; but if this shading remains on until the winter, it would then be found that the soft growths produced in consequence were totally unfit to bear more darkness than light, damping off would become a nuisance, the blooms would be few and of no substance or colour, as it is only from matured growths we can expect these. For this reason it is important that sun and light be now admitted to all winter-blooming plants, and all shading should be cleared off at once. Immediately this is done and for a little time the plants may flag on sunny days, but unless the sun is exceptionally bright no harm will be done, and the foliage and stems will soon assume a hardy appearance, and this is the proper colour to begin the winter with. Air, too, does its part in producing this desirable condition, and at this season keeping the plants in a close airless atmosphere should not be practised. Cold frames fully exposed to the sun are now the places for Primulas and Cinerarias, and they will succeed there until the middle or end of October, when they should have a warmer and drier place to bring out a profusion of bloom. Poinsettias are still in the cool, but they will have warmer quarters by the end of September, and the Bouvardias will accompany them. Deutzias and Spiraeas and all plants intended for blooming early cannot be too well exposed. Chrysanthemums should be watered freely with stimulants, and the stems and coming flower buds must be free and open to all the beneficial influences of the September and October weather. Cultivators may rest assured that extra attention now will be richly rewarded later on. Our Camellias and Azaleas are now as much exposed as they can be during the day, with protection at night to prevent their being injured by high winds and excessive rains, and it is very gratifying to see how the flower buds are developing.—M. M.

### IXORAS.

FLOWERING plants are generally not so abundant in stoves as in greenhouses, and with the exception of a few handsome climbers, such as Allamandas, Dipadenias, Clerodendrons, and Jasmines, there is too often a comparative scarcity of blooms in the warmer structure when the other is as gay as could be desired. For this reason Ixoras are especially valuable, as they yield a profusion of richly coloured flowers which can be most appreciated in contrast with the wealth of foliage furnished by Palms, Ferns, Aralias, and other similar occupants of the stove. They also possess some very fine and distinct shades of orange and red, the compact heads in which the flowers are borne having a noble appearance. Particularly



striking is the gigantic *Ixora macrothyrsa*, which frequently has trusses exceeding 1 foot in diameter, of the deepest red to the base of the flower

tube. Then we have a host of garden forms, either hybrids between known species or accidental seedlings, all more or less beautiful and worthy



Fig. 48.—IXORA MORSEI.

of culture. Amongst the best of these must be ranked the fine new variety represented in fig. 48, *Ixora Morsei*, which Mr. B. S. Williams

will shortly be sending out. It is remarkable alike for its floriferousness, the large size of the trusses, the rich orange colour of the flowers, and the



compact habit of the plants, and with such recommendations it may be confidently expected to become a favourite.

### POTS AND SOFTSOAP FOR PINES.

IN reply to "Thinker's" observations (see page 264) in reference to two points in an article of mine on "Pine Apple Culture" at page 207, I desire to say that I prefer 12-inch to 10-inch pots for fruiting plants—assuming that the latter are vigorous and well established in 8-inch pots—inasmuch as they afford more, and, in my opinion, none too much, scope for that amount of healthy root-action which is necessary to the proper development of large sturdy plants. These by the middle of October will have filled their pots with roots, and in due time produce and ripen larger fruit than would have resulted from the same plants had they been in 10-inch pots, and in every other respect treated alike. But unless the 12-inch pots are filled with roots by the time the plants have completed their growth—say the middle of October—they had much better been placed in the 10-inch pots when being potted.

As regards "Thinker's" second stumbling block, which fortunately for himself was not a very hard one—namely, 8 ozs. of softsoap to a gallon of water—I may be permitted to say in reference to this figure that neither the writer nor the printer has made any mistake, and that instead of 8 ozs. of softsoap to a gallon of water nearly making a jelly it would take a very keen observer to detect any great difference between the thickness of the 4 ozs. and 8 ozs. gallon fluids placed side by side in different vessels. My experience warrants me in pronouncing in favour of the eight-ounce dose being used as an insecticide on Pines and plants of similar texture of leaves. The 8 ozs. fluid being, as a matter of course, thicker than the same quantity having 4 ozs. of softsoap dissolved in it, it must necessarily adhere more to the leaves of the plants than the latter would, and therefore, in connection with the petroleum, prove more destructive and distasteful to insects. Why does "Thinker" think half the quantity of softsoap ample and why 8 ozs. too much?—H. W. WARD.

### CINERARIAS PLANTED OUT.

THIS method of growing Cinerarias has been tried at Moncreiffe, Perth, and answers so well that a few lines in the Journal might not be out of place. Where large numbers of this useful plant are needed much labour can be saved by adopting this method of culture. The results, too, are better than that obtained from those grown in pots in the usual way. Instead of potting the seedlings they are pricked off into boxes and allowed to remain there till they are of good size, when they are taken and planted in a cool shady border in moderately good soil. Should the weather prove dry they will require to be attended to with water; but if a suitable position is chosen very little of this will be needed. Keeping them free from weeds is all the attention they require during the summer. Early in September the most forward plants may be lifted and potted, and the rest left till there is a danger of frost setting in, when all should be carefully lifted and put in snitable sized pots. This year some were grown in pots and others planted out, and those that were planted out are certainly much superior to those grown in pots. Similar results were also obtained last year.—CALEDONIAN.

### WIRKSWORTH HORTICULTURAL SOCIETY.

THE fourth annual Exhibition of this vigorous and rising Society was held on Thursday last in the well-kept grounds of C. Wright, Esq. (the President of the Society), Yokescliffe, Wirksworth, from which, on a clear day, is obtained a view of the loveliest part of the Peak of Derbyshire, probably unparalleled as a typical piece of verdant English scenery, extending for nearly twenty miles, but unfortunately the fog following a heavy rain the previous evening did not thoroughly clear away, and the distant hills were only dimly perceptible at intervals, although sufficiently to captivate the attention of visitors from the well-filled tents of the Exhibition. The quaint and substantial little town of Wirksworth, which has a venerable air about it not possessed by its modern rival and neighbour, Matlock Bath. The jerry-builder has not yet ventured to pile up his cardboard villas beside the massive stone and oak erections of our forefathers, and of which is chiefly constituted this quondam mining metropolis of Derbyshire, where, in the Moot Hall, for ages past have been held the mineral assizes for the district. Wirksworth is reached by rail direct, as well as by the beautiful drive from Matlock Bath station, and a large number of visitors from the locality and from Derby and Nottingham attended the Show, the town of Wirksworth being present almost in a body, the day being devoted after twelve, when the shops are closed, entirely to horticulture—a holiday. The Show was a large one. Upwards of 1000 entries were lodged with the Secretaries, most of which were represented in the tents.

In the open class for twelve stove and greenhouse plants, five collections, comprising some good specimens, were staged, the first prize falling to R. Wildgoose, Esq., Wirksworth; Mr. Bolas, gardener to H. C. Pole Gell, Esq., Hopton Hall, being second, C. Wright, Esq., third, and Mr. Spencer, gardener to A. Arkwright, Esq., fourth. This was a well-contested class, but the *tout ensemble* was marred by a deficiency of flowering plants. For a collection of six varieties Mr. Wildgoose was again first, T. Clay, Esq., second, and Mr. Bolas third. Several good lots of Coleus were staged, Mr. Bolas having well-grown and fairly coloured specimens, was placed first, H. W. Walthall, Esq., second, and J. B. Wood, Esq., third. Ferns, Begonias, Fuchsias, and Pelargoniums were also shown in good force in this class, Messrs. Walthall, Clay, Spencer, and Bolas being the chief prizetakers. Cut Roses, for which there were numerous classes, were fairly well shown, C. Prescott,

Esq., leading with a good stand of twelve, the Rev. T. O. Grady, second. Cut flowers, stove and greenhouse, injudiciously mixed with hardy herbaceous, were attractive, and but for the unhappy mixture would have been a satisfactory class. Asters and Marigolds were small; Dahlias, double, Pompon, and single, were well represented, Mr. C. Carlisle of Old Basford, Nottingham, having a pretty stand of thirty-two Pompons, gems in shape and colour, the largest being little more than an inch in diameter—Isabel, Jupiter, Lady Blanche, Rayiere-Cbauviere, Little Arthur, Nemesis, and Little Beauty were most perfect and striking blooms. For a centrepiece stand of cut flowers Mr. Bolas set up a very tastefully arranged design, and obtained the special prize offered by Mr. Marsden. With this exception the designs were not of great merit. Bouquets and buttonholes were also not of a high standard in taste.

Fruits were largely shown, Apples being a feature, many of the specimens consisting of fine local varieties suitable to the district, and good Grapes, four varieties, two bunches of black and two of white, shown by Mr. Bolas, were fine examples of good cultivation, the bunches being all handsome and well finished, consisting of Black Hamburgh, Alicante, Golden Hamburgh, and Golden Champion. In the cottagers' department were some good sound and not over-ripe Gooseberries, but in the vegetable classes the zeal and skill of the local growers was well set forth, and better Potatoes in a cottagers' class have hardly been seen this season. In the amateurs' department some good Hollyhocks, Gladioli, Zinnias, single Dahlias, and Marigolds were shown by Mr. T. Atkinson; vegetables by Mr. Abell and Mr. Allen, Preston Evans, and others; but the vegetable competition for the special prizes offered by Messrs. James Carter & Co., High Holborn, London, and Messrs. Sutton and Sons, seed merchants, Reading, were well contested. In Messrs. Carter's competition, Mr. Bolas had the first prize for a very fine collection, Mr. Stevenson, gardener to H. W. Walthall, Esq., running him very close for second place, and Mr. Yates, gardener to R. Wildgoose, Esq., third. For Messrs. Sutton's prizes Mr. Stevenson was first, Mr. Bolas second, and Mr. Spencer third. For the best three varieties of cooking Potatoes, cooked and uncooked, the first prize was awarded to Mr. Spencer for Schoolmaster, Covent Garden Perfection, and Pride of America. For a collection of Potatoes, eight varieties, Mr. Stevenson was first with Adirondach, Schoolmaster, Queen of the Valley, International, Magnum Bonum, Ashleaf, Sharpe's Victor, and Beauty of Hebron; Mr. Bolas second, and Mr. Spencer third. For the special prize offered by Messrs. Daniels Bros., Norwich, for six tubers of their Purple and Gold Potato, Mr. Sheppard was the winner. The following Potatoes were also striking and well shown—viz., Beauty of Hanworth (blood-red round), Webb's Surprise (white round), Pearson's Sanday's Seedling (Lapstone style), White Elephant (enormous), Life Guardsman (purplish mottled kidney), and President Garfield (long white kidney). Mr. Laxton of Bedford showed some marvellous specimens of his Girtford Giant Runner Bean, not for competition. The pluck and perseverance of the Committee appear to have been amply rewarded by fine weather, a large attendance, and a first-rate show, which can hardly fail when repeated to attract both exhibitors and visitors in increasing numbers.

### LILIPUTIAN POTATO.

WHILST thanking you for the interesting paragraph in the last issue of the *Journal of Horticulture* upon our seedling Potato, we would ask you to correct a slight inaccuracy. We hardly hope to "fix" this novelty in its present character—that is, the miniature size of the tubers, because from our observation of previous seedlings the variety in question is likely to develop into large tubers another year. We do hope, however, to find the extraordinary produce maintained, and we shall further be greatly surprised if any or all keep their present distinctive form.

In our opinion, not the least remarkable feature is the number of distinct haulms that spring from the surface of the ground, there being upwards of one dozen. These may be more or less connected with a centre base beneath the soil, and we shall have an opportunity of investigating this when we break up the plant, which we propose to do after the International Potato Show at the Crystal Palace.—JAMES CARTER AND Co.

### SHOW AND FANCY DAHLIAS AT THE NATIONAL DAHLIA SHOWS.

IT is very interesting and satisfactory to find these beautiful autumn flowers coming once again into favour, as they are now evidently doing; for, besides their general usefulness and easy culture, what grand florists' flowers are these double Dahlias! what perfection of form, what singular purity and often brilliancy of colour! and then, again, what an endless variety of tints and diversity of markings and shadings do they not display! Well may certain colours be designated as belonging to the "Dahlia shades," for in the Dahlia alone are many of these clear delicate tints to be found.

The following lists are intended to show, not only how many times each of the different varieties named in them were exhibited in competition at the recent Show of the National Dahlia Society, and at this Society's first exhibition, but also, and more particularly, at the two exhibitions taken together; for in analyses like these the greater the number of flowers dealt with the more likely of course are the different sorts to fall into their true relative positions. It may be some few years before any large number of flowers are properly placed; nevertheless, I am pleased to find how satisfactory this method of analysis has proved so far as it has yet gone. Taking, for instance, the two lists given last year, and comparing these with the same lists this year, it will be seen that only six of the Show varieties and two of the Fancies which were tabulated in 1883 are absent from the tables given this year. And, no doubt but for the great difference in the two seasons the figures in the first two columns of this year's lists would have come out much more uniformly even than they do. The following varieties have decidedly



improved their positions—namely, of the Shows:—Burgundy, James Service, Mr. Harris, Imperial (new), and H. Turner; and of the Fancies:—Flora Wyatt, Rev. J. B. M. Camm, Hercules, J. Lamont, E. Peck, and Rebecca (new). On the other hand, owing no doubt in a great measure to the unfavourable conditions of the past season, it will be noticed that James Vick, A. Cramond, and G. Smith among the Show Dahlias, and Mrs. A. Hall and J. McIntosh amongst the Fancies have considerably receded from the places which they last year occupied.

### SHOW DAHLIAS.

No. of times shown.			Name.	When sent out.	Raiser's name.	Colour.
1883	1884	Tot.				
19	24	43	Henry Walton.....	1873	Keynes .....	Yellow and purple.
21	21	42	Hon. Mrs. P. Wyndham	1881	Keynes & Co.	Yellow and scarlet.
18	21	39	James Cocker .....	1871	Keynes .....	Purple.
15	18	33	William Rawlings .....	1881	Rawlings ..	Purple.
16	15	31	Goldfinder.....	1881	Fellowes ..	Yellow and red.
15	16	31	Joseph Ashby .....	1879	Turner .....	Orange.
18	12	30	James Vick .....	1881	Keynes & Co.	Maroon.
13	17	30	Shirley Hibberd .....	1881	Rawlings ..	Crimson.
14	15	29	Ethel Britton .....	1880	Keynes & Co.	White and purple.
16	13	29	Prince Bismarck .....	1879	Fellowes ..	Puce.
12	14	26	Mrs. Harris .....	1873	Harris.....	White and lilac.
6	19	25	Burgundy .....	1877	Turner .....	Puce and purple.
10	15	25	Royal Queen .....	—	Eckford .....	Cream and crimson.
9	14	23	Prince of Denmark.....	1881	Fellowes ..	Maroon and crimson.
10	12	22	Flag of Truce .....	1868	Wheeler.....	White and lilac.
11	11	22	John N. Keynes .....	1871	Keynes .....	Yellow.
14	7	21	Alexander Cramond ..	1872	Keynes .....	Maroon.
9	12	21	Mrs. Dodds .....	1881	Keynes & Co.	White and lilac.
12	9	21	Vice-President.....	—	Keynes .....	Orange.
12	8	20	John W. Lord .....	1877	Keynes .....	Buff.
7	12	19	Clara .....	1879	Rawlings ..	Peach.
6	13	19	James Service .....	—	Keynes .....	Crimson.
10	8	18	Julia Wyatt .....	—	Keynes .....	White.
7	11	18	Rev. J. Goodday .....	1879	Rawlings ..	Maroon and purple.
10	7	17	John Bennett .....	1875	Rawlings ..	Yellow and scarlet.
6	11	17	John Wyatt .....	1877	Keynes .....	Scarlet.
5	12	17	Mr. Harris.....	1881	Rawlings ..	Scarlet.
6	10	16	Herbert Turner .....	—	Turner .....	White.
7	9	16	Ovid .....	1874	Turner .....	Purple.
7	9	16	George Rawlings.....	1882	Rawlings ..	Maroon.
7	8	15	Mrs. S. Hibberd .....	1877	Rawlings ..	Cream and pink.
6	8	14	Lord Chelmsford.....	1880	Keynes & Co.	Maroon.
2	11	13	Imperial.....	1883	Keynes & Co.	Purple.
5	8	13	Modesty.....	1881	Fellowes ..	Blush.
5	7	13	Thomas Goodwin .....	—	Goodwin ..	Maroon.
8	5	13	Walter H. Williams ..	1881	Keynes & Co.	Scarlet.
5	7	12	Constancy .....	1878	Harris.....	Yellow and lake.
5	7	12	George Dickson .....	1882	Keynes & Co.	Chestnut.
8	4	12	Pioneer .....	1882	Fellowes ..	Black.
6	5	11	Criterion .....	—	Edwards ..	Rose.
8	3	11	Emily Edwards .....	1879	Keynes .....	White.
9	2	11	George Smith .....	1879	Rawlings ..	Magenta.
5	6	11	Rosy Morn .....	1879	Keynes .....	Rose.
7	3	10	Annie Neville .....	—	Keynes .....	White.
7	3	10	Duke of Connaught ..	1879	Keynes .....	Crimson.
5	5	10	H. W. Turner .....	1881	Keynes & Co.	Yellow and crimson.

### FANCY DAHLIAS.

16	23	39	Gaiety .....	1879	Keynes .....	Yellow, red, and white
15	16	31	Mrs. Saunders .....	—	Turner .....	Yellow and white.
14	14	28	George Barnes .....	1878	Keynes .....	Lilac and crimson.
11	13	24	Fanny Sturt .....	—	Pope .....	Red and white.
12	12	24	John Forbes.....	1882	Keynes & Co.	Fawn and maroon.
6	17	23	Flora Wyatt.....	—	Keynes .....	Orange and red.
9	14	23	Rev. J. B. M. Camm ..	—	Keynes .....	Yellow and red.
11	10	21	Henry Glasscock.....	1875	Keynes .....	Buff and crimson.
7	13	20	Hercules .....	1877	Keynes .....	Yellow and crimson.
2	17	19	John Lamont .....	—	Keynes .....	Maroon and black.
10	9	19	Miss Browning.....	1880	Keynes & Co.	Yellow and white.
11	8	19	Oracle.....	1877	Fellowes.....	Yellow and crimson.
7	11	18	Egyptian Prince .....	—	Keynes .....	Orange and red.
8	10	18	Professor Fawcett .....	1881	Keynes & Co.	Lilac and brown.
7	10	17	Chorister .....	1881	Keynes & Co.	Fawn and crimson.
5	12	17	Hugh Austin .....	1881	Keynes & Co.	Orange and red.
5	11	16	Florence Stark.....	1879	Keynes .....	White and purple.
5	11	16	Miss L. Large .....	1876	Keynes .....	Yellow and crimson.
10	4	14	Mrs. N. Halls .....	1881	Rawlings ..	Scarlet and white.
2	10	12	Edward Peck .....	1881	Keynes & Co.	Lilac and maroon.
10	2	12	Jessie McIntosh .....	1880	Keynes & Co.	Red and white.
2	10	12	Rebecca .....	1883	Keynes & Co.	Lilac and crimson.

At the two exhibitions I find that altogether 2140 Dahlias were exhibited—that is to say, 1446 Shows and 697 Fancies. That there is no lack of good Dahlias is evidenced by the fact that no less than 180 different Show and 60 different Fancy varieties were staged at the Crystal Palace this year.

My best thanks are due to two prominent exhibitors in the trade classes—Mr. W. H. Williams (of the firm of Keynes, Williams & Co.)

and Mr. J. Burrell (of the firm of J. Burrell & Co.) for their kind assistance in helping me to take down the names of all the Dahlias throughout the Show. To the former I am also indebted for additional particulars respecting the raisers' names and the dates of introduction. Every one of those varieties against which no date appears in the above tables were, I am informed, sent out prior to 1877. I shall feel much obliged to anyone who will supply these missing dates.

In conclusion, I wish to take this opportunity of stating that in the course of next month I intend submitting to your readers a somewhat similar analysis, upon which I have been long engaged, of the Roses most frequently exhibited in recent years.—E. M., *Croydon*.

### BOUVARDIAS.

WHAT a mistake it is to grow Bouvardias in heat when much better results may be obtained by growing them in cool frames. Yet we often see them treated as stove plants and subjected to a high temperature, which only produces rank soft growths, which flower very indifferently. To obtain really fine plants they must be grown in a cold frame, as under this treatment firm short-jointed wood is made, which in turn produces flowers of first-rate quality. The plants grown in this way at Moncreiffe have afforded abundance of flowers during the past two months, and will do so for some time yet. Few flowers are more suitable for cutting to make bouquets or fill glasses and vases, and seeing their flowering may be extended over three or four months, the Bouvardia is a plant that is really well worth a little trouble to secure it in good condition. Some of the best varieties for general purposes are Alfred Neuner, Hogarth, Bridal Bouquet, Dazzler, Vreelandi, and Bride's Blush.—CALEDONIAN.

### HOT WEATHER AND FRUIT TREES.

WHILE I may have misinterpreted "A Thinker," and attributed to him opinions which he does not fully entertain, I am not prepared to admit the same in regard to Mr. Abbey who I am glad to see "A Thinker" does not support unconditionally; in fact his views and my own are not greatly divergent.

Mr. Abbey's article on page 191 is one of those skilful literary productions from which sentences may be culled to refute anything. I did not credit your correspondent with the sentence he quotes from my letter, but if his deductions are not what I stated—namely, "That the scarcity of fruit of the past few years has been more the result of immature wood in autumn than of frost in spring," the following, which appears the keynote of his article, is meaningless:—"The trees may form fruit buds, give promise of abundant crops by profusion of bloom, yet the fruit fails to set, or, if setting, drops off before taking the first swelling. This is a consequence of last year's imperfect development of the buds and immaturity of the wood." That is a precise statement, and it is emphasised; for he goes on to say "the future is not more hopeful unless we have favourable weather for the ripening of the wood and development of the blossom buds." That is Mr. Abbey's case—the kernel of his whole communication when divested of the surrounding husk; and I say it is not sustainable. I maintain firmly that the fruitless seasons of the past have not been the "consequence" of immaturity of the wood in autumn, but that frosts in spring have been far more destructive.

Fruit trees have been laden with the finest of blossom year after year, yet no fruit has followed; but stunted trees in orchards and healthy well-fed trees in gardens have been alike barren because of severely inclement weather during the blossoming period and of nothing else.

Then as if clinching his argument on the paramount importance of ripened or stunted wood, we are asked to "compare the growth and resulting crops of trees in orchards with those in the richer soil of gardens and under the manipulation of the cultivator." What does that mean? It cannot mean anything else than that immature wood in autumn is more fatal to the crops than frost in spring. But I dissent from the dictum that stunted trees are the most fruitful, since there are thousands of them fruitless now, while younger healthier trees under the "manipulation of the cultivator" are bearing fruit.

I do not believe in stunted trees, nor am I satisfied that mere hardening of the wood is conducive to fruitfulness. I can see any day leafless fruit trees in an orchard on gravel, the wood is as hard and stunted as can well be imagined: but

trees in the garden are still green, yet the growths being thin will be sufficiently ripened, and, frost permitting, the trees will yield better crops than the starved and "hard" wooded orchard examples.

Then what is the cause of fruit being more plentiful in the north than the south this year? Is the barrenness of the Kentish orchards the "consequence" of immature wood last autumn, or of frosts during the blossoming period? If the votes of cultivators were taken the majority



would overwhelmingly show that the failure was the result of inclement weather in April and May of the present year. The later blossom in the north escaped and fruit followed, though the wood was scarcely better matured than in the south.

I repeat that starvation is not maturation; and though I do not suggest for a moment that Mr. Abbey confounds the two, I am a little fearful that his teaching may lead the inexperienced to do so. I was misled in this matter years ago, but I have long since lost faith in stunted fruit trees.

Your correspondent does not remember a summer so hot and dry as the present one since 1859. If I am not mistaken the summer of 1868 was quite as hot and dry as either those of 1859 or 1884, and the harvest was secured earlier in 1868 than it was this year; but what about that, Mr. Abbey may possibly ask? Just this: according to your correspondent's theory 1869 ought to have been a bountiful fruit year. But it was not. It was indeed quite the reverse. I remember it well, and remembering also that Mr. Luckhurst wrote forcibly on the scarcity of fruit, I have searched out his article. It is on page 65, July 22nd, 1869, where anyone who chooses to do so, and has the opportunity, may read the following paragraph:—"Never did a year open with brighter prospects for fruit-growers than this, and never were hopes and trees together so ruthlessly blighted. After so hot a summer as that of 1868, tending to make the wood firm and well ripened, with an abundance of blossom buds, it was reasonable to expect a fruitful year had the spring been favourable. But all these bright hopes have been dissipated, for surely never was known so disastrous a spring—from all parts come reports of scanty crops, foliage bruised, and in exposed situations torn to shreds; nor, as far as I can learn, are there any exceptions to this unfortunate state of affairs, but trees under almost all methods of training and culture have suffered alike. It is only on trees in very sheltered positions that fair crops are to be seen."

Impartial persons after perusing the extracts from Mr. Abbey's letter, and the evidence of Mr. Luckhurst, will perhaps admit that I did not put an unfair construction on the article I ventured to criticise mildly, and that I had some slight grounds for my remarks on page 234.—AN OLD GARDENER.

### BULBS FOR EARLY FORCING.

It is surprising what a large part is played by Hyacinths, Tulips, and Narcissi in the decoration of greenhouses and conservatories during the sunless and dreary months of autumn, winter, and spring. The decorative value of these bulbous plants is beyond question, for they could not well be dispensed with in those gardens where flowering plants for room-decoration are killed by hundreds, and large quantities of flowers in a cut state are daily required for a variety of purposes.

These are amongst the easiest of bulbous plants to cultivate, and with ordinary care failure need not result when the season has fairly advanced; but to have them in flower very early is another thing, and more persons fail than succeed in the attempt. We have seen quantities of bulbs started to be in flower before the end of the year, but they have scarcely ever moved after their introduction into the forcing house, and if they have it is only to burst a flower or two at the extremity of the spike, and they are then conveyed to the rubbish heap. This is not only vexing, but is waste of material, time, and money. Failure in this respect is not always due to the absence of cultural skill, but frequently results from the impatience of their owners to have them in bloom really before the bulbs are ready. Frequently they are ordered to be placed in heat when such a step is wrong; but the error is only perceived by the authors of it when the spikes fail to grow and unfold their flowers. To attempt to drive the plants in that way is simply commencing at the wrong end first.

These bulbs can only be had in flower early in one way, and that is by potting as early as they can be obtained. They will not force into flower until their pots are full of roots, and then strong heat is ruinous. A moderate temperature of 55° to 60°, where a moist genial atmosphere is maintained, will bring them forward after the pots are full of roots and the foliage has commenced developing better than a temperature 10° or 15° higher.

After the bulbs are potted they should remain under the ashes or other plunging material outside for six weeks. Tulips are sometimes longer than that in starting early in the season. They should be left, however, until the pots are well filled with roots, for nothing is gained by bringing them out before they reach this condition. Light should be admitted to them gradually until they turn green, after which they are not long before they commence growing. Two or three weeks in a cold frame or cool house is not time lost but gained, for the plants make greater progress there than they would do in heat. It is a great mistake to introduce them from a cool temperature to the forcing house; they should first occupy a position in a vinery or Peach house just starting, or any house where similar conditions are maintained.

The early white Roman Hyacinths are the first bulbs to arrive, and for cutting and other kinds of decoration are unsurpassed. The first consignments arrive about the middle of July, and if obtained and potted or placed in boxes at once, their delicious flowers can be had from the middle to the end of October without resorting to any undue forcing. We require the blooms by the 1st of November, and we always pot on the 1st of August to accomplish this. The flowers are produced under cool treatment by the date named in the majority of seasons, and in the worst only require a week or ten days' warmth to bring them fully out. When required only for cutting the bulbs are as well packed closely together in pans or boxes as placed in pots; in fact, for the earliest flowers they are better placed thickly together, for they do not usually start so evenly and regularly as later in the season. When required, handsome pots can be made up by lifting the bulbs from the boxes as they come into flower, and the plants and flowers last quite as long as when grown in the pots. We have practised both systems, and find no perceptible difference. Later batches should be potted at intervals of a month as long as the bulbs remain fresh, but as soon as they show signs of gum oozing from them potting must not be delayed a day longer. The blooms of these are invaluable for cutting long after the varieties of Dutch Hyacinths can be produced. We usually place four or five bulbs in a 4-inch pot according to their size, use no drainage in the pots, giving preference to a little decayed manure. Any light, sandy, moderately rich soil is suitable. The supply of Roman Hyacinth flowers can be maintained from October until March if the last batch is placed in a suitable position outside and covered with handlights just as they flower to prevent the flowers being injured by cutting winds and heavy rains.

The blue Roman Hyacinth can be had in flower about Christmas if bulbs are obtained as early as possible. The flowers about that time are serviceable for cutting, but for decoration in pots it is worthless, for the foliage is produced before there is any sign of flowers, and generally it is so long and weak that it falls over the sides of the pots unless supported with stakes.

The large-flowering or Dutch Hyacinths should be potted at once, or as soon as they can be obtained, if they are to flower without much trouble by Christmas. We have on several occasions had *Homerus*, single red, in flower by the middle of December. This is the earliest of all Hyacinths, and forces well, on which account it is valuable, but scarcely worth growing later in the season, as the colour soon fades. *L'Ami du Cœur* is the next earliest red variety.

*La Tour d'Auvergne*, double white, is only a few days later than *Homerus*. It is the earliest of all white Hyacinths, and decidedly the finest double variety for growing at any period during the season. The spike is large; the bells pure white, large, and very double, therefore invaluable for those who require to wire flowers in quantity for wreaths, bouquets, or buttonholes. The earliest single white variety we have yet been able to discover is *Grand Vedette*, followed closely by *Albertine*, if it is not equally as early, but it will be tried on a larger scale this year. The first-named makes a grand pyramidal spike, is very dwarf in habit, with bells of a very large size. Amongst blush varieties *Gigantea* and *Lord Wellington*, singles, are the earliest, but nearly a week later than those above named. Our earliest single blue is that finest of all blue varieties for decoration, *Charles Dickens*; it is a day or two earlier than the preceding two.

Early single Tulips generally arrive about the same time as Hyacinths, and can, if started early, be had in flower with ease from the middle of December. The varieties of *Duc Van Thol* are decidedly the earliest. The scarlet variety is good, also the rose-coloured. The others we have discarded in favour of *Canary Bird*, yellow, and *White Pottebakker*, which are only a few days later than *Duc Van Thol*. *White Pottebakker*, in addition to its adaptability for early forcing, is perhaps the finest white Tulip in cultivation. When forced early it does not exceed 5 inches in height; the flowers are large, and beautiful for wreaths, vases, bouquets, or any other purpose of decoration, and are very fragrant. All the Tulips used for early forcing are packed in pans and boxes, placing the bulbs about 2 inches apart, and then lifted out as they come into bloom, and even pots made up; the bulbs are tied in moss when used for baskets, peculiar shaped vases, and other receptacles. At one time we thought this rather a barbarous system, but it is decidedly the best, and the only means by which even pots full of bloom can be had so early in the season. The flowers last as long if the bulbs only are attached to them as if they possess roots. It is possible to have Tulips in bloom early in December.

Paper White and Double Roman *Narcissus* bulbs generally arrive at the same time as the Roman Hyacinths, and if potted



then can be had in bloom by the first week in November. These varieties are next to useless for decoration in pots, and should always be planted thickly together in boxes and pans for cutting purposes only. The bulbs are not so certain to flower as Roman Hyacinths; we have been very much disappointed with them some seasons and resolved not to grow them again, while in other years they have done well. A few only are grown to produce flowers until we can get States General into bloom, which is the next earliest variety. The double Roman is about ten days earlier than Paper White when the bulbs are potted together, and if those of States General could be obtained at the same time it would not be far behind them.

— The secret of having bulbous plants in flower early is to know what varieties are best adapted for forcing, then secure the bulbs directly they arrive, and pot or box them at once. Success afterwards is certain if they are forced into bloom as steadily as possible on the lines above indicated.—WM. BARDNEY.

### A GOOD FRUIT ROOM.

"WILL you give us a plan of a good fruit room?" That is the full text of a letter before us. The writer of it must either be a busy man or think editors have not time to read long letters. Whatever may have been the predominating idea of our correspondent, this we can say, that short letters receive the same attention as long ones, and we answer all that we can answer usefully. We have more than one plan of the structures in question, and since our laconic inquirer is "above" particulars we give a sketch that we think may be generally useful. The fruit room figured was erected for W. Hatton, Esq., at Hill Grove, by his gardener, Mr. J. Anderson. Fig. 49 is a section of it, and shows the

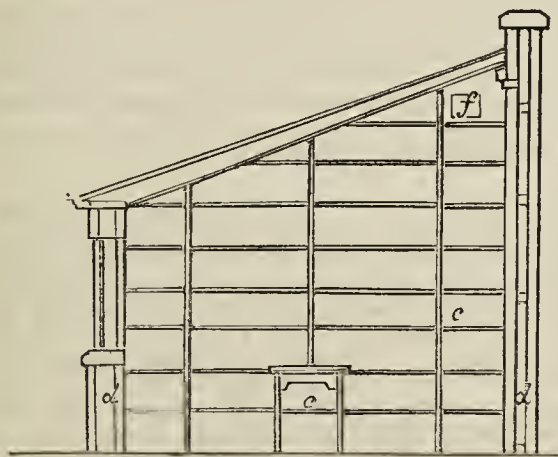


Fig. 49.  
SECTION.

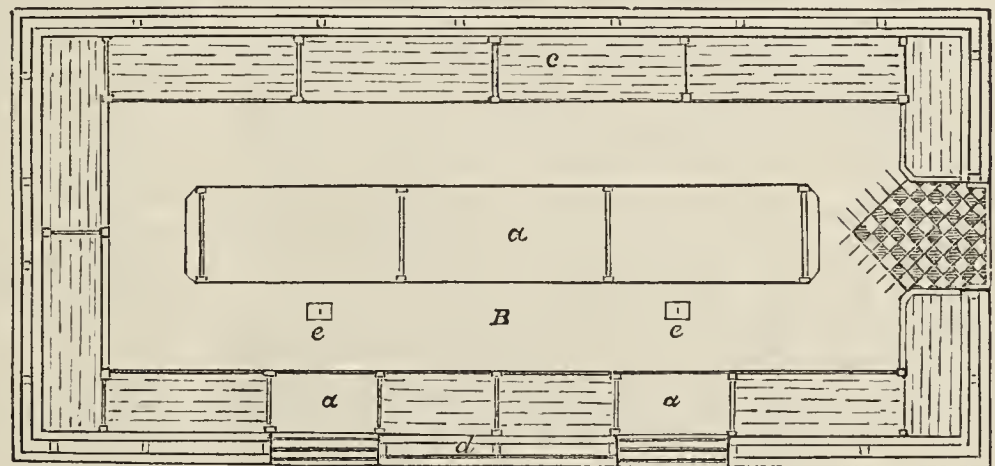


Fig. 50.  
GROUND PLAN.

Scale 8 feet to the inch.

a, Tables; B, Pathway; c, Trellis shelves; d, Air space in walls; e, Lids for admitting hot air from pipes underneath; f, Ventilator.

ventilator at the far end of the room. It is at the back of the north wall of the garden where it is erected, so that the aspect is north. One-half of the door of entrance to the room is louvres with slide, so that we can have a current of air through the room, or shut it up as required; the windows open also as ventilators if required. There is an open space in the walls with ventilating air-bricks bottom and top, which prevents all danger arising from a damp inside wall, and is also much more effectual in resisting the frost than a solid wall.

The interior arrangements, as will be seen from the drawings, consist of trellis shelves all round, and opposite each window is a table with drawers underneath; the former is useful for examining or comparing fruits, the latter for storing any choice sort. There is also a table down the centre of the room 20 feet long, and a pathway all round laid in diamonds with 6-inch paving bricks, red and blue alternately. In the pathway will be seen two lids; these are to admit heat if necessary from hot-water pipes underneath. The pipes are mains, flow and return, which supply a range of houses on the opposite side of the wall. The ceiling is covered with match-planed boards, and all the woodwork is planed smooth, and the sharp edges taken off the strips to prevent any indentation of the fruit, and the uprights and strip in front of each shelf. The ceiling and table-tops are all varnished, so that the whole presents a very neat appearance, and the owner along with his friends enjoys a walk round the fruit-room quite as much as round the garden, examining the different sorts of fruit, which are laid out singly and named, and with their supposed time of ripening also noted.

### ROYAL HORTICULTURAL SOCIETY.

FRUIT SHOW. — SEPTEMBER 23RD AND 24TH.

It had been announced that an unusually fine exhibition of Grapes was expected at South Kensington on Tuesday last, and the numerous visitors who were thus induced to assemble in the conservatory had not the slightest cause for disappointment. Very rarely indeed has so extensive a display of that all-important fruit been seen in London, and it was the unanimous verdict that the Society had scored another decided success in the series of shows which were so liberally provided for by the Health Committee. Although, however, Grapes constituted the great feature, Apples, Pears, Plums, and Peaches formed other important classes, while the vegetables were equally satisfactory. To brighten the whole and impart that liveliness which only such exhibits can do, there were several large and remarkably handsome collections of flowers, amongst which the varied Dahlias and Gladioluses were especially prominent, choice selections of autumn-blooming herbaceous plants adding another charm to the display. Considerable care was also exercised in arranging the fruit exhibits; small graceful Palms, Ferns, and miscellaneous fine-foliage plants forming a centre line on the principal table, and also assisted in separating some of the classes. These served materially to relieve the monotonousness which is usually too apparent at fruit shows, and Mr. A. F. Barron deserves much commendation for the effectual manner in which this was avoided.

### GRAPES.

It is seldom that the projectors of fruit shows can afford to devote £100 to one kind, yet this was the case at the Exhibition under notice, that amount being divided amongst twelve classes for Grapes, the individual prizes ranging from £10 to 10s. As was reasonably anticipated, prizes of such substantial value induced some of the best growers to compete, and an excellent opportunity was thus afforded of observing what is the standard of Grape culture in England. Over 300 bunches were staged, and though examples of deficient colour were not wanting, still, taking the exhibits generally, it is seldom that horticulturists have had an opportunity of seeing so many fine Grapes together. In some instances the contributions possessed all the qualities which are essential to first-rate Grapes in the highest degree, but, as is usually the case, the largest and what might be termed the most attractive bunches were surpassed in colour by small or medium-size examples, and amongst the

latter were to be found the finest finished Grapes in the Exhibition. In some classes this occasioned the Judges a little difficulty and a certain degree of dissatisfaction where the best ripened were passed over for the largest bunches that might be considered second-rate in other respects. Such must, however, be invariably the case, and we saw no instance in which the Judges' decisions could have been altered without equal grounds for dissatisfaction on the other side.

Exclusive of the collection from Chiswick nineteen varieties were represented, five of these having classes specially devoted to them. The most numerous shown was Alicante, of which forty-two bunches were entered. Next came Muscat of Alexandria with thirty-six bunches, Black Hamburgh with twenty-one, Gros Colman and Madresfield Court twelve each in addition to those in the collections. The other varieties represented by a less number than the above were Golden Queen, Alnwick Seedling, White Tokay, Lady Downe's, Gros Maroc, Buckland Sweetwater, Gros Guillaume (named Barbarossa in nearly every instance), Mrs. Pearson, Muscat Hamburgh, Trebbiano, Chatsworth Seedling, White Frontignan, and Mrs. Pince.

*Collections.*—The leading class in the schedule was that for a collection of ten varieties, six black and four white, two bunches of each, for which £10, £6, and £4 were offered as prizes. This brought four competitors, who staged some meritorious samples, but not so nearly equal as to cause any great difficulty in determining their positions. Premier honours were accorded to Viscount Eversley, Heckfield (gardener, Mr. Wildsmith), who had twenty even, well ripened, and beautifully coloured bunches on steeply sloping stands neatly covered with white paper. Taking them in the order they were arranged from left to right, the varieties were as follows:—Black Hamburgh, medium size bunch and berry bearing a fine bloom; Golden Queen, clear and fine colour; Madresfield Court, good bunches and berries, fair colour; Muscat of Alexandria, very handsome bunches and splendid colour; Alicante, large, but not symmetrical bunches, fine berries, and dense bloom; Alnwick Seedling, bunches and berries of moderate size, excellent colour; White Tokay, large and well ripened; Lady Downe's, one bunch large with a shoulder on one side, the other smaller, but



better proportioned, both having large handsome well-coloured berries; Mrs. Pearson, one bunch a trifle greenish, the other unusually well finished; Gros Maroc, very handsome, berries large, and bloom exquisite. The second position was obtained by the Rev. Walter Sneyd, Keele Hall, Newcastle (gardener, Mr. J. Wallis), with a most praiseworthy collection, but scarcely so even as the preceding. The varieties were Gros Colman, of fair size, but excellent colour; Lady Downe's, good bunches and colour; Buckland Sweetwater, medium size bunch, finely ripened; Black Hamburgh, rather small berries, but well finished; Gros Guillaume, of moderate size, fine bloom; Alicante, good bunch, dense bloom; Golden Queen, clear and good berries; Gros Maroc, very handsome in bunch, berry, and colour; Mrs. Pearson, bunch of medium size, but well ripened. Messrs. Rothschild, Gunnersbury Park, Acton (gardener, Mr. Roberts), were awarded the third prize with fine bunches, a little deficient in colour in one or two instances, the black varieties being placed on white paper and the white on pink. The varieties were Alnwick Seedling, fine colour; Foster's Seedling, small berries not fully ripe; Buckland Sweetwater, fine berries, one slightly wanting in colour; Gros Guillaume, large bunches; Madresfield Court, splendid colour; White Tokay, Alicante, Muscat of Alexandria, and Gros Maroc.

Only two collections of five varieties were contributed, but both were very praiseworthy, including neat even bunches, well finished. The Duke of Northumberland, Syon House, Brentford (gardener, Mr. J. Woodbridge), took the lead with Madresfield Court, medium size and fine colour; Muscat of Alexandria, even compact bunches, well ripened; Muscat Hamburgh, small berries, but excellent colour, as black as possible; Trebbiano, large well-formed bunches, and Lady Downe's, neat bunches with dense bloom. Lord Heytesbury, Heytesbury, Wilts (gardener, Mr. J. Horsefield), followed, showing Foster's Seedling, well ripened, but small berries; Muscat Hamburgh, fine bunch of good colour; Chatsworth Seedling, a favourite Grape at Heytesbury, very large bunches, rather small berries, somewhat irregular in shape and size, but of a fine black colour; Alicante, medium size bunches, dense bloom; and Trebbiano, large bunches and good colour.

In the five classes devoted to special varieties, three bunches of each, the competition was keen, and some excellent examples of the respective Grapes were staged.

*Muscat of Alexandria.*—Twelve competitors entered with this favourite and useful variety, the majority staging well-ripened bunches; taking them altogether, indeed, much better than this variety has been exhibited before this season. To the Marquis of Bath, Longleat, Warminster (gardener, Mr. W. Pratt) was adjudged the first prize for magnificent bunches, weighing in the aggregate about 15 lbs., the centre one probably exceeding 6 lbs. The berries, too, were extremely large and clean, but would have improved in colour in a week or two; this was, indeed, their only defect, for seldom are such handsome examples of the variety seen either at exhibitions or in gardens. J. N. Hibbert, Esq., Chalfont Park, Gerrard's Cross (gardener, Mr. C. Herrin), was second with fine, well-proportioned, and thoroughly ripened bunches; Lord Suffield, Gunton Park, Norwich (gardener, Mr. W. Allan) being third with finely coloured but rather loose bunches. The other exhibits in this class were not fully ripe, with the exception of three meritorious bunches from Mr. W. Ward, Longford Hall Gardens, Salisbury, which deserve notice for their good colour.

*Black Hamburgh.*—The best specimens of this variety were seen at Kensington earlier in the season. Those entered at this Show were not of remarkable merit in size of berry or colour, though some large bunches were staged. Mr. W. Pratt was the most successful of the seven exhibitors, securing the chief position with large but not well-proportioned bunches, and only fairly well coloured. Earl of Harrington, Elvaston Castle, Derby (gardener, Mr. J. H. Goodacre), was placed second with bunches of medium size, good colour, but not large berries. Mr. J. Roberts gained the third prize with neat compact bunches, but small and rather irregular berries.

*Gros Colman.*—The competition in this class was confined to four exhibitors, all of whom had excellently coloured bunches with large handsome berries. W. H. Sewell, Esq., Warren Hill, Loughton, Essex (gardener, Mr. A. Smith), won the leading position with beautiful bunches bearing a dense bloom. The Earl of Scarborough, Sandbeck Park, Rotherham (gardener, Mr. J. Summers), was second, his samples having fine berries slightly rubbed. Messrs. H. Lane & Son, Great Berkhamstead, were third, the berries of their bunches being large but wanting in colour.

*Alicante.*—This was a very strong class, fourteen competitors entering, and the majority being extremely near in merit, and causing the Judges some difficulty in making their awards. Mr. W. Pratt was again placed first, being the third class in which he secured premier honours, and his bunches were, like the others, remarkable for their size, weighing from 5 lbs. to 7 lbs. each, the berries rather small, fairly coloured, but slightly rubbed. Henry Tate, Esq., Park Hill, Streatham Common (gardener, Mr. Wm. Howe), followed closely with smaller but even bunches, and superbly coloured. The third place was accorded to A. Moss, Esq., Chadwell Heath, Essex (gardener, Mr. J. Worthing), who also had samples of medium size, but nearly as fine in bloom.

*Madresfield Court.*—Of the four lots entered in this class, those from Mr. Roberts were deservedly selected for the first place, three extremely even compact bunches, each weighing about 2 lbs., with large well-developed berries, magnificently coloured. Mr. J. Woodbridge, who was second, had larger but looser bunches, slightly rubbed. Mr. Goodacre took the third place, two of the bunches being fine and one slightly deficient in colour.

*Any other variety.*—This class was provided for any variety not named in the preceding, and brought thirteen exhibitors, seven varieties being represented. H. J. Atkinson, Esq., Gunnersbury House, Acton (gardener, Mr. J. Hudson), won leading honours with Alnwick Seedling, each bunch about 2 lbs., fine berries, even and dense bloom. Mr. Hudson has for some time grown this variety extremely well, but he has seldom shown it in better condition. The Marquis of Exeter, Burghley, Stamford (gardener, Mr. R. Gilbert), was placed second for Gros Maroc, fine berries and good bloom, but slightly rubbed. Mr. Summers was third with Gros Guillaume, very large, but only of fair colour. The other varieties staged Buckland Sweetwater, Foster's Seedling, Muscat Hamburgh, and Lady Downe's.

*The Highest-flavoured Grapes.*—There were nine competitors in this class, Mr. Woodbridge gaining the chief place for Muscat Hamburgh, well-ripened small bunches; Mr. Roberts following closely with the same variety, and Mr. Hudson was third with Muscat of Alexandria, small but ripe and of a

rich colour. Most of the other exhibitors had Muscat of Alexandria more or less well ripened, and one showed White Frontignan.

*Varieties Certificated by the Royal Horticultural Society.*—Mr. Wildsmith secured the first position in this class with Gros Maroc, having fine even bunches and berries, excellent in colour. Mr. Hudson was second with Alnwick Seedling in admirable condition, and Mr. W. Allan was third with Mrs. Pearson moderately good. The other varieties were Golden Queen and Mrs. Pince.

Only one lot of four Vines in pots was exhibited—namely, by Messrs. Lane & Son, for which the first prize in the class was awarded. The plants were 6 to 8 feet high, of the varieties Foster's Seedling, Lady Downe's, Alicante, and Gros Colman, each bearing a dozen or more large handsome bunches, the black varieties being particularly good.

From the Society's gardens, Chiswick, an extensive collection of the best English and foreign Grapes was exhibited, and this compensated to some extent for the absence of entries in the class provided for foreign varieties. Twenty-eight baskets were staged, the principal varieties represented being the following:—Gros Guillaume, Black and White Frontignans, Pocklington, Royal Muscadine, Black Hamburgh very fine, Gros Maroc excellent, Muscat of Alexandria fine in colour, Espiran, Alnwick Seedling beautiful, Duc de Magenta, Alicante fine colour, Buckland Sweetwater, Ciotat, Chaptal, Mrs. Pince handsome, Gros Colman good, Black Monnukka, Raisin de Calabre, Lady Downe's, and the Dutch Hamburgh, with its large flattened berries.

#### APPLES AND PEARS.

Apples were splendidly shown in both the classes, and notwithstanding the unfavourable season, it is evident there is plenty of handsome samples, at least in Kent, which produced all the winning exhibits in the dessert class, and two of those in the culinary class. For three dishes of dessert Apples there were sixteen entries, Roger Leigh, Esq., Barham Court, Maidstone (gardener, Mr. Haycock), gaining the first prize with Cox's Orange Pippin, Ribston Pippin, and Mother Apple, all large and finely coloured. The second place was taken by Mr. J. Staples, Chipstead Gardens, Sevenoaks, Kent, who had Devonshire Quarrenden, Red Astrachan, and Worcester Pearmain, but very few points behind Mr. Haycock's samples, most richly coloured. H. A. Brassey, Esq., M.P., Preston Hall, Aylesford, Kent (gardener, Mr. Waterman), followed with Worcester Pearmain and King of the Pippins extremely beautiful. In this class Mr. W. Jacob, Pound Street, Petworth, Sussex, showed dishes of Incomparable, a wax-like and pretty Apple, Jacob's Strawberry, which has been previously noted, and Scarlet Pearmain, all very good. In the culinary Apple class the competition was extraordinarily keen, no less than nineteen lots of three dishes being staged, and the majority of these were extremely fine. Mr. Ross took the lead with Stirling Castle, Mère de Ménage, and Lord Derby of great size; Mr. Haycock followed closely with Belle du Bois, Peasgood's Nonesuch, and Warner's King, very handsome; Mr. Waterman being third for Peasgood's Nonesuch, Warner's King, and Blenheim Pippin.

Pears were not nearly so numerous, only one class being devoted to them—namely, for three varieties, six fruits of each. Seven collections were entered, Mr. Haycock deservedly winning first honours for superb fruits, which awakened the admiration of all who saw them, and the envy of many cultivators who are not favoured with such a climate and soil as Mr. Haycock has. The varieties were Pitmaston Duchess, Doyenné Boussoch, and Durondeau. Mr. Goldsmith, Hollenden, Tonbridge, was placed second with Williams' Bon Chrétien, Doyenné Boussoch, and Bonne d'Ezée. J. Hargreaves, Esq., Marden Erleigh, Reading (gardener, Mr. Turton), followed with nearly as handsome samples of Souvenir du Congrès, Jersey Gratioli, and Brockworth Park.

#### PLUMS AND PEACHES.

Thirty dishes of Plums were entered in the class for two late varieties, nine fruits of each, and strangely enough the varieties for which the three prizes were awarded were the same—namely, Coe's Golden Drop and Pond's Seedling, which were shown extremely fine and well ripened by a large proportion of the fifteen exhibitors. Mr. Staples was placed first, followed by W. E. Hubbard, Esq., Leonardslee, Horsham (gardener, Mr. S. Ford), and Captain Le Blanc, Northau House, Barnet (gardener, Mr. J. May). Peaches were grandly represented, twenty-seven dishes of large handsome fruits being staged. Mrs. Vivian, Singleton, Swansea (gardener, Mr. J. Harris) won the leading prize with Sea Eagle, richly coloured, finely developed fruits. Mr. Wildsmith was second with the Nectarine Peach of good size and very dark in colour, Mr. Haycock being third with Lord Palmerston, handsome and well ripened. Many other varieties were shown, amongst them being Walburton Admirable, Bellegarde, Lady Palmerston (of a fine golden hue), Princess of Wales, large Late Admirable, Goshawk, and Dymond, which was remarkable for its extremely dark colour.

Strawberries were poorly shown. For one dish any variety Mr. W. Chuck, Brodsworth Hall Gardens, Doncaster, was first with Vicomtesse Hericart de Thury, small, and Mr. Ward was second with same variety, Mr. Roberts having the only dish of Quatre Saisons and securing the first prize for it.

#### VEGETABLES.

A class was provided for a collection of eight kinds of vegetables, distinct, and the prizes being substantial—i.e., £5, £4, and £3; the competition was very close and good, eleven even and admirable collections being staged. The premier position was awarded to Mr. Miles, Wycombe Abbey Gardens, for some splendid samples, clean and fine in every point. The kinds were Veitch's Exhibition Sprouts, very good; Canadian Wonder Beans, excellent; James' Scarlet Carrots; Cave's Pinesfield Onions, large and solid; Green Globe Artichokes, Edgcott Seedling Potatoes, Stamfordian Tomatoes, large and handsomely coloured; and Veitch's Improved Masters' Prolific Cucumbers, very even and neat. The Earl of Radnor, Coleshill House, Highworth (gardener, Mr. S. Haines), followed closely, his best dishes being Stamfordian Tomatoes, beautiful; Canadian Wonder Beans, Breadfruit Potatoes, Leicester Red Celery, Telegraph Cucumbers, and Snowball Turnips, all well-grown samples. W. H. Miller, Esq., Rood Ashton, Trowbridge (gardener, Mr. H. Miller), was third, a very few points behind the preceding, showing capital specimens of Stamfordian Tomatoes, Autumn Giant Cauliflowers, Purley Park Hero Cucumbers, Rowsham Park Hero Onions,



Intermediate Carrots, Major Clarke's Red Celery, and Reading Russet Potatoes.

#### MISCELLANEOUS EXHIBITS.

The stands of flowers and the collection of fruits not in competition from nurserymen and others added considerably to the extent and interest of the Show. Messrs. Paul & Son, Cheshunt, were very large exhibitors, having about sixteen boxes of single, Show, Fancy, and Bouquet Dahlias, Asters, and miscellaneous autumn-flowering herbaceous plants, besides eighty dishes of Apples, representing a great number of varieties. Messrs. T. Rivers & Sons, Sawbridgeworth, had some choice Peaches and Pears, very notable amongst the former being Lord and Lady Palmerston, Prince of Wales, Exquisite, Albatross, and Mr. Gladstone; while of the Pears Pitmaston Duchess, Durondeau, Louise Bonne of Jersey, and Rivers' Prince were remarkable for their size. Mr. T. S. Ware, Tottenham, had six boxes of single and bouquet Dahlias, very beautiful and selected varieties. Mr. H. G. Campbell, Gourrock, Scotland, sent a stand of thirty handsome Gladiolus spikes. Messrs. Keynes, Williams & Co., Salisbury, contributed ten stands of Show and Fancy Dahlias with five of single varieties, all extremely fine and rich in colours. Mr. G. Humphreys, Nash Court Gardens, Faversham, showed samples of a fine *Lapageria* named *rosea splendens* with flowers 4 to 5 inches long and 3 inches across the mouth of the tube, very bright in colour. Messrs. J. Carter & Co., High Holborn, had an extensive and beautiful group of Empress Cockcombs, which have very large rich crimson heads, and contrasted well with a row of the white *Lilium lancifolium Krætzleri* behind. A very large collection of Kales and Cabbages was contributed by this firm, who also had a plant of their Liliptian Potato, described as a cross between Champion Forcing Kidney and Ashtop Fluke from one seedling set planted March 25th, 1884. The tubers were very small, kidney-like in shape, and extremely numerous. Messrs. J. Cheal & Son, Crawley, had sixty dishes of Apples and Pears, including some handsome fruits of the former, the local Forge Apple being very notable, also the Curl Tail, Worcester Pearmain highly coloured, Warner's King, and others. Messrs. Rawlings Bros., Romford, Essex, showed three stands of Show and Fancy Dahlias, very fresh and bright. Messrs. Wm. Paul & Son, Waltham Cross, contributed a fine display of Roses, eight boxes of good blooms for the time of year being staged; some fine collections of herbaceous plants were also sent from the same establishment, Asters, Lilliums, Anemones, Rudbeckias, and Gaillardias being prominently noticeable. Messrs. Kelway & Son, Langport, had 120 spikes of Gladioluses and thirty-six spikes of Belladonnas, all very fine and effective.

Four magnificent Smooth Cayenne Pine Apples were shown by C. Eyre, Esq., Welford Park, Newbury (gardener, Mr. C. Ross), grandly developed fruits weighing respectively 7 lbs. 9 ozs., 7 lbs. 14 ozs., 8 lbs. 4 ozs., and 9 lbs. 7 ozs., with broad pips and splendidly ripened. A collection of about twenty sorts of Maize was sent from Chiswick, fruits of *Pyrus japonica* from E. M. Nelson, Esq., Hanger Hill House, Ealing (gardener, Mr. Chadwick), a dish of Cellini Pippin Apples from Mr. J. Deverill, Slough, a dish of Jacob's Strawberry Apples from Mr. W. Jacob, Petworth, Sussex, some Apples for name, a seedling Melon from Ockenden, and samples of the Strawberry Spinach, *Blitum capitatum*, from Mr. H. C. Allman, Horsham. Mr. R. Phillips, The Deodars, Meopham, sent a dish of Phillips' Perfection Tomatoes, very handsome fruits. Mr. Goldsmith, Hollands, showed enormous samples of White Elephant Potato, one weighing over 3 lbs. Mr. B. S. Williams, Upper Holloway, exhibited fruits of a large yellow Tomato named Golden Queen, very distinct.

#### APPLES AND PEARS ON LAST SEASON'S GROWTH.

In response to your correspondent "Non-Believer's" invitation, I forward a branch of Newtown Pippin with fruit on last season's growth. Others that I have noticed fruiting in the same way are Emperor Alexander, Cox's Orange Pippin, Cockle Pippin, Hawthornden, and Nelson's Glory—in fact, a great many of the trees here have fruited in the same way. They are mostly young trees, and make rather vigorous growth. I thin out the growths in August, and cut back the strongest about a third of their length. I send you samples of this season's growth with the fruit buds for next year's crop plainly visible, the varieties being Ribston Pippin, Cockle Pippin, and Kentish Codlin. I have this day (September 16th) picked a fruit of Beurré Bosc Pear from the terminal bud of an unpruned growth of last season weighing 20 ozs., which I think is an extraordinary weight. Glou Morceau is also fruiting on last season's growth on several trees; but Pears here this season are nearly a failure, the only sorts having anything like a crop being the two above mentioned, Williams' Bon Chrétien, Louise Bonne of Jersey, and Winter Nelis.—T. GRANT, *The Gardens, Ossemsley Manor, Christchurch, Hants.*

[The growths are very fine, the crop of fruit on last year's wood excellent, and fruit buds on this year's shoots plainly visible.]

MR. A. YOUNG has kindly sent me last year's and this year's Apple shoots to verify his statement, a couple of weeks ago, that fruit buds were, in the case of free-bearing varieties, formed upon the current year's shoots. Mr. Young's statement was that the fruit buds appeared over a length of 10 inches at least "from the base upwards." This description led me to think he had mistaken the two-year-old wood for this year's, because, as a rule, the smallest eyes are at the base of the shoot, and in some varieties never become fruit buds, but remain dormant, hence my request to see examples. I find I was so far justified in my doubts by the samples sent. Mr. Young's shoots of 1883 are of course now studded with fruit buds, and he says they produced fruit this year, which he removed before posting. It is this year's (1884) shoots we have most concern with, however, and I may remark here that both the shoots sent are remarkably fine samples, evidently grown under most favourable conditions, otherwise such strong shoots could not become ripe. The two-year-old shoot measures nearly an inch across at the base, and this year's shoots about half an inch. One of this year's shoots is 13 inches long, bears fourteen buds, two, or at most three, of which are apparently fruit

buds, but the rest are certainly leaf buds. These fruit buds are not borne from the "base upwards," for the first or lowermost bud is close upon 8 inches from the base. The other shoot is about the same length, bears fifteen buds, four or five of which are apparently fruit buds, and the first of these is 6 inches from the base; in fact, on this shoot the fruit buds are borne from the base downwards, but Mr. Young has unfortunately cut away the tops of the shoots. From the appearance of what remains I should say the entire shoot probably bore thirty or forty buds, so that the proportion of fruit buds is not great, and only establishes the exception and not the rule. For all practical purposes we must still treat the Apple, in pruning, as bearing on the two-year-old wood and not on the wood of the previous year, as all writers on the Apple have hitherto treated the subject; but I admit at once that Mr. Young's shoots are not "accidents" in the sense meant by me. I have stripped his shoots of their leaves to permit the examination of the buds, and they are still in my possession if needed to verify my description of them. I am also much obliged to Mr. Young for his kindness, as the subject has an interest for me apart from this discussion.—NON-BELIEVER.

[It is not usual for the last year's wood to bear fruit from the "base upwards," but from the point downwards; yet the example sent last week by Mr. Waiting was clustered with fine fruit quite down to the two-year-old wood. This, however, appeared to be the result of shortening the shoots in July, and the result justified Mr. Waiting's remarks on page 138, however exceptional this method of fruiting may be. In the case of some varieties and districts the bearing of Apples towards the extremities of the previous season's growths is too common to be regarded as accidental, but, at the same time, having regard to the Apple crop in the aggregate, which necessarily includes all the varieties in all districts, it will perhaps be conceded that a greater bulk of fruit is gathered from two-year-old wood than from growths of the previous year.]

#### TIGRIDIAS.

MR. GUTHRIE has failed to answer my question as to depth of planting in various soils. I know something of Swanley soil, which would be in excellent condition for planting in February last, but is one season sufficient to prove what your correspondent has laid down? Did he plant those at Swanley, and if so, where else has he "for years" (see page 220) adopted this method? As he has had no experience on very sandy soils, what would he say to dibbling during a wet February on stiff soils (a not unfrequent occurrence this)? And more, I could instance numbers of places where the soil would scarcely allow a dibble to be forced into it such a depth, and where to make it workable at all burnt ballast and road grit are added. This is why I asked, "would he unconditionally prefer what he has prescribed?" We are none of us too old to learn. Your correspondent says that "Tigridias seed freely when grown in pots," and to seed freely they must have grown freely and flowered freely, so that while he does not give cultural directions he admits that they can be well grown in pots. Therefore I ask him again what pots would he use to guarantee their being planted 6 inches deep at least? and this the minimum. What, then, is the maximum? I have grown them well in 48-sized pots, and can testify to their adaptabilities for conservatory decoration when thus grown; and by keeping a few of them dry till the middle of May and then pot them, flowers may be had for the conservatory when "Tigers" refuse to open outside.—SPECIALIST.



#### KITCHEN GARDEN.

CLEANING should now have attention. Throughout the summer the quarters may have been hoed frequently, but the warm days and dewy nights we are having now seem to favour the growth of weeds, and when wet weather comes it will be difficult to clear them off. Of late we have combined our kitchen garden and pleasure ground men, began at one end of the kitchen garden and cleaned it thoroughly. Now no weeds or refuse can be seen, and our labour in cleaning will amount to little or nothing until the winter is over. A clean kitchen garden is a real pleasure to see at all times, but when cleaning is done in late autumn or winter extra labour must be employed without being able to accomplish the work thoroughly.

**Onions.**—Those pulled up and laid out to dry in the open air some time ago should now be taken in. Twist the stems off, rub the bulbs over to take the rough of the roots and loose skin off, and store in their winter quarters. Autumn-sown Onions coming through the ground or advancing in growth should have the Dutch hoe run between the rows. All last year's autumn-sown bulbs which may now be showing signs of starting into growth or decaying should be used before they become useless or the sound spring-sown ones are touched.

**Celery.**—Two of our earliest earthed-up rows, a red and a white, are now being dug up for use, and notwithstanding the dry season, which might be considered bad for Celery, the produce is very good indeed. The earthing-up of late crops should be pushed on, remembering to keep the stems perfectly upright, and allowing no soil to pass into the centre.

**Lettuce and Endive.**—Small plants of both of these should now be



dibbled into cool frames for use when the weather is very severe in winter; 9 inches from plant to plant is a good distance to put them in. Do not place lights over them so long as the weather is mild. Where no frames exist for such things plant them out near a south wall or any place where they will get all the sun and be sheltered from frost. Tie up some of the earliest Endive to blanch.

*Frames.*—Clear as many of these as possible, have the lights washed and repaired if necessary, and place them where they will be convenient for the reception of any tender vegetables during severe weather.

*Late Potatoes.*—So long as the weather is favourable these should be dug up and stored; not many of the stems are green now, and nothing is gained by leaving the tubers in the ground after they are ripe. Indeed, wet weather comes before they are stored it will be a difficult matter to get them stored advantageously.

*Kidney Beans.*—Where these are desired as late as possible every one of the old pods should be gathered, and the late ones or those still in bloom will soon swell and be of the greatest use in October, and perhaps even in November.

*Autumn Cabbage Plants.*—Make up all blanks in those planted some time ago, and where the stock is deficient plant more at once, putting in a good batch of the best plants in good soil.

*Cauliflowers.*—Where many heads are forming together cut the surplus before they become too old, and store them in a dry place with their ends in damp soil, sand, or sawdust. Take up the best of the young plants sown this autumn and dibble them into handlights, frames, or sheltered positions to stand the winter. Last autumn we planted some rows of Cauliflowers with our autumn Cabbage, and they stood the test equally well as the Cabbages, but then we had little frost.

*Tomatoes.*—This is a splendid autumn for Tomatoes, as they are ripening well in the open air, and where many of them are grown they will be coming in too fast for present consumption, but when this is the case they may be very profitably converted into sauce for winter use. Cuttings of the most fruitful varieties should be inserted singly in thumb pots at once and rooted under glass for fruiting plants in winter. The outdoor fruits may be made to meet all demands until Christmas, then those plants being rooted now should be bearing.

*Dwarf Kidney Beans.*—These should be sown on slight hotbeds or in warm pits for fruiting in two months hence. Good soil 6 inches deep will grow them. Sow thin, and do not coddle the plants too early with unnecessary protection.

Bracken and other materials used as winter protectors in severe weather should be collected and stored safely in a perfectly dry state.

#### FRUIT-FORCING.

*VINES.*—*Early House.*—To have new Grapes ready for cutting by the end of April or beginning of May the Vines should now be pruned, washed, and dressed as early as possible, preparing for closing the house the last week in November. If the houses have been kept free from red spider and other insects a good washing with warm soapy water or some approved insecticide will be found sufficient, as healthy Vines are sometimes ruined by the practice of scraping, scrubbing, and dressing where there is no necessity for it. The most troublesome insect to contend with is mealy bug, which sometimes obtains a footing on Vines, being introduced by plants infested with it, and is somewhat difficult to get rid of, especially when it obtains a hold on old Vines. Much may be done by thoroughly cleansing the house and Vines, and afterwards deal with the enemy through the spring and summer, when every insect that has escaped the winter dressing should be destroyed by the application of methylated spirits before it has time to move away from the position in which it has spent the winter or resting period. The best remedy, however, for mealy bug is to syringe the house and Vines thoroughly before pruning with petroleum, a wineglassful to three gallons of water, kept briskly stirred whilst it is being applied, and repeat after pruning. It should also be repeated at the time the house is closed for forcing. If not already done, advantage should be taken of the fine weather for getting all outside borders put in order by thoroughly clearing them of old mulching and inert soil quite down to the surface roots, and top-dressing with new compost of rough turfy loam, charred garden refuse, and a twentieth part of bone dust, thoroughly mixed and used in a dry state. Beat firmly with the back of a steel fork, and cover with 3 or 4 inches of fresh stable litter for the present. Let the borders have the benefit of all the rain that falls up to the end of October, and increase the covering in time to protect from frost and snow.

*Late Grapes.*—These should now be well coloured, and although they may be ripe enough for exhibition they will require a considerable time on the Vines before they are fit for removal to the Grape-room, and a longer period after they are cut to bring them into the best possible condition for dessert. Up to the present a good covering of foliage has been favourable to the colouring process in the case of such varieties as Lady Downe's, Black Morocco, Gros Colman, and other black Grapes; but now daylight is almost counterbalanced by darkness, and nights are getting cold, all lateral growths should be removed to admit of a free circulation of dry warm air through the bunches and amongst the leaves, which should be kept clear of the glass to prevent the retention of moisture by night as well as by day. Where Hamburgs are now ready for cutting they will keep up the supply until the Alicantes come into use from November to January, when the Gros Colman should lead to Lady Downe's, the best keeping Grape up to May. In order to have Gros Colman in the finest condition the Grapes should be cut when the Vines are quite clear of leaves, bottled, and kept in a warm Grape-room for a month or six weeks, and sufficiently dry to prevent the fleshy stalks

and shoulders damping. This will take from them the earthy flavour; indeed by this process they will be fitted for the choicest dessert from January to March.

*MELONS.*—The present month in most places will bring the Melon season to a close; indeed, after September Melons are not of much account, being watery and deficient in flavour. Much, however, depends on the weather during October. Plants that are now swelling their fruits will need a night temperature of 70°, falling to 65° in the morning, 70° to 75° by day artificially, and 10° to 15° rise from sun heat. The shoots should be kept well thinned, the laterals stopped, and the fruits fully exposed to the influence of the sun. Where the fruits are approaching maturity a little ventilation should be left on at night, and a dry warm atmosphere secured, keeping the plants somewhat dry at the roots, but not to the extent of flagging.

*CUCUMBERS.*—Plants in full bearing should have a top-dressing of three parts light loam and one part well-decomposed manure, after which, if they are dry at the roots, water with tepid clear water, as it is not advisable to apply liquid manure until the roots have pushed well into the new soil, which they will do quickly. Attend frequently to stopping, thinning, regulating, and tying the shoots, as neglect in these respects is the forerunner of disaster. Maintain a genial temperature of 70° to 75° from fire heat through the day and 75° to 85° with sun, closing early—from two to three o'clock, according to the weather, and so as to raise the temperature to 90°, the night temperature being maintained at 65° to 70°. Ventilate freely on all favourable occasions seedlings, to secure a sturdy growth and thick-textured foliage. Syringe the plants twice on fine days, but in dull weather damping will be sufficient. Young plants which have some time since been put in their fruiting quarters will be the better for having some soil placed to the sides of the ridges or hillocks in sufficient quantity to cover the young roots as they push through the soil. Plants in frames will require to have the linings made up weekly or fortnightly according to the state of the weather. Ventilate early in the day, and make the most of sun heat by early closing. It is advisable when the linings are brisk in heat to ventilate a little at the back at night by tilting the lights. This will prevent any damage from rank steam, and a covering of mats should be placed over the lights at night. Keep the growths well thinned, remove decayed leaves as they appear, and stop the shoots a joint beyond the fruit. If the plants are to continue in bearing a time longer they must not be overcropped, and none must remain on after the fruit attains a size fit for use. They will keep a considerable time if the heel ends of the fruits are placed in saucers filled with clear rain water.

#### PLANT HOUSES.

*Euphorbia jacquiniæflora.*—Plants that have been in cold frames up to the present time must be removed to a house or pit where the atmosphere can be drier at night, and the temperature at about 55°. If left in cold frames after this date the foliage is very liable to turn yellow, especially if too much water is given at the roots. If removed to a heated structure care must be taken that the plants are not excited again into growth, or they will soon become tall and weak, and in the end flower but poorly. To avoid this no artificial heat will be needed for some weeks yet during the day, and only at night when the temperature is likely to fall too low. On all favourable occasions air should be liberally admitted during the day as well as at night. If the pots are full of roots stimulants may be given in a weak state every time water is applied, nothing being better for these plants than liquid made from cow manure and clear soot water. If the plants display any signs of starting into growth feeding must be discontinued for a time, at least until this tendency is checked.

*Poinsettias.*—The advice given respecting Euphorbias applies with equal force to these plants, for if they are starved the roots soon cease action, and the foliage turns yellow and eventually falls. As soon as the early batch has finished growth and commenced to form their bracts they may be assisted to develop in a night temperature of 65°. The beautiful scarlet bracts of these plants are always larger in size and brighter in colour when developed in brisk heat than when they are kept in too low a temperature. The latest plants that are now in 3-inch pots may be transferred into others 2 inches larger. They should be potted firmly in good loam, one-seventh of manure and sand, and afterwards grown close to the glass in an intermediate temperature.

*Cyclamens.*—The earliest plants will now have quantities of flower buds nestling close at the base of the foliage, and if great care is not taken they are very liable to damp in cold frames, especially in low damp localities. If they are in a backward condition they may be placed on a shelf in a house or pit where the atmosphere can be kept a little drier, and if fully exposed to the sun they will come forward faster than in cold frames. If sufficiently forward they may be kept from damping in frames, provided they are watered and ventilated judiciously, the plants being elevated on pots close to the glass. Stimulants should be supplied every time water is needed, morning being the best time. Abundance of air must be admitted to the plants, whether large or small, or the foliage will soon draw up weakly. Plants intended for late spring flowering should, if they need more root room, be shifted at once, so that they will have ample time to root into the new soil and become established before winter.

*Clematises.*—Those of the Lady Londesborough type that are required for early forcing, and have been standing outside during the summer, will now need attention. They should be turned out of their pots in order to ascertain if the drainage is in good working order; if not, fresh should be supplied. If the pots are well crowded with roots and in pots sufficiently large as much soil as possible should be removed from the



surface, and after the plants have been returned to the pots good loam and a third of decayed manure may be given. If the soil can be picked carefully from amongst the roots this also should be done while the plants are out of their pots, for they are gross feeders and enjoy a little fresh rich soil annually. The trellises must be replaced and the plants neatly and evenly trained upon them ready for forcing. After this has been done they may again be plunged outside on ashes or other material where worms will not enter the pots, until the approach of severe weather.

*Heaths and Epacris.*—In localities where the rainfall is abundant and heavy showers frequent at this season of the year these plants are better in a position where they can be protected. The flowers of the former are very liable to fail if the plants are allowed to become saturated at this season when they are swelling and developing. When placed under cover they must have a light well-ventilated position. Care must also be taken that they do not suffer by an insufficient supply of water at their roots, or their flowers will also fail to develop. Plants of both kinds that have been liberally fed up to the present time must not be neglected now they have set their buds, or they may fail to develop from exhaustion. Hundreds of plants annually fail from this cause alone, especially those that are grown by the trade and then passed into private hands.

#### THE FLOWER GARDEN AND PLEASURE GROUND.

*Lifting and Storing Bedding Plants.*—We are having a very favourable autumn, and the beds up to the present time (September 18th) look remarkably well; consequently where it is necessary to lift old plants to keep through the winter for the purpose of affording cuttings in the spring there is the danger of deferring the operation until it is perhaps too late. Frosts may reasonably be anticipated at any time after the third week in September, and only a moderately severe one will spoil such plants as *Heliotropes*, *Iresines*, *Coleuses*, and *Alternantheras*. The requisite number of stock plants of these should at once be carefully lifted with small balls of soil about the roots, be placed singly into rather small pots, say 4-inch or 5-inch, or according to the size of the plants and the amount of roots they have. The pots should be carefully drained and good light soil be used. Place them in a close frame for a few days and shade from bright sunshine. When slightly recovered transfer the *Iresines*, *Coleuses*, and *Alternantheras* to shelves in a stove or forcing house, and the *Heliotropes* to a warm greenhouse for the winter. *Verbenas* do not lift well, neither do old plants afford many good cuttings in the spring. *Lobelias* should be lifted with soil attached, have all the old flowering tops trimmed off, be stored in ordinary *Pelargonium* boxes, and wintered in cold frame. Preference should be given both in the case of *Lobelias* and *Ageratums* to those plants that are furnished with a number of soft flowerless shoots, as neither kind, if covered with flower shoots, can be lifted with any certainty of ultimate success. When the choicer or variegated *Zonal Pelargoniums* are lifted these should be stored singly in small pots, or several in well-drained larger pots; but the more robust green-leaved sorts, with the exception of *West Brighton Gem*, can be safely wintered in boxes in well-raised and protected pits and frames. The delicate varieties are most safely wintered on dry shelves in vineries and other houses. It is useless to attempt lifting *Pelargoniums* with balls of soil, and it will be necessary to shorten the roots and remove many of the old leaves to prevent damping. Any of the tuberous-rooted *Begonias* that are still flowering freely may be lifted, potted, and placed in a greenhouse or conservatory for a time. The remainder should be left in the ground till the tops die, when the bulbs should be lifted, stored thickly in boxes of soil, and placed where they do not become very dry; they require to be protected from frosts. *Begonia weltoniensis*, which is sometimes bedded-out with good effect, also lifts readily, and will help to enliven the greenhouse for a time. So also would a few strong plants of *Abutilon Thompsoni* and *A. tessellatum Darwinii*, and in the spring would yield a number of side shoots, from which a stock of handsome bedding plants can be raised. *Salvia patens* does not lift well, and we usually leave these in the ground until the tops are killed by frost, when the tubers are stored in boxes of good soil, and placed in a frame or pit where they can be protected from severe frosts. It is also advisable to lift a few strong plants of *Verbena venosa* with their long fleshy roots intact; pack these in boxes of good soil, and protect them from severe frosts. *Centaureas* are rather difficult to winter, especially those potted from the open ground. They should be stood on dry airy shelves in a greenhouse, watered sparingly, and have all decaying leaves frequently removed. *Polemonium caruleum variegatum* is quite hardy, but it is advisable for several reasons to pot the plants before the tips of the leaves have been damaged by frost. They should be wintered in a cold frame. All the seedling *Dahlias* should be examined, and the best only marked and eventually lifted, all the inferior varieties being thrown away. Single *Dahlias* have been partial failures with us this season, and fewer of them will be grown in the future.



#### NOTES FOR BEGINNERS.

##### ECHOES FROM THE HEATHER.

I FIND from the many questions put to me by beginners that we, as teachers, are responsible for having neglected or passed over the

initiatory steps to successful apiculture. It is, however, unnecessary to go over all that is supposed to be essential throughout the year for beginners, but we may state the more important items for the season. From now until the shortest day is the natural resting time of the bee, therefore all feeding should be past by the middle of this month, after which no hive should be disturbed by manipulation or by changing its aspect or appearance. In fine days until November they air themselves, which is very beneficial should they by a spell of cold weather be confined to the hive, but breeding. Should anything occur that necessitates the examination of any hive, great care should be taken to prevent robbers getting access should bees be flying, and if not to be careful not to manipulate in such a way as to induce bees to get chilled either by alighting on cold ground or dropping from the hive or frames. If there be any risk of either of these evils taking place, the hive may be carried into a warm room with but one window, and that looking towards the south if possible. As it is the active bees that sting care should be taken not to encourage any to fly by slightly smearing the entrance with carbolic acid, then pushing a wing or feather underneath the combs if a straw hive, but if a frame hive a little carbolic acid rubbed on the top of the frames and a feather smeared and directed towards the place of inspection will cause the bees to retreat. When it is most convenient to fumigate use a material such as brown paper containing creosote, but unless it is absolutely necessary do not manipulate at all.

The site of the hive is important: the nearer it is to the house the less likely are the bees to be vicious. Timid people sometimes place the hives in a quiet position for fear of people being stung, which has the very opposite effect. A very important matter is to see that there is no water near the front of the hives, and have them so placed that the sun will shine upon them (though not in front) some time of the day between 10 A.M. and 3 P.M. Be careful that no rain has access to the hive; see that the rain is led right past the floor, and that the alighting board does not lead water to the interior. A floor of perforated zinc will prevent many a mishap that would otherwise occur.

The best time to greatly contract the entrance of hives is the month of February, but with a proper perforated floor it might be advisable to do so now, but is not advisable where floors are likely to be retentive of moisture. Guard the hives against mice and other vermin with an efficient projecting waterproof roof raised well above the quilts and hay or straw covering, affording ample ventilation; such prepared hives, with not less than 30 or 40 lbs. of food should tide over a severe winter with safety without the slightest uneasiness on the part of the owner as to its safety, thereby dispensing with all unnecessary manipulation. The beginner who masters these matters will not be so liable to run into error as those entirely ignorant of some of the first rules, one of which is that where bees cover two-thirds of the combs now no contracting is required—in fact, it is an evil to do so. There are other points of importance which may be adverted to again, meanwhile a few more hints of the bee's actions at the Heather may be given.

In a previous article it was shown what an abhorrence bees have to entering sections, and that sections are not sealed in as efficient a manner as supers are. These facts being borne out by the greatest advocates of sections, the beginner should lay that to heart. I have also warned bee-keepers not to deprive hives of honey before taking to the Heather without feeding, which encourages breeding at the most important time for profit after, and prevents the eating-out of eggs and brood, which often takes place on supers being removed even though the hive is otherwise well provided for. Alongside my own hives at the Heather are some that were deprived of their stores, and others supers only taken off, and though more good hives have, unlike their neighbours, not a single super. Then there are others that had the empty super interposed between hive and partly filled super. In every case the bees had the extra labour of removing all the honey to the body of the hive, losing time and wearing out bees which ought to have been avoided. Unless people are gifted with clairvoyance, knowing the weather is to continue good till such times as a second super so placed would be filled, it never should be attempted. Supposing I had no other evidence than what I have witnessed at the moors, I would never be convinced but that what I have stated, have long taught and experienced, is decidedly the best and most profitable system and management of bees, and it never will be superseded by the plans and systems that I have pointed out as objectionable.—A LANARKSHIRE BEE-KEEPER.

#### BEE HOUSES.

I HAVE at different times noticed in your Journal that many experienced bee-keepers despise bee houses because they think they are not adapted to the work that has to be done. By bee house I mean a building in which the bees are kept, and the owner get into so as to watch them and be free from the risk of stings when the hives are not opened. I send this more for the benefit of those who can afford to erect a snug bee bouse than for the cottager, to whom expense is a great object.



I have a wooden bee house 12 feet long on its front side. On this side it holds four hives, each containing twelve to fifteen frames "standard" size. The hives are placed in a row equal distances apart, 1 foot back from the front of the bee house, and on tabling 2 feet above the ground. Opposite each hive in the bee-house front are four holes 11 inches long by 8 inches deep. Immediately inside this, between this and the hive, I have a boxed-up entrance porch. I put a piece of loose glass on the top and a wooden hinged lid. The hive front is placed against the back of the porch, and a hole is made in the back of the porch to correspond with the hive entrance. The bees fly right into the porch and go into their hive. I can look down through the glass at the top at them. If I see fighting or robbing I move the hive sideways an inch or two, and the entrance is made smaller.

In winter I keep two hives with bees in them inside and opposite the bee-house front, and two empty hives, placed alternately. I call these A and A' with bees in them, and B and B' without bees. They are placed thus (see drawing). The swarms (two or three) from A are put into B, also those from A' into B'. I have a covered passage between the entrance porch A and the entrance porch B 4 inches wide and 1 inch high. The bees seem to go backwards and forwards, but I never see fighting. I think probably there is less disposition to fight because B's bees have originally come from A.

In autumn, as I do not wish permanently to increase my stock, I join B to A, B' to A', or *vice versa*, as I think most desirable at the time. Of course there are supers on in summer, which are all removed in autumn. If I join B to A, both queens being equally prolific, I think A's queen most likely to live, because she and her bees have been less disturbed than B's queen, which with her bees have been taken out of their hive. Before I commence operations I take the glass off and both entrance lids, and move A back an inch from its entrance porch, so as to allow bees tumbling outside the hives to find their way in more easily. I also put a piece of perforated zinc between B's entrance and its entrance porch, so as to keep the outside bees from coming in while operations are going



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Lord Grosvenor Apple (B. C.).—An old and esteemed correspondent of the Journal asks if you will kindly allow your name and address to be sent to him. If you comply oblige by sending them to us, and the matter shall be attended to.

Datura Stramonium (F. B., Hants).—The plant of which you send a specimen, that has come up in the kitchen garden, is the Thorn Apple, Datura Stramonium. The plant is occasionally found wild in Britain, having escaped from the gardens, and its habitat is generally among rubbish and on dung-hills. It is easily known by its large oval seed-vessels, thickly covered with stout sharp spines. The whole plant has a disagreeable, nauseous, and heavy odour, particularly when bruised, and an acrid bitter taste. It loses much of its odour by drying, but retains its properties. When taken internally in moderate doses it causes numbness, vertigo, dimness of vision, dilation of the pupils, produces a slight delirium, intoxication, and forgetfulness, and these effects pass off in five or six hours; but if the quantity taken be large, then all the symptoms of poisoning are presented, as heartburn, intense thirst, a feeling of strangulation, delirium, madness, convulsive movements, and

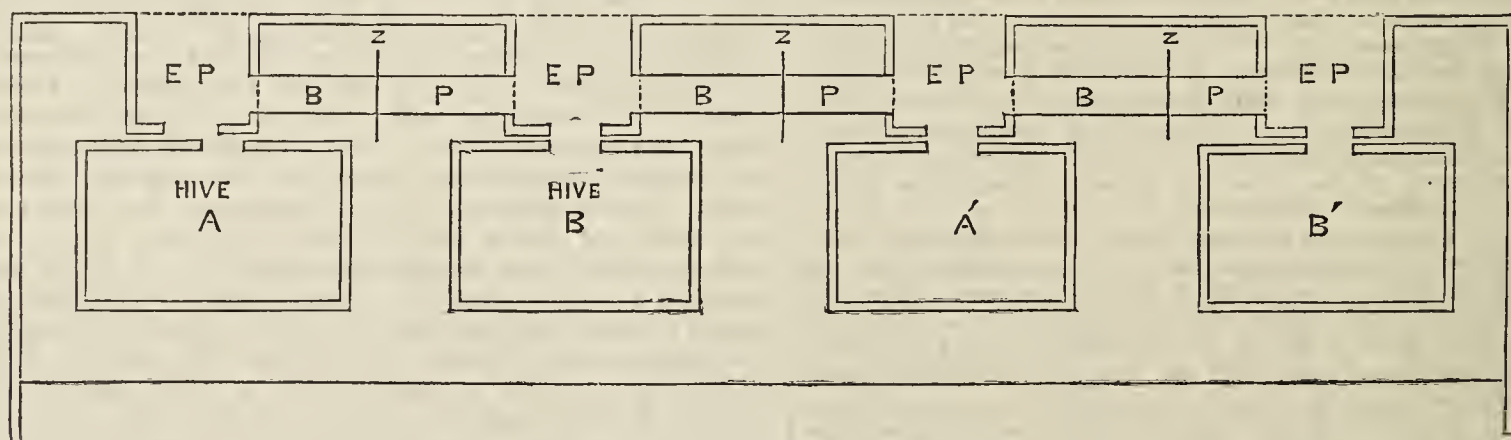


Fig. 51.—BEE HOUSE FRONT.

Tabling 2 feet high.

Scale  $\frac{1}{2}$  inch.

E P, Bee passage, 1 inch deep; section loose to lift off to keep clean. E P, Entrance porch. Z, Zinc slide. Hive A is pushed on one side showing the entrance hole made smaller. Immediately above the entrance porches I have wooden shutters to open.

on. Having put all the brood combs from B into A, I remove hive B from its place, leaving the perforated zinc against the entrance porch aperture. I put the lid on to a hive and watch the result. The bees in B entrance notice that their queen is gone, and in a very few minutes, if she in A hive find that out, in one second they turn their heads up the passage and begin to rush up. I have seen no fighting; the bees in A entrance receive them with joy, and all is right. If the B queen is still about the honeycombs in B hive I should shake them over the top of a comb, but I have not yet experienced any difficulty; and even if she were lost I feel sure the B bees, not being able to get to their own hive, would go along the passage to their own brood in A.

This year I found A with its young queen in a prosperous state and full of brood. Its drones were killed. B had done well in filling a super, but its drones were very numerous, and there was only a comparatively small quantity of worker brood, but there was no drone brood, so I concluded there was an old queen. As an experiment I joined A to B; it was quite satisfactory. In half an hour the bees set to work at the drones, and at no time have I seen greater vigour than was shown on this occasion. I felt sure the old queen, or B's queen, was destroyed, and that A's queen reigned supreme.

In my bee house I have a wooden shutter to open and shut, and to give light to the top of the bee hives when opened up. The rest of the place being dark, stray bees soon go out and go to their entrance porch.

I find that after joining two hives in this way that in two days the B bees fly to the A entrance at once. At first they come to their own entrance, but soon find their way up the passage.—A DUMFRIESSHIRE BEE-KEEPER.

#### TRADE CATALOGUES RECEIVED.

John Hey & Co., 4, Station Street, Huddersfield.—Catalogue of Bulbs.

John Kennard, Old Kent Road, London, S.E.—List of Horticultural Sundries.

Hogg & Robertson, 22, Mary Street, Dublin.—Catalogue of Hyacinths and Tulips.

E. Webb & Son, Wordsley, Stourbridge.—Catalogue of Seed Corn (illustrated).

Hooper & Co., Covent Garden, London.—Catalogue of Bulbs.

paralysis; congestion of the brain ensues, symptoms of inflammation are manifested, and death follows in twelve or fifteen hours. M. Orfila states that Stramonium acts with more force on the brain than Belladonna, and produces more furious delirium. Stramonium smoked like tobacco is a popular remedy for the cure of asthma. Its use in this way has been derived from the East Indies, where other species are used for this purpose. It is the root and lower parts of the stem which are so employed, and the smoke excites a sense of heat in the chest, followed by copious expectoration, and sometimes attended with temporary vertigo and drowsiness. The seeds have the same nauseous bitter taste as the leaves, and in them Brandes discovered an alkaline principle, called Daturia, combined with an excess of malic acid. It is in the form of colourless crystals, inodorous, and when first applied to the tongue is bitterish, but afterwards of the taste of tobacco; its action is poisonous.

Woodlice in Mushroom Bed (E. Watson).—Your only safe plan is to entrap the pests. There are various ways of destroying them, the most wholesale plan being to place some pieces of boiled potatoes near to the places they infest and cover with a little hay, and in the morning pour boiling water over the hay, so that the baits must be laid where no injury will accrue to the Mushrooms by the scalding water. Another plan is to wrap a boiled potato in a little hay very lightly, and place in a flower pot laid on its side near to where the woodlice congregate or commit their depredations, and the following morning shake the pests from the hay, in which they will be secreted about the bait, into a bucket of boiling water. Repeat for a time, and the pests will be reduced so as to do very little injury. Parsnips boiled nearly soft, cut into slices, and dressed with arsenic form deadly baits. These, if placed where the insects abound, will reduce their numbers considerably. It is, of course, necessary to so place the poisonous baits that no accident can possibly arise by their misuse.

Extending Vine Border (J. P.).—We should make the addition at once to those Vines from which the fruit has been cut; but if the border space to be occupied exceeds 6 feet, we should only extend the border half the distance this year, completing it another season. Chop down the edge of the existing border until you find the roots, and if a few of these are cut smoothly off no harm will be done, but probably the reverse, as it will result in a multiplication of fibres. We should mix no manure with the loam if it is good; if poor, an addition of a seventh part of well-decayed and partially dried stable manure would be advantageous. To each load of loam you may add a bushel of crushed bones, with about two bushels each of crushed lime rubbish and wood ashes. The soil should be worked well to the face of the border,



and the pruned roots made firm rather than light, and supported if the whole space is not occupied with a wall of turf. Be careful that the soil is not too wet when used, neither must it be dry, but just moist enough to be used pleasantly as if you were potting plants with it. If the work is done now the Vines are in leaf fresh roots will form at once and be ready for active work in the spring. At the same time you had better consider whether it would not be advisable to remove some of the surface soil from the border down to the roots, yet without seriously disturbing them, adding fresh compost, and covering the whole surface with manure. The condition of the border and the state of the Vines must be your guide in this respect. As soon as the fruit is cut from the late Vines complete the work. If shortening the roots should cause the slightest signs of the foliage flagging, water the old border well and syringe the Vines occasionally for a week or more if needed.

**Destroying Caterpillars (A. Mason).**—We have seen excellent results by dusting the plants of Cabbages and Winter Greens with soot. Caterpillars can also be destroyed by first making them wet, then dusted with hellebore powder applied through a dredger like a pepper-box, but with larger apertures through which it can pass freely; it then adheres to the leaves and caterpillars, and does not leave many of the latter alive. The hellebore can be mixed with water and applied in the form of "tea" with the syringe. Its use is not recommended when the produce is advancing to a size ready for gathering.

**Destroying Weeds (C. Dixon).**—Perhaps the paragraph you refer to is the following; if not, it may possibly afford you the information you require. Where there are but few weeds upon the walks they are best handweeded, but where they are very green they may be destroyed with coarse common salt applied during dry hot weather, enough being given to whiten the surface. Boiling water freely applied through a rose watering pot on a sunny day will do much towards clearing walks and pavements of weeds, and the remedy will be more effective and lasting by adding powdered arsenic at the rate of 1 lb. to twelve gallons of water. As the arsenic is a strong poison it should not be used where fowls or game have access to the walks, or they may be poisoned with the grit they pick up. Soda boiled in water at the rate of 3 lbs. to six gallons of water is also very destructive to weeds. Crude carbolic acid at the rate of 1 oz. per gallon of cold water and carefully distributed over the walks is perhaps the simplest and best remedy of all for both weeds and mosses. Whatever is used, care must be taken to ward it off with sloping boards from both the tops and roots of the Box edgings as well as the turf.

**Turf from Bog (Irish Subscriber).**—If the "dry turf mould from the surface of a bog" has been exposed to the air for a considerable time and sweetened it will be useful for mixing with the strong loam of flower beds, as, being composed of vegetable matter, it will act as a mild manure and also improve the texture of the soil mechanically.

**Polygonum cuspidatum (Idem).**—Though this is quite hardy, and when in good condition a distinct ornament for the lawn, we should scarcely expect it would show to advantage in a position exposed to violent winds. We have never seen it so fine as when sheltered by shrubs and trees.

**Cheap Structure for Stove Plants and Cucumbers (O. Hardy).**—Your letter shall have our attention, and a cheap and useful pit will be described perhaps next week.

**Single Dahlias (J. B.).**—The flowers are bright, varied in colour, and attractive; and though the varieties are worth preserving we suspect they possess little or no commercial value, as not one of them, we think, would win a certificate at a National Dahlia Show, or from the Floral Committee of the Royal Horticultural Society.

**Coal Ashes for Earth Closets (Inquirer).**—The same post that brought your letter brought us the means of answering it. In the circular accompanying Morrell's Patent Self-acting Ash-closet system, which appears excellent, we find the following extract from Dr. Stockhardt's "Chemistry of Agriculture." "COAL-ASH.—Notwithstanding that this ash is frequently so little valued as to be thrown away, it deserves to be made use of in agriculture, in the first place because it contains, besides small quantities of alkalies, lime and sulphuric acid (gypsum), consequently direct sustenance for plants; in the second place, because from the same circumstance, as also from the clay it contains, it has the power to deprive putrefying substances of their odour, and to fix their ammonia, so that it cannot evaporate." We also find an extract from the "Quarterly Review," namely—"A correspondent of the 'Paris Journal of Agriculture,' seeing the amount of ashes thrown away annually, and considering that Sir Humphrey Davy and other chemists have found by analysis that ashes contain many substances which contribute to vegetable life, such as sulphate of potash and lime, various compounds of acids and minerals, carbonate of lime, alumina and silica, has made some interesting experiments. In the autumn he filled three flower pots with coal ashes, without any admixture with any other substance; in the one pot he sowed Wheat, in the other Oats, and in the third Strawberry seeds. The pots were then placed in a garden and left to themselves. In the month of March the plants were in a very thriving condition, and in April were luxuriant. The Wheat and Oats ripened perfectly, the grains being large and heavy, and the straw, in the case of the Wheat, 55 inches, and that of the Oats 43 inches high. The Strawberry plants continued to flourish until October, when it was necessary to transplant them; and after being planted out on the open ground, they succeeded so well that the writer says they surpassed all other seedlings." The reason of the Strawberries succeeding may be attributed to the probability that they would produce a large number of fibrous roots in the ashes, and the more of such roots the better the plants would grow when placed in good soil. There is not a doubt that ashes from earth closets are good for applying to land, and for heavy soils they are particularly valuable.

**Sulphur-and-Lime Preparation for Mildew (E. Belton).**—Perhaps the following may answer your purpose—at any rate, it is worth trying. Take a pound of flowers of sulphur and a pound of quicklime powdered, add them together with sufficient water to form a paste, add a gallon of water, put the whole in an iron saucepan or kettle, and boil for twenty minutes. When cool and settled pour off the clear liquid and store it in a bottle. Use at the rate of one-quarter of a pint to 3 gallons of water, and thoroughly wet the whole of the wood and leaves with the mixture, repeating the application if needed.

**Names of Fruits.**—Correspondents sending fruit to be named should enclose their names and addresses (not for publication) with the fruit,

whether they send a letter by post or not. No more than six specimens can be named at one time, and surplus fruit cannot be preserved for naming in future issues. Pears should be sent when approaching ripeness, as hard green examples of dessert sorts are not in condition for naming, though they may be occasionally identified. (O. D.).—1, Catshead; 2, Boston Russet; 3, Wykeham Pippin; 4, Court of Wick. (Lady King).—Your fine Apple is reserved for further careful examination, and in the meantime we shall be greatly obliged if you can favour us with any particulars relative to the history of the variety, also if it is known by any particular local name. (J. M.).—2, Specimen undeveloped; 3, Wyken Pippin; 4, Lord Grosvenor. (H. J. J.).—A Dumelow's Seedling and Calville Blanche. Pears.—1, Knight's Monarch; 2, Passe Colmar; 3, Beurre Sterckmans; 4, Glou Morceau. (R. S., Ayrshire).—No. 4 resembles the Lothian Pippin, the others are probably local sorts that have never had any authoritatively recognised names, and are very inferior. (T. S.).—Calville Rouge d'Été. (H. D.).—Transcendent Crab. (J. Hartland).—No. 1 is undoubtedly Williams' Bon Chrétien, the other is over-ripe; it is perhaps the summer Bon Chrétien. (J. C. W. and Sons).—A small fruit of Tom Putt.

**Names of Plants (G. H., Dorking).**—The true name of the Bouvardia is jasminiflora, and the other name is no doubt a mis-rendering of that. The first name applies to the flowers alone, and the second to the whole plant. (R. A. H.).—Prunella vulgaris, commonly called Self-heal. (W. D.).—Eucomis punctata. (J. R.).—Verbascum virgatum. (N.).—Stanhopea insignis lutea. (York Villa).—The specimen you sent was so completely withered in the wool with which it was packed that we cannot give the slightest idea respecting its name. Orchids require very careful packing, as the flowers of many are extremely fragile. If you send another flower in a small tin box, with damp moss instead of wool, your plant shall be named. (A. Cole).—The Pancratium which you say has been sent has not been received. (J. W. L.).—Oncidium ornithorynchum. (Reader).—1, Pyrethrum uliginosum; 2, Chrysanthemum maximum; 3, Euphorbia exigua; 4, Taxus adpressa.

# COVENT GARDEN MARKET.—SEPTEMBER 24TH.

PRICES remain about the same. The supply of soft fruit is now almost over. The market is well supplied with home-grown Apples.

## FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. .. .	½ sieve	2 6 to 4 6	Oranges .. .. .	100	8 0 to 12 0
Chestnuts .. .. .	bushel	0 0 0 0	Peaches .. .. .	per doz.	3 0 8 0
Cobs, Kent .. ..	per 100 lbs.	50 0 60 0	Pears, kitchen ..	dozen	0 0 0 0
Currants, Red ..	½ sieve	0 0 0 0	„ dessert .. ..	dozen	1 0 3 0
„ Black .. .. .	½ sieve	0 0 0 0	Pine Apples English ..	lb.	4 0 6 0
Figs .. .. .	dozen	0 6 1 0	Plums .. .. .	½ sieve	0 0 0 0
Grapes .. .. .	lb.	0 6 2 6	Strawberries .. ..	lb.	0 0 0 0
Lemons .. .. .	case	15 0 21 0	St. Michael Pines ..	each	0 0 0 0

## VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes .. ..	dozen	2 0 to 4 0	Lettuce .. .. .	dozen	1 0 to 1 6
Beans, Kidney ..	lb.	0 3 0 0	Mushrooms .. ..	punnet	0 0 1 6
Beet, Red .. ..	dozen	1 0 2 0	Mustard and Cress ..	punnet	0 2 0 0
Broccoli .. .. .	bundle	0 9 1 0	Onions .. .. .	bunch	0 3 0 4
Brussels Sprouts ..	½ sieve	0 0 0 0	Parsley .. .. .	dozen bunches	2 0 3 0
Cabbage .. .. .	dozen	0 0 1 0	Parsnips .. .. .	dozen	1 0 2 0
Capsicums .. ..	100	1 6 2 0	Potatoes .. .. .	cwt.	4 0 5 0
Carrots .. .. .	bunch	0 3 0 4	„ Kidney .. ..	cwt.	4 0 5 0
Cauliflowers .. ..	dozen	2 0 3 0	Rhubarb .. .. .	bundle	0 4 0 0
Celery .. .. .	bundle	1 6 2 0	Salsafy .. .. .	bundle	1 0 0 6
Coleworts .. ..	dcz. bunches	2 0 4 0	Scorzoneria .. ..	bundle	1 6 0 0
Cucumbers .. ..	each	0 2 0 4	Shallots .. .. .	lb.	0 3 0 0
Endive .. .. .	dozen	1 0 2 0	Spinach .. .. .	bushel	2 0 4 0
Herbs .. .. .	bunch	0 2 0 0	Tomatoes .. ..	lb.	0 6 0 0
Leeks .. .. .	bunch	0 3 0 4	Turnips .. .. .	bunch	0 4 0 6



MICHAELMAS.

WAYS AND MEANS.

THE near approach of Michaelmas marks the most important period of the year for the farmer. He is brought fairly face to face with results, for another twelvemonth's work is at an end. The crops sown in the autumn of last year and the spring of the present year are for the most part matured and cleared from the land, most of the young live stock is weaned, and poultry-rearing is at an end till moulting time is over. Well is it therefore now to carefully consider results in relation to the arrangement of the work of the coming year, in order to see what to repeat, what to alter, and how improvements may be effected with safety. Hard times teach stern lessons, and it must be patent to the most sluggish minds that farming on the lines of a past generation leads to failure and bankruptcy very frequently. We must make every stroke tell home; we must be apt to learn and prompt to apply every lesson of real improvement and progress. What, it may be asked, has all this to do with the home farmer, whose legitimate work is to provide an ample supply of farm produce for consumption at the mansion of his lord and master? Like so many other things, such a line of argument in relation to the duties of the home farmer has become obsolete, for now he but too frequently has farm after farm thrown upon his hands by disheartened or bankrupt tenants, which only a few years ago the only



difficulty about re-letting would have been the selection of the most suitable man from the numerous applicants for every farm that fell vacant. Truly agents may look back with a sigh to that golden easy-going time, and wonder if they will ever see the like again.

To farmers generally the burning question of the moment is Wheat-growing. With Wheat at 4s. 6d. per bushel we may well hesitate to sow as much as heretofore. But there is certainly another side to the question, and that is, Can we effect no improvement in Wheat culture? Is the quantity of grain and straw per acre what it ought to be? If we put faith in the statement of Major Sergison about his Wheat crop, and compare it with general results, we are bound to own that it is not. The old system of bare fallow and farmyard manure in Wheat culture must be given up, and if the present low price of Wheat only tends to that it will not prove an unmixed evil. Put the cost of production of the old dressing of thirty cartloads of farmyard manure at 90s., add to it that of cartage and spreading, compare it with the 33s. per acre which the artificial manure cost which was used by Major Sergison, and it will not only appear an extravagant method of culture, but it will also bring in question the saying—nay, it is much more than a saying, it is an article of faith—that the profit from live stock lies in the manure. In connection with the question of the comparative value of manures and the cost of application to the land we have the heavy item of men, horses, and carts; and any improvement that leads to a reduction of expense in this direction ought certainly to receive most careful attention. These are among the things that drag the farmer down, and if he is really in earnest in striving for improvement every minor detail of expense must be checked. Wheat-sowing will soon be in hand now, and we therefore reprint Professor Jamieson's prescription for the artificial manure which was used by Major Sergison for his Wheat:— $\frac{1}{2}$  cwt. nitrate of potash,  $1\frac{1}{2}$  cwt. nitrate of soda,  $\frac{1}{2}$  cwt. steamed bone flour,  $\frac{1}{2}$  cwt. superphosphate,  $\frac{1}{2}$  cwt. coprolite, half to be used in the autumn, and half for a spring dressing.

We have used these manures for grass, roots, and cereals this year, and we certainly have ample reason to recommend them. The crop of hay both of Meadow Grass and of Rye Grass and Clover is above the average. Red Square-headed Wheat was large and heavy in ear and grain, and the straw was upwards of 5 feet in height. Oats were equally good. Of field Potatoes we grew Early Rose, Snowflake, Magnum Bonum, and Scotch Champion. All were alike excellent, the entire crop being a remarkably heavy one, free from disease. Mangolds are, however, our most remarkable crop. The whole of the seed could not be sown at once, and the earliest sowing having the benefit of a shower the germination was quick, and the plants were soon visible; but the drought checked the growth and flea laid hold of the weak foliage. The later-sown seed made no sign for a long time, but when the rain came the effect was magical. Plenty of plants came, with very few blank spaces. Hoeing and thinning followed in due course, and now the crop is so even that it is difficult to distinguish any difference without a very close inspection. The sort grown is Sutton's Mammoth Long Red, and although the weight per acre can hardly equal that of a wet summer, yet it bids fair to approach it. For the roots some farmyard manure was used, as well as the artificial manure, and here we were probably right, for farmyard manure contains so large a per-centage of moisture that it must contribute materially to the health of root crops in such a hot dry summer as we have had this year. We advocate no sweeping measure of reform in farming, but a cautious progressive system of improvement in everything where improvement appears possible. Swedes are under-sized, and there were so many failures that white Turnips were sown to fill them. We have long ceased to depend much upon this crop, giving preference to the heavier and more certain one of Mangolds, about using which early in the season there need be no hesitation if pulping and mixing with chopped straw be done. The fermentation after mixing removes the acrid principle from the Mangolds so thoroughly that there is no risk of diarrhœa being caused in the animals, and the straw is rendered more digestible.

(To be continued.)

#### WORK ON THE HOME FARM.

*Horse and Hand Labour.*—Frequent showers upon the warm soil have quickened growth so much that late-sown Turnips have outgrown the thinness and become much crowded. Thinning and hoeing must be pressed on and finished as soon as possible to afford space for growth while the weather continues warm. The germination of Trifolium and Rye seed was so quick that green growth was visible in a week from the time of sowing. Men are now kept steadily at work upon the hedge-clipping—no light matter where there are several miles of hedges—to have all trim for winter, and because the cutting is easier now than it is after the leaves fall. Dung mixens, too, are being turned and got ready for the October carting. Paring and burning is still being done on favourable days.

Field Potatoes have been taken up in capital condition. Strong-growing sorts like Magnum Bonum and Champion had the haulm cut off

as soon as it was quite evident that growth had ceased and some of the foliage became yellow; they were then left for a week or ten days and then ploughed up with the soiling plough. This was rather a rough-and-ready but most expeditious process, most of the tubers coming to the surface, and the remainder were got by passing the harrows over the surface after the first picking. If late Potatoes have been left with the haulm uncut under the erroneous idea that the tubers would ripen better, fresh growth has been induced by the rain—growth not only of the haulm, but upon the tubers which have put forth shoots bearing another crop of worthless tubers, and the true crop is thus converted into seed and spoiled.

*Live Stock.*—Advantage should be taken of sales of cows of known excellence to fill vacancies in the herd. However careful and pains-taking one may be, such vacancies will occur either from barrenness, debility, or old age. We always try to dry off faulty cows early enough in summer to enable them to lay on flesh so as to be ready for the butcher by the end of the present month. Cows of four or five years old consume so much food that to fatten them in the yard or stalls is unprofitable. Litter is still being cut and carted to the yards, which must now be got ready for the stock should the weather set in cold and wet. Before putting down litter see that the drains are in working order; this is a matter often overlooked. We have seen elaborate buildings of a costly description enclosing yards where the cattle were standing knee-deep in water in midwinter, a severe trial for the health of the strongest beasts; but they frequently take possession of the lodges, driving out the weaker animals to an exposure, which often leads to disease and death. No bad effects are visible at the moment, but it occurs later on when the cause is very likely forgotten.

#### FILLING A SILO WITH MAIZE.

An interesting experiment, says a daily contemporary, was conducted the other day on the Peckforton estate by filling a specially constructed silo with Maize, the product of an acre and a half of land. The rooks, it is said, nearly destroyed the first crop, which was sown in drills; the land was then sown broadcast, a luxuriant crop of Maize averaging quite 18 tons of green food to the acre being the result.

The conviction has long been entertained by a few shrewd country farmers that Maize would pay as a fodder crop provided a remedy for the destructiveness of the rooks was brought into force. But again we are afraid that the Maize cultivator will have more to contend against than rooks. The season has been everything that could be desired; although too hot and dry in some quarters, in others everything was in favour of heavy green crops. The Maize on the above estate was cut, tied into bundles of 25 lbs. each, carted to a shed where it was put through a Chandler's chaffcutter, and transferred to the silo; a  $\frac{1}{4}$  lb. of salt being mixed with each 1 cwt. of chopped Maize, not for preserving purposes, but to make it sweeter for the stock. The silo is 12 by 15 feet, and is built entirely above ground.—M. S.

*AMSTERDAM AGRICULTURAL EXHIBITION.*—We are informed that Messrs. James Carter & Co., High Holborn, London, have been awarded the following prizes for their productions at this exhibition—namely, a Gold Medal for Grass seeds in growth; First Prize of Honour for Pulse—i.e., Garden Peas, Beans, &c.; First Prize of Honour for samples and specimens of Grass and Clover seeds.

#### OUR LETTER BOX.

*Stubble Turnips (J. J. S.).*—For stubble Turnips sown between the lines of sheaves the double-breasted plough is not used at all. With an ordinary plough as wide a strip of land as can be spared is ploughed, the seed sown broadcast at once, and the harrow passed over it as many times as is found necessary to well cover the seed. By this method of sowing on the flat and not in ridges raised by the double-breasted plough, excellent roots of a useful size are obtained in an ordinary season. With the early harvest of this year a crop of really fine roots will be had, especially where a dressing of artificial manure has been given.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain
	Barome- ter at 32° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1884. September.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday ..... 14	30.115	64.4	61.4	N.E.	60.4	73.4	55.9	103.6	49.7	—
Monday ..... 15	30.060	64.1	61.8	E.	60.5	76.1	55.2	116.2	48.7	0.017
Tuesday ..... 16	30.131	67.0	62.9	S.E.	61.5	76.7	61.8	110.8	56.6	—
Wednesday .. 17	30.261	68.7	65.2	N.E.	62.1	81.2	58.1	105.8	52.3	—
Thursday .... 18	30.395	67.5	62.7	N.E.	62.5	81.5	59.2	116.6	52.4	—
Friday ..... 19	30.316	58.9	57.2	N.E.	62.7	68.6	54.2	99.8	49.4	—
Saturday .... 20	30.153	61.5	57.1	N.E.	61.9	70.2	52.6	102.7	44.6	—
	30.204	64.6	61.2		61.7	75.4	56.7	107.9	50.5	0.017

#### REMARKS.

14th.—Generally cloudy, but some sunshine.  
15th.—Fair and pleasant, little sun and spots of rain.  
16th.—Fine morning; fair afternoon.  
17th.—Fine and hot, but rather hazy; close evening.  
18th.—Fine, bright, and hot.  
19th.—Cloudy morning, bright afternoon; much cooler.  
20th.—Fine, bright, and warm.  
Another fine week, several degrees warmer than the previous one, and considerably above the average.—G. J. SYMONS.





2	TH	
3	F	Essex Field Club Cryptogamic Meeting (two days).
4	S	
5	SUN	17TH SUNDAY AFTER TRINITY.
6	M	
7	TU	Crystal Palace Hardy Fruit Show (five days).
8	W	International Potato Show, Crystal Palace (three days).

### BEDDING VIOLAS.

**N**OTHING is more distasteful to a true gardener than to see flower beds devoid of vegetation; therefore it should be the aim of all to avoid this. With the waning months of the year we see that the summer occupants of the beds in the flower garden are waning too. Their bright appearance will soon be past, and we must seek for some other plants to occupy the vacant places. For making a good display no plants seem more really useful than these Violas; indeed, none can boast of a more extended flowering season than these, commencing in the earliest springtime and continuing until quite late in autumn. There is no reason why Violas should not be in extensive use in almost every garden, since they adapt themselves to a great variety of circumstances, which renders them welcome additions to summer bedding operations as well as in spring. To the latter, however, I wish now to draw attention; and I trust my remarks, besides being seasonable, may prove serviceable. There are numbers of varieties of bedding Violas which far eclipse older and more straggling growers, and of which it is impossible to write or say one word of praise too much. They are, however, often taken in hand in such a manner as to bring them into disrepute. Not unfrequently do we hear that "they are no use to me—they flower too late for us" from gardeners who either do not recognise their requirements or have employed the wrong material. Those who use bedding Violas do not require a host of varieties in many shades of colour, but rather a few really good free-flowering and distinct sorts calculated to produce a good effect. The first thing to decide is, What are the earliest and best? These I will give in the course of my remarks, for many grave errors are committed by selecting wrong varieties, and which may be just in their prime when you require the beds for summer occupants. Thus the spring effect is marred and, to say the least, disappointing, which by judicious selection might be avoided.

To ensure good strong plants and plenty of early blooms in spring early autumn planting is essential, and no better time can be selected than the first or second week in October. The earlier the plants are in their respective places the sooner will they become established, which is a sure guarantee of early bloom. Cuttings which were inserted during July will be now well rooted and fit for removal, planting them rather deep and firm. The frequent use of the hoe is of great help to them throughout the autumn months, and cannot be too strongly recommended. Another important item is mulching or earthing the stems as they grow. The best material for this purpose is leaf soil well decayed, macadam grit, and the burnt ashes from garden refuse, which latter must be kept dry till fit for use, so as to preserve the ammonia it contains. I have long proved the efficacy of this mulching during the autumn, and it is also adopted by my friend Mr. Wm. Dean of Walsall, an ardent florist of the old school, who by his extensive experience in

such matters is one of the best and most reliable authorities of the present day. By these continued mulchings the young shoots are preserved from frost; and not only this, for as the shoots are abundantly formed below they speedily emit roots, and are thereby materially strengthened. This is one of the great points in favour of early planting. Violas prefer a generous though not too rich soil, and a position not too exposed is conducive to their well-being.

For the convenience of those who may be desirous of making these a feature in spring beds, I have arranged them in groups according to colour. Commencing with white-flowered varieties, Mrs. Gray may be said to hold a leading place. It is of compact habit, a free and continuous bloomer, pure white, fragrant, markings very few and faint. Jeffreyana is of good compact growth, free-flowering, and very early. Lady Polworth is an excellent variety, free from markings, very early and continuous bloomer, and a most useful white. Pilrig Park is an older variety whose merits are well known. Countess of Hopetown is a very superior Viola in every respect, and holds a position second to none amongst whites. It is a most compact grower, very sturdy, early, and remarkable for its free and profuse-flowering qualities. This must come to the front before long. Without making the list too long I may say that Purity is an excellent variety, producing abundance of flowers early, but they are smaller than others. Beyond these are Vestal, white self, and Champion, the last-named best suited for summer beds.

Amongst purple flowered varieties Queen of Purples ranks A1. It is a grand variety, of compact habit, and a wonderful bloomer. The colour is rich and telling, and it is an early and continuous bloomer. Next comes Cliveden Purple compacta, which is a seedling from the old favourite Cliveden Purple, but so remarkably distinct and compact, its richer colour, larger flower, and general excellence being all that could be desired. Mrs. Charles Turner is also an excellent variety. The colour is rich blue-purple, very distinct and beautiful, very early and continuous bloomer. Other good varieties in this group are Le Grand, Paragon, Queen of Violets, and Crimson Gem. The last name is a misnomer, the colour being purple with a shade of brighter colour in it.

The lilac-flowered varieties are not so numerous as might be wished, still we have some very good and distinct sorts, all of which are very pleasing and effective, their soft delicate shades of colour making a most desirable change. Elegans is a remarkably acceptable early-flowering kind, with pale lavender lilac flowers, very early, free, and a good grower. This makes an excellent bed. Then we have Duchess of Sutherland, which is a first-class all-round variety, which should find a place everywhere in gardens, the colour bright lilac, and very pleasing; good vigorous habit, free, early, and a continuous bloomer. Princess Teck is a pleasing soft lavender, and a first-rate variety. Fairy Queen resembles the Duchess in habit, flowers a shade lighter, an excellent variety; and the last I shall mention of this section is Queen of Lilacs, which is the most profuse bloomer of all, with a good constitution, and very early kind, and when seen *en masse* is grand.

Yellow-flowered varieties form an extensive group; many of the older sorts are now seldom seen, they having given place, and justly, to highly improved forms. These modern productions are remarkable for their dwarf compact growth—so dwarf, in fact, in some cases as to render them fit companions for blue Lobelias. The best are Queen of Spring, clear light canary yellow, very early and profuse bloomer; Golden Queen of Spring, which possesses all the qualities of the former, but of a deeper colour. Yellow Dwarf is a good name for a variety which is the dwarfiest and most floriferous of all yellows, very early, clear bright yellow, and free from marking. This is an excellent kind; beside which we have excellent varieties of first-class merit in Ardwell Gem and Brilliant, both telling varieties as well



as early and heavy bloomers. All the varieties here cited may be depended upon as sure to give satisfaction.

The blue varieties, another important section, are also numerous; but by citing only the very best the reader will not be confused by numbers, for I have often found what a great drawback it is to have too many kinds to select from, and also realised the difficulty of discarding intermediate shades. A long way ahead of all is True Blue (Dean), the colour clear and good, habit sturdy and compact, and certainly a marvel in the Viola field; early and continuous, it is unequalled, and no garden is complete without it. Tory is a full-flowering and well-known variety, which must not be passed by. Then in Holyrood we have a bold handsome flower, rich in colour and specially suited for summer beds; and in Lord Darnley, a seedling from Holyrood, we have much richer and deeper-coloured flower. The colour, a rich velvety violet blue, makes a splendid mass. This is a grand variety and a decided acquisition. Forerunner is an excellent sort, flowers deep rich violet-blue; and finally we have Royal Visit, a most telling and distinct Viola. These are the very best, and each distinct in itself.

One other group yet remains which contains some lovely varieties. These are recognised as Fancies, holding a similar position amongst bedding Violas to the section of Pansies under the same head, and distinguished by their variously coloured flowers, form a highly attractive group at present very little known. These are strongly recommended, and can scarcely fail to win a popularity which they well deserve. The most worthy members are Countess of Kintore, a variety sufficient to satisfy anyone in search of novelties of sterling merit. Its flowers are pale greyish purple, with large white blotches, early and continuous bloomer, and a grand variety. Harlequin has smaller flowers of rich rosy purple, in the lower petals blotched with white, the top petals white. This is a charming variety, and very distinct. Duchess of Albany, a new variety, has pale lilac purple flowers, with greyish-white markings; Columbine is white, margined with lilac, very distinct and pretty. There are others equally good and distinct, but the colours of these will suffice to prove their variability and their right to this section.

I do not wish the exclusive use of Violas as bedding plants; that would be bad taste indeed. My ideas of producing effect are not by numbers of one plant, for this would soon be equally as monotonous as a glare of scarlet Pelargoniums, and should be avoided. Rather aim at pleasing combinations without verging upon formality, and with a variety of plants; for example, a bed thinly planted with white Violas, with *Anemone fulgens* dotted here and there, or *Anemone appennina*, or a bed of blue Violas, with scarlet Tulips dotted. Or, again, lilac Violas with *Cheiranthus Marshalli* or *C. alpinus*; or I wonder who would object to a bed of white Violas, with a spike or two of single red Hyacinths and a sprinkling of Forget-me-nots? Or leaving Violas out of the question for a moment, I wonder who would disagree with a bed of white and crimson Daisies, dotted either with *Myosotis*, Siberian Squills, or *Chionodoxa*? Again, Aubrietias might form an excellent groundwork for yellow Tulips. Such combinations are pleasing and attractive and, dare I add, edifying. We want more of this style of arrangement, which, I venture to predict, must be the gardening of the future. It is far more harmonious and natural than an assemblage of scarlet Pelargoniums or carpet beds.—E. JENKINS.

#### AUTUMN THINNING OF FRUIT TREES.

THE disastrous frosts we experienced towards the end of April have caused many a fruit-room to be but poorly filled this autumn. As an example (and I am afraid there will be many such) I may state that our orchard trees have not yielded one bushel where we had ten last year. The hot summer has hastened the maturing of Apples to some extent, and this, together with a light crop, will enable us to get all safely housed a week or more earlier and in much less time. Now I have been thinking that it would be well for many of us if we were to devote a few days' labour thus saved to the thinning-out of the overcrowded branches. I then

made up my mind, and would advise others, not to delay this operation till winter when there will be less to do, but to make an effort to do it at once. No one who has Peach trees to manage doubts the utility of cutting out the bearing wood as soon as the crop is gathered, so that the young wood may get thoroughly ripened. And I think it would be a step in the right direction were all our fruit trees similarly treated, so that winter pruning would be reduced to a minimum. More than one reason can be advanced in favour of our doing so, but I will only mention two. In the first place the operation is much more likely to be done effectually, because we can decide upon how much wants removing better while the leaves are on the branches than the inexperienced would be able to do after they have fallen. Too many of us are loth to cut out healthy shoots if there is anything like room to have them, but when we come to regulate them with their leaves on them, we must be satisfied indeed if we have them crowded; for if we have not sufficient room for this year's leaves, where are we to find room for next year's shoots and leaves?

The second reason is equally simple. The removal of all superfluous branches admits light and air for the better ripening of the wood. The result would be firmer branches, with plumper fruit buds, stronger blossom in spring, and (weather permitting) in the autumn a fair crop of better fruit. Let those, then, who have old orchard trees mount the ladder, saw in hand, and thin out the crowded branches with unsparing hand. The late warm summer has left fruit trees with remarkably fine fruit buds, and should we be favoured with a fine spring the crop is sure to be a heavy one. Let us consider that with fair crops we have generally better fruit, and that by proper thinning we in a measure prevent an over-crop, a fair crop every year being the end to be aimed at.—A WORKING GARDENER.

#### ARAUCARIAS AND WELLINGTONIAS IN THE WEST OF SCOTLAND.

As no one has replied to your Ardarroch correspondent I write a few lines. The Araucaria at Ardarroch, Garelochhead, is undoubtedly a most beautiful and very perfect specimen. It is not, however, unequalled in the West of Scotland. Not in girth, as that at Rozelle, Ayr, planted in 1839, when I measured it in 1879 had a girth of 4 feet 10 inches 5 feet from the ground; not in rapidity of growth, as the plant at Lainshaw, Stewarton, planted in 1852, is now 3 feet 9 inches in girth 5 feet from ground, and about 40 feet in height; nor can it excel in beauty of symmetry the specimen at Ardkinglass, Head of Loch Tyne. Here in the garden, at the head of an artificial lake, and at the opening of one of the noblest of Highland glens, with a deep defile in front and grand mountains above, this most beautiful Araucaria, with a girth (5 feet from the ground) of 3 feet 8 inches, rises to a height of about 40 feet, and is altogether worthy of a spot where loveliness and grandeur are singularly united.

MODEL WELLINGTONIAS.—The Californian Giant Tree (*W. gigantea*) has an appetite befitting a giant. No thin soil, however good, will content it. Whatever the nature of the soil the subsoil must be strong and cool. At Lanfine, Ayrshire, on the north side of the Valley of the Irvine, and 500 feet above sea level, it grows admirably. Two trees were planted there in 1856 in a part of the park that was at one time a garden. Neither of them are crowded in any way, and have thus developed their natural proportions. They are not mentioned by me as being remarkable for height or girth, but as being typical specimens of the enormous strength of trunk and lighthouse-like proportions which belong to what is now known all the world over as the "Big Tree." Both trees are of the same height, 28½ feet. The girth of one is 9 feet 6½ inches at its base, and 4 feet 9½ inches, 5 feet up. The other is 10 feet 11 inches in base, and 5 feet 3 inches, 5 feet up. It will be noticed that at both the girth of bole at the ground is more than twice the girth 5 feet up, also that the height of the tree is not three times its girth at the ground. I need not say that both trees are in perfect health, and that both are most luxuriantly clothed from top to foot with side branches. Am I wrong in designating them typical specimens of Wellingtonia?—DAVID LANDBOROUGH.

#### VIOLETS.

BY to-day's parcels post I have sent for your inspection and opinion a buttonhole each of the following Neapolitan Violets, with their own foliage, taken from the open ground, therefore under the same cultural and climatic conditions. The varieties sent are New York (*V. odorata pendula*), Marie Louise, Marguerite de Savoie, Marie Louise (old variety), Venice, and De Parme.

There is great similarity between New York, Marie Louise, Marguerite de Savoie, and Venice; but I find them distinct in some particulars, such as profusion and duration of blooms, which only become apparent by careful observation under cultivation. Marie Louise is the old and true variety, it being a little paler in colour and with a more distinct white eye, with or without a very faint dash of red; whilst De Parme is a much earlier better-habited plant than the old Neapolitan, the blooms being larger, deeper in colour, and with a clear white eye, and is the best of the



Neapolitans for pot culture. There are two distinct types—New York, Marie Louise, Marguerite de Savoie, and Venice form one; Marie Louise (old var.) and De Parme another. All are autumn and winter bloomers.

I may state that Count Brazzi's Neapolitan belongs to the same type as New York, &c., and is a winter and spring bloomer; whilst Neapolitan (I have two forms of it), Duke of Edinburgh, and Duchess of Edinburgh belong to the other or lavender blue, conspicuous white-eyed type. None of the last four is in bloom, in fact they are winter and spring bloomers.

I also send Violet Patrie, which is of a different race altogether. Its flowers are deep bluish-purple; one of the most double, prettiest, and sweetest of Violets; neat in habit, and blooming from late summer to spring. The white Neapolitan (Count Brazzi's) is not in flower or likely to be for some time; and the only other double in bloom is *Viola odorata rubra plena* var. Its footstalks are twice as long as the old variety, and the flowers are twice the size, the colour being rose.—G. ABBEY.

[There is undoubtedly "a" great similarity between the Neapolitan varieties sent, though all are beautiful; Violet Patrie is, however, very handsome, full, and rich in colour.]

### FORCING FLOWERS.

THE time is fast approaching when flower-forcing will have to be taken in hand as a part of ordinary routine work, and before that time is upon us it may be worth while to discuss some of the salient points to be attended to, and some of the difficulties to be attacked and overcome. I think the first point that wants clearing up a little is the term "forcing" itself, and the particular meaning we ought to attach to it. I believe I am safe in saying that to many people "forcing" conveys a meaning which represents an impossibility. They have this idea that all that is required in order to "force" plants into flower is so much heat, and an amount of moisture corresponding to that. Now this is an erroneous view. As a mere statement of fact plants cannot be "forced" into flower at all. Forcing is a process, which to be attended with any success, must commence, not at the end of the plant's year, but at the beginning; not at the time of its winter rest, but at the period of its quickening into new life in spring. The only really successful forcers are those who recognise this fact and act on it. That being so, it will be at once apparent to those who in past years have been attempting to force plants without having previously prepared them for the process that failure was to be expected. They had begun at the wrong end of the plant's annual life, and the plants were not ready to meet the wishes of its cultivator.

If it be asked, What is the use of stating these things now? I may answer that when this phase of the question is comprehended there is much less fear of failures throughout the winter and spring, because attempts to force imperfectly prepared plants too early in the season will be left out of the year's programmes, and more care will be taken to start home-prepared plants earlier for another season. In the matter of bought produce, such as Hyacinths, Tulips, and other bulbs, we have in a great degree to depend for success on the state of the previous season in Holland. If the bulbs have been early ripened so much easier will they be to force into flower. But no one would think of attempting to flower any other than early varieties—that is, sorts which make and finish their growth early in the season, leaving later growing ones for later flowering. Thus there is no difficulty in blooming Hyacinths at Christmas if we select such sorts as Crown Princess and Homerus, and to follow them, better varieties like Charles Dickens, King of Blues, Grandeur à Merveille, Von Schiller, &c., and just so with Tulips and Narcissus, select early sorts.

It is necessary to warn those who have not had much experience in forcing against employing too much heat. They imagine that the greater the amount of heat the quicker will the flowers appear. Now it is my experience that the more genial the temperature in the earlier stage the better the results. Too much heat invariably destroys the plants. After the flower spike and leafage has become thoroughly started a higher temperature does not do harm; but as a rule "slow and sure" is a safe axiom. Lily of the Valley is annually massacred in great quantities. People buy crowns or clumps, and perforce will have flowers early, only to find that the buds will not move, yet by growing on the same plants year after year they get into an early-flowering condition, and there is no difficulty whatever in having both flowers and foliage from November onwards, and even earlier if wanted. I have noticed the same early-flowering habit induced and perpetuated in many other plants which have been brought on in a good temperature and never checked by want of water. Lily of the Nile (*Richardia*) is an example of this, so are Azaleas such as *Narcissæflora*, and none of these require much heat to bring them into flower when wanted.

With home-grown plants such as *Pelargonium*, Roses, *Bouvardias*, Carnations, and in a less degree even *Chrysanthemums*,

very much more flower can be taken from one set of plants than it is at all common to attempt. Too generally when the first set of flowers has been removed from *Chrysanthemums* the plants are considered to be over, yet given high feeding and a little heat it is wonderful what an amount of bloom can be produced right down the stem of the plants. I may say that I have found a little heat judiciously applied to *Chrysanthemums* in cold and unfavourable weather to be of much use. There is no doubt that these can be well grown under very cold treatment, but a greater amount of flower can be secured by keeping the plant growing. And so with the other plants named; the same set may be flowered continuously all through the winter and spring months, if sufficient heat is given to keep them going on, and occasional applications of manure to keep up the stamina of the plants. But—and this is a matter of importance—the flowers as they become developed require to be removed, otherwise a standstill at once results. It is hardly worth while perhaps to enlarge on the importance of keeping all these quite close to the glass, especially through the weeks of midwinter, but it may be said that it is simply a matter of either success or failure. Of much importance also is the growing of plants in small pots and using a very simple compost. I do not doubt that plants can be well managed in good-sized pots, and with compost of a very mixed nature, but there is less danger of hurting the plants by any neglect when the former conditions are followed, and in fact the whole course of treatment is much simplified.—B.

### AUTUMN TREATMENT OF RASPBERRIES.

FEW small fruits that we cultivate are more generally neglected than Raspberries. It would be difficult to name any from which a heavier or more certain crop of fruit can be obtained, provided they are looked after and well cared for. The management of the Raspberry on the whole is comparatively easy, for when once planted they seldom fail, and very rarely die in whatever soil or situation they are planted. To have the best return possible from the plants for the labour required and the ground they occupy, attention is needed as soon as the fruit has been gathered. The old fruiting canes should at once be removed, so that light and air can reach the young canes which are required to bear fruit another year. Where the old canes have not been removed no more time should be lost, or the canes will fail to plump up their lower eyes, and thus fruit abundantly the whole or greater portion of their length. When the canes only fruit near their tops it is certain that they have been mismanaged, and air and light, which is of so much importance in thoroughly maturing the canes, have been excluded. The canes will fruit as well near their base as they will towards the top if the rows are sufficiently far apart, and the old canes removed directly the fruits have been gathered.

The young canes should be well thinned, leaving only those that are required to furnish the trellis for the following year; the canes being secured to the trellis, so that after-tying during the winter will not be needed. As soon as the canes have turned brown they may be shortened to the required length. There is no advantage gained by leaving this to be done during the winter; on the contrary, the lower buds plump very much when the necessary pruning is done some time before the foliage falls. Work of this description should always be attended to before the cold days of winter. At this season of the year a man will accomplish more than double the amount of tying than he would during cold weather. The annual dressing of manure may also be wheeled on before the approach of heavy autumn rains, or at the latest by the time the foliage falls, so that it can be pointed-in with a fork, to make the quarter devoted to these fruits look neat. I do not advise digging amongst Raspberries, but the ground may be pricked over, so that the manure can be partially hidden in positions where its appearance upon the surface is objectionable.—L.

### USEFUL TEA-SCENTED ROSES.

THE following estimate of Tea-scented Roses is not given from an exhibition point of view, but they are named as useful varieties for cutting. Where flowers are in great demand none is more useful or acceptable than good Tea-scented Roses; and what lovely and delicate tints of colour we now have amongst them. Three of the best are Madame Lambard, colour bright red early in the season, changing to a lighter colour in the autumn; Marie Van Houtte, yellowish white, edged and lined with bright rose; and Madame Falcot, apricot-yellow. These have given us the largest number of good useful blooms, "and still they come." Etoile de Lyon, deep yellow, is another very useful Rose; with one bloom nearly full blown, a bud by its side just opening, and a full-sized dark green leaf, what could be more lovely as a dress flower for a lady? The foregoing Roses named are very useful hardy varieties. William Allen Richardson, we believe, will be the buttonhole Rose of the future; the colour is deep orange-yellow, the edge of the petals changing to a lighter colour. This Rose has been noticed in the Journal several times this season, and it deserves all that has been said in its favour. Anna Ollivier, rosy flesh; Souvenir d'un Ami, deep rose; Madame Chedane Guinoisseau, lemon; Catherine Mermet, fleshy rose; Rubens, white, tinted rose; Perle des Jardins, orange-yellow; Homère, blush, edged with deep rose; Beauté de l'Europe, coppery yellow, all these have given a



succession of lovely blooms. Adam, flesh, and Madame de St. Joseph, fawn, shaded salmon pink, was very useful early in the season, but have not continued in a free-flowering state, but we have a few blooms occasionally. Cecil Brunner is a beautiful Rose, it forms its blooms (the colour of which is flesh, with salmon centre) in spreading clusters of two or three dozen; it is a grand summer and autumn-blooming Rose, and well adapted for massing in large beds. Madame Berard is a very strong-growing Rose; it is not very free-flowering, but what blooms we have had were extremely good.—A. YOUNG.

### TUBEROUS BEGONIAS IN BEDS.

So exceedingly hot has been the summer, day after day and week after week being cloudless, that it would have been a matter of surprise if these moisture-loving plants had grown freely and flowered profusely in beds in the open air in all gardens and districts. Where the soil is the richest and deepest, the rainfall the greatest, and the summer the coolest, there the plants have flourished the best during the summer that is now drawing to a close. In Ireland, Scotland, and the west of England the plants are the most luxuriant and the beds the most brilliant this year—a fact which disposes of the fallacy that is still indulged in by some persons, that these plants can only be well grown outdoors in the sunny south. They would appear to be very much like Celery and Asters in their requirements after being established in the beds, and previous to that they seem to enjoy much the same treatment as well-prepared Potatoes. Place tubers of the latter in small pots in heat, grow the plants until they are a foot or two high and need stakes to support them, allow the pots to be densely packed with roots, then plant. If strong sturdy plants follow and good crops, it will be little short of a miracle; but start the tubers in light soil in cool frames or in boxes, and when broad thick leaves are just unfolding and fat stems just forming, when frost has passed, then plant carefully in good soil without breaking the roots, and sturdy growth follows. It is the same with Begonias—draw them, coddle them, roast them or steam them for several weeks in the spring and early summer, then turn them into the open ground, and nothing can be expected but a general shrivelling and collapse.

These remarks are suggested by an inspection of ninety thousand Tuberous Begonias now growing and flowering in the open grounds in—as nearly everybody will anticipate—one of the nurseries of Messrs. J. Laing & Co., Forest Hill. There, in a position as fully exposed as possible, without either shelter or shade near them, are some sixty beds, each about 50 yards long, just a mass of stout green foliage and sparkling flowers. It is, or rather was a week ago, a wonderful sight. The plants are dwarfer than usual, owing to the growth having been arrested by the extreme heat, but this, perhaps, shows the flowers the more clearly. Be that as it may, they quite eclipse the Zonal Pelargoniums, and will continue attractive until, like Dahlias, they are cut down by frost.

It is interesting to observe that the varieties are produced from seed without any great variation in colour. All the plants in the beds are seedlings raised in January of the present year, and as a rule they are in blocks of colour. Here we find a bed nearly all of white or blush-tinted varieties; next a bed in which rose and pink varieties prevail; then rows of soft scarlet, pure scarlet, dazzling orange scarlet, crimson in light and deep shades approaching to maroon. The tints are by no means uniform nor the varieties identical, but they are sufficiently so for grouping purposes. A few plants produce flowers finer than the others—larger, rounder, thicker in the texture of the petals, with stouter stalks, or an advance in colour—these are taken up, potted, arranged under glass as parents of the next generation of these beautiful flowers. No plants “lift” better than these. Carefully handled and attended to, they do not lose a leaf and scarcely a flower. They appear to receive little or no check, for they may be potted one day and the flowers hybridised the next. Wonderful in substance are these selected flowers on plants grown in beds—“like leather” is a common remark, and every endeavour is being made to raise varieties with stems proportionately stout, so as to hold up the flowers, firm and more or less erect, after the manner of Auriculas. That is the object now. Hundreds of plants have stems so stout that no stakes are needed to support them, and if storms should be sufficiently violent to break them there will be little else left in gardens. The yellow varieties do not appear to be so good as the others for bedding purposes. They are very beautiful in pots, and as a more vigorous habit will be imparted to future varieties they will be the better adapted for garden decoration. Pure white flowers under glass do not as a rule retain their purity in the open air, or rather the seedlings from them do not, but are slightly rose-tinted; still there are a few promising exceptions, and a bed of pure white Begonias is apparently attainable.

Possibly the readiness with which the plants under notice transplant and establish themselves so quickly may be in a small degree attributable to the method of planting in the first instance. The ground where the buds are is not far removed from clay—in winter like putty, in summer baking like bricks. That is not Begonia soil, nor is it easy to render the whole bulk suitable. It was easier to draw deep drills as if for sowing Peas. Fill with a suitable mixture of loam and decayed vegetable matter, then insert the plants. That is what was done. The whole surface of the beds was covered with cocoa-nut fibre refuse, water was given in summer unstintingly, and thus they passed through the hot ordeal; the roots are thus bushy and “at home,” and the plants in the best condition for transferring to pots if needed; but, as above intimated, only a very small percentage will be so treated, the bulk will be left to be cut down by frost the tubers then being taken up, stored, and dried like so many small Potatoes.

These one-year-old tubers make the finest of plants for growing in beds another year, also handsome specimens for pots. A great span-roofed house is filled with Begonias, and throughout the summer has been a brilliant mass of splendid flowers, hundreds of the stems of the plants being from 2 to 3 inches in circumference. These fine plants, with their strikingly beautiful flowers, were taken up from the beds last year and potted the same as others are being potted now. A group of them of commanding excellence was arranged at the Crystal Palace Rose Show early in July, and several of the same plants figured prominently in the still larger arrangement at the Dahlia Show in September. Tuberous Begonias, then, are tractable plants, strikingly and continuously beautiful; and when at last their term, which is quite long enough, expires, they are extremely accommodating, for they can be put out of the way in sheds or other suitable positions, and the valuable stage space in green-houses and conservatories be occupied with something else.

A remarkable fact that should be recorded in connection with the Begonia beds at Forest Hill is this. When the beds were examined seven years ago the varieties were considered remarkably fine; but it is the simple truth to say that out of all the thousands now, or recently, flowering, not a score could be selected for their comparative inferiority that are not fully equal to, or excelling in merit, the best that were grown at the time stated. Some of the older forms are yet effective, either grown as large specimens or the slender drooping forms in baskets; but neither in colour, size, form, nor texture of flowers do they approach the best varieties of the present time.

There is much to be seen besides Begonias in the establishments of the Messrs. Laing. Fruit trees, Roses, Vines in pots and in fruit, Caladiums, with miscellaneous plants; and provision now is being made for Orchids, the stages of a new house for these plants consisting of sheets of corrugated zinc resting on iron supports. Thus is the ordinary roofing zinc applied to a new purpose, and selected because of its combining economy with durability.—A. TRAVELLER.

### WHITE PINKS FOR FORCING.

I THINK if Mr. E. Burton would give Lady Blanche a trial he would not be disappointed with it as a good white forcing Pink. We have had excellent plants in the spring by attending to the following points:—The cuttings are taken in March from the earliest forced plants and planted in 48-sized pots. The soil being sandy they root very freely when placed where they may receive a slight bottom heat. After the cuttings are rooted they are planted into boxes 2 or 3 inches apart, are kept rather close until established, when they are hardened, and finally planted out in May. Towards the end of October they will have grown fine bushy plants, when they are taken up and placed into 32-sized pots, arranged in a cold frame, and receive abundance of air all through the winter, when they are introduced, as advised by Mr. Burton, “into gentle moist heat.” The following coloured varieties of Pinks adapted for forcing we have found useful:—Lord Lyons, Derby Day, Newmarket, Mrs. Moore, and Miss Pettifer.—A. YOUNG.

### ABOUT HARDY FRUIT CROPS.

YOUR volumes already testify that I attach great importance to fruit buds being perfectly developed during the previous season. I have been silent for some time, but I have nevertheless been interested in “our Journal.” Neither with increased experience have I been the less satisfied that even yet we do not attach sufficient importance to the influence upon each other of different seasons. To state that any practical gardener ignores spring frosts is simply to insult us; and what argument is it to attach importance to the fact that the frost that killed fruit blossom in the south left the blossom in the north unharmed? If your correspondents will guarantee that next spring we shall over Britain have a frost, say, of 12°, about the 1st of May and none to follow, how safe it would be to predict that in the south of England the hardy fruit crops would be scarce, whilst in the north we would have an abundance.



I have many times impressed upon gardeners how desirable it is that they should note any particular varieties of fruit that do well in their separate districts. Here, too, with increased experience, I have been the more convinced as to the value of such observations. The diversity of influences that affect the fruit crop is surprising, and the diversity of constitutions of the several varieties of even the same fruit is equally surprising. Of our protected fruits, where more notice is taken of Grapes, you will see ripe fruit on unripe wood, and, particularly with the Gros Colman, you will have fine ripe wood, whilst the fruit is still green. Mind, I am not going to enter into an argument with any that may cry "Question." This I hold to be sufficiently a fact for my purpose. We have varieties of Apples so favourably constituted that you may have a full crop of fruit and a full crop of perfectly matured fruit buds the same season. On the contrary, here in the north, even with our very fine seasons, the wood and buds of some varieties are still unripe. Now, how do unripe fruit buds affect the future?—JOSEPH WITHERSPOON.

#### GIVING LIQUID MANURE.

If "Thinker" can tolerate frank as well as friendly criticism, which he sets store by, he will no doubt excuse me doubting his teachings concerning the application of liquid manure and saying so as well. "Liquid manure should never be given when the soil is dry, even if the plants need extra support," says "Thinker," and the statement is so explicit and definite as to admit of no after qualification. Now, what would farmers and gardeners do on many occasions if they were to abide by this rule, or if it were true? I have known some of the most noted and scientific Midlothian farmers wait for a shower of rain or a wet day to apply guano, nitrate of soda, and other manure to Potatoes and grass and other crops, and apply them the moment the rain began falling, although the soil was in as parched a condition through drought as it could well be, and not a blade suffers, but great benefit results in a short time. This is common practice among farmers, and if it is not exactly the same as giving liquid manure to plants "when the soil is dry" I should like to know wherein the difference lies. This season the rain did not come, and I applied Bee-on's manure full strength to Potatoes when the drought had really begun to arrest their growth, and I washed it in at once with water from a leather hose. Result—quick and most beneficial growth, no roots or tops damaged in any way. I could furnish you with abundance of other and similar examples, both in the case of pot plants and crops. "Thinker" brings up the analogous case of a "famishing man," but the comparison is not a fair one. To make the two parallel I should put it this way—"Never give liquid manure to a plant when the soil is dry, and never give food to a man when he is famishing." "Thinker" does not mean this, I daresay; but it is what his advice about dry soils undoubtedly amounts to. I do not often water Peas, but in dry seasons I have had to do it, and as it is as easy to give liquid manure at such times as water I have poured farmyard manure, full strength, along the rows clear of the haulm, and then washed it in with the hose. The Peas were drooping with the drought when this was done, and the result was accelerated and better growth. I agree with all "Thinker" says about the danger of giving manure too strong; but in regard to dry soils I am, provided the manure is of the proper strength a—NON-BELIEVER.

#### THE PAST ROSE SEASON—COMMENTS.

WHOEVER heard of an "empress" who could have been in her first "blooming youth" anything but a "maiden?" Or who in the world would venture to liken a girl-queen to a heifer?

Your correspondent, "Y. B. A. Z.," talks of the Rose as "the loveliest queen or empress of flowers," and then, almost in the same breath, advocates "A. F. M.'s" suggestion of stigmatising the royal princess in her glowing girlhood as a "yearling!" Should not our fairest flower be associated with the fairest names and similes? And if we must go to the farmyard for an important adjunct to our Rose gardens we need not have recourse to the stud book for our Rose epithets.

In cricket an "over" is called a "maiden" when no fault can be found with it—when, in fact, it is too good for everything. And if this be the meaning of the word it could surely not be better applied than to our empress-queen in the glory of her triumphant *début*. And even if her charms be not fully displayed on the occasion of her first drawing-room, is not a retiring modesty more characteristic of the "maiden with the shy and eager face," than of the long-legged, inquisitive, carrot-loving, quadruped-proprietor of the stud-farm-appellation suggested by "A. F. M.?"

Canon Hole has voted "Old Cabbage" to the pigs; and the young hopefuls of horned and hoofed may well remain in undisturbed possession of their thoroughbred (but *not* royal) indication of juvenility. It may be hinted that Maréchal Niel and Général Jacqueminot and such distinguished warriors object to being called "girls;" but it would be a greater insult to a general (or a peer—"a this year's duke!") to have attention called to the recentness of his promotion; so that they may well be content to accept the feminine distinction as a compliment to their graceful deportment, though ordinary loyalty *should* be inducement enough, at least during the reign of "Empress" Alfred K. Williams.

At the Croydon Horticultural Show this year Mr. Claxton of Liverpool exhibited among other Teas seven blooms of Madame Cusin (hardly inferior, I think, to the grand flowers of Comtesse de Nadaillae referred to by "A. F. M." last week, except in the unsurpassed colour of the latter variety), which, had "Y. B. A. Z." seen them, must have induced him to give Madame Cusin a very generous trial before discarding her.

The suggestion that the shrivelling of Roses when cut is due to the "condition of the atmosphere" at the time, and is not an imperial idiosyncrasy of A. K. Williams, appears to be the correct one, for I have noticed that all kinds of Roses, in whatever state of development, if cut in a drying, especially a *hot* drying wind, shrink away and become "floppy" within an hour or two of their being put in water. Why does not "Y. B. A. Z." disbud the secondary buds of Madame Lacharme which always appear round the central flower if exhibition blooms are required? Another Rose with a similar habit of growth is that best of autumnals, H.P. Jules Finger.

Etoile de Lyon here had the early shoots too much injured by the late April frosts to entirely fulfil its vernal promise; but the plants broke afresh, and gave fine well-shaped flowers as large as Perle des Jardins, but slightly paler yellow, with petals thinner but more numerous, while the plant is a very good grower and free-blooming.

All Rose-growers owe "A Thinker" a vote of thanks for his very valuable and concisely expressed "thoughts" on the subject of liquid manure for Roses. If gardeners who do not think for themselves would have thoughts like these stereotyped in gold letters all over their watering pots there would be fewer wailings over invalid Rose trees or the funerals thereof.—T. W. G.

#### SEASONABLE VEGETABLES AT SOUTH KENSINGTON.

IN the excellent report you give of the Show at South Kensington on June 23rd, you say Mr. Miles was first for the collection of eight kinds of vegetables, showing amongst other things a dish of Brussels Sprouts. In the prize list it is stated that the vegetables shown in this collection must be "in season," and I am of opinion that Brussels Sprouts are not in season in September when Peas and Kidney Beans and others of our best summer vegetables are still good and plentiful. Had I been competing in the class in question I certainly would not have felt satisfied with the Judges in placing Brussels Sprouts at the top of the list of seasonable vegetables, and in my opinion the less successful exhibitors have cause to feel dissatisfied with such work. There are very few gardens in which Brussels Sprouts are ready for use at the present time; nor is this to be regretted, as few would care to dine off them now, being of opinion that they may have plenty of them from the beginning of November until the end of March. It has often occurred to me that the judging at South Kensington must be remarkably accurate, as I never at any time or in any paper see a word said against an award, and for aught I know there may be no occasion for it, but, in justice to all, I do think they ought to have some regard for the wording of the prize list.—A KITCHEN GARDENER.

#### AUTUMN FLOWERS.

WE often hear the remark that there are few flowers in autumn except Composites, and those are yellow, and it is certain that the class mentioned is decidedly predominant; but there are many others, amongst them the following three plants, which are not nearly as often grown as they deserve to be.

**ACONITUM AUTUMNALE**—This plant is one of a genus, the members of which are usually, and not without reason either, regarded with suspicion, owing to their extremely poisonous nature, which is due to the presence of an alkaloid named aconitine, said to be the most powerful vegetable poison known. The juice of one species—viz., *A. ferox*, is used by some of the Hill tribes of India for poisoning their arrows, and is called Bikh poison. The present species is a very stately plant, well suited for a position at the back of the herbaceous border, where its rich purplish-blue flowers are very effective; and if examined individually, will be found to possess many points of interest—notably the curious helmet-shaped calyx, and the two upper petals, which are hollow and horn-like; these, however, are partially concealed beneath the helmet or hood previously mentioned. This plant must not be confounded with *A. japonicum*, the flowers of which are deeper in colour, and the whole plant dwarfer. It is not by any means fastidious as to soil or aspect, and may be easily propagated by division of the roots, or more correctly, by young tubers, which form at the side of the older ones.

**PHYGELIUS CAPENSIS**.—A most beautiful and interesting plant when seen at its best, for which it requires a warm situation in a rich light sandy loam, containing a fair proportion of decayed vegetable matter. In many parts of this country it can never be seen in good condition unless planted at the foot of a south wall, in which position the rich tubular flowers and the dark green leaves are seen to great advantage. It is a native of the Cape of Good Hope, and is one of the handsomest members of the Figwort family (Scrophulariaceae) forming a half-shrubby plant from 2 to 3 feet in height, with dark, oval, lanceolate leaves, notched at the margin. The flowers, which are very numerous, are tubular, curved, the limb divided into five roundish lobes; colour a rich vermilion tinged with yellow in the throat. It may be easily propagated by cuttings, layers, or division, also by seed when procurable.



**ZAUSCHNERIA CALIFORNICA.**—A near relative of the Fuchsias flowering during late summer and autumn, and being very easy to cultivate, it is rather curious that it is not more frequently met with in our gardens, being very useful as a pot plant for the decoration of the conservatory during the slight gap which exists just before the Chrysanthemums enliven what is sometimes called the month of suicides. Cuttings should be struck in a cool frame late in spring, and the plants pushed forward in light rich soil, with an occasional supply of liquid manure, when they will form handsome little bushes without tying in 5-inch pots. It must be distinctly understood that the plant is quite hardy, except in very cold and heavy soils, and that grown in the open border it produces quantities of flowers until the severe frosts set in. The flowers, which individually are drooping, are borne in a loose erect spike, colour a bright scarlet. Unlike most flowers the petals are small and comparatively inconspicuous, while the calyx is highly coloured, of a funnel shape, and without close inspection would be taken for the corolla. The leaves are linear lanceolate, the upper ones ovate, acute, small, placed alternately. A native of California. May be propagated by seed or division as well as by cuttings.—G. GUTHRIE.

#### A CHEAP PLANT AND CUCUMBER PIT.

WOULD it be asking too much for you to give dimensions and arrangements internally, heating, &c., of a handy little span-roof plant stove, say 20 or 25 feet long, 10 or 12 feet wide, with a division, so that Melons and Cucumbers could be grown in one part if desired? The floor could be sunk 2 feet or so. The position is open. Would it be desirable to have ends of house north and south, or east and west? and what would probable outside cost be?—D. HARDY.

[We are not aware that we can reply to the above letter more usefully than by reproducing a simple plan and explanatory article that was

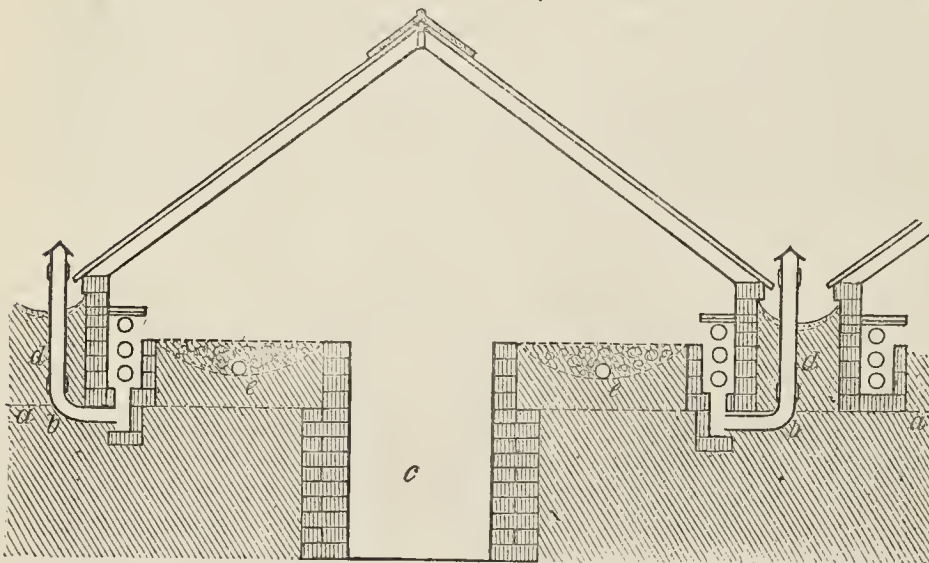


Fig. 52.—Plant and Cucumber Pit.

prepared by our able correspondent, Mr. Inglis, a few years ago. Such a pit we should prefer to stand with the ends north and south, but we do not consider the point very material. It is impossible to give estimates of cost; these can be obtained from horticultural builders or tradesmen. Mr. Inglis states:—"In the erection of pits, the conservation of heat by the means of 'mother earth' is very often underestimated, if not ignored altogether. I think there is nothing that we can do with more advantage to our plants than endeavour to have them rather under ground than above it. The further a house or pit is raised above ground the more it catches the bitter blast in winter. The roof we must have exposed; but why have the walls also exposed, when they can be built for less money, and heated at less cost afterwards, by having nothing exposed to the elements but the glass roof? And not only is it of advantage in heating in winter, but it is of great advantage in the maintenance of more genial moist atmosphere in hot dry-weather in summer, as everyone can testify who has had experience of such pits, or given the thing serious consideration. For a range of useful pits I would suggest something like what is represented in the accompanying section. Supposing *a a* to be the ground-line, mark off and level the soil where the outside walls are to be, and ram it hard so that there is no chance of its sinking. On this build your outside walls, placing at intervals of 6 or 8 feet under the wall a right-angle elbow 3-inch sanitary pipe, socket end up, as shown at *b b*. By placing three bricks on edge round its end, and breaking off the end of the brick just above this pipe, a connection with the inside of the pit is secured. Another pipe, placed in the socket at *b*, will rise above the eaves of the pit; and to prevent wet entering, a tin or zinc cover can be supported 3 inches above the pipe by three pieces of stout wire, to fit inside the sockets. These will form ventilators, which may in most cases be left open, except in severe weather; but when desirable to have them at command, a small shutter to each inside can easily be applied. When the mortar is sufficiently

set, the spaces between the walls *d d* and also *e e* may be filled up with the soil excavated for a footpath *c*, building a wall on each side in the usual way. The space between the pits should be in the form of a gutter, asphalted, and made to carry the water to tanks inside the pits. These gutters should be 18 inches or 2 feet wide, and if the ventilators are placed alternately there will be plenty of room for cleaning out, attending to shading in summer, or applying mats or other coverings in the winter. A drain-pipe under the ashes in the beds will carry part of the water (otherwise wasted) back to the tanks. The inside arrangement of this pit is specially adapted to the growing of decorative plants of dwarf growth, such as Cyclamens, Primulas, Cinerarias, Bouvardias, Achimenes, Begonias, Poinsettias, and dozens of other plants, which will do far better than in houses of any other description. But with a little modification of the arrangements it can be made equally suitable for propagating, forcing winter-flowering plants, growing pot Vines, Melons, Cucumbers, Tomatoes, &c.

"The great objection to these sunken pits is the necessity of having steps down to the doorways. This, however, is not always necessary. If they are built on sloping ground they may be so arranged as to be wholly under ground, except the ends in which the doors are placed. In such a case the end walls would have to be built first, the mean height of the soil ascertained and levelled in the same way as you would form a terrace, and upon this level, properly consolidated, commence to build as on level ground. In building a number of such pits a large tank should occupy the opposite end to the door, and these should not only be connected with each other, but should be made one tank, so that the water will run direct from the gutter into it. In every such tank a flow-and-return hot-water pipe should be placed, for the use of cold water in watering plants works untold mischief wherever it is applied in heated structures."]

#### NOTES ON DAHLIAS.

MANY readers of your valuable Journal, speaking of your report of the Great National Dahlia Show, have written me, asking information respecting the cultivation of the flower.

I am truly delighted to find the great success of our Show on the 5th and 6th inst. has given a fresh stimulus to many who from their remarks are desirous to commence the cultivation of this noble flower. The formation of the above Society was for this very object, and I think the Committee have good reason to hope their labour has not been in vain.

To answer all letters is more than I can undertake, and I trust your insertion of the enclosed will be taken as a wish on my part to withhold nothing I have gathered from its successful cultivation for many years. Dahlias, I find, have three great wants to commence with, which must be strictly attended to. First, plenty of air; second, plenty of loam; third, plenty of water, supplied at such times and in such quantities they may require.

Many questions are asked regards planting, soil, disbudding, length of time required before the flower is fit for showing, and many others. I am pleased to have these questions put; it shows a strong desire on the part of those asking to possess a sound foundation to start upon. I reply I only know of one of the successful means whereby the above results can be obtained—that is "Practical Experience." The difference of soil, situation, and changeable climate prevent any definite rule being laid down. Besides, we have enemies abroad, which must be diligently sought for and destroyed.

Those who are bent upon seeing a first prize upon their stands at our next grand National Dahlia Show must not at times mind rising with the sun, nor must they ignore the light of the moon, for by its influence many a grand bloom has been saved from destruction. If its light is withdrawn use such as you have at command, and the last thing go and look at the face of your choicest blooms. You will often find one of the many enemies spoken of which in a few minutes will spoil that which has taken days to produce.

I find there is so much to be said respecting our choice of plants, Pompon and single, that comes rushing into one's mind, I cannot ask more of your valuable space, but will continue the article at another time, if wished.—H. G.

[We will readily accord space for such cultural notes as we may receive from a grower so skilful as we know "H. G." to be.]

#### CHRYSANTHEMUM BENDIGO.

CHRYSANTHEMUM BENDIGO is a *bonâ fide* sport, having originated from a plant that was sent me under the name of Mrs. Heale. During the time that I was increasing and fixing the sport I showed flowers of the parent at various shows, under the name of Mrs. Heale, and it was never challenged as being anything different. At Eastbourne I showed the sport for the first time, a bloom from the parent stock likewise accompanied it. There it was awarded a certificate by the Judges—Messrs. Cannell and Davis, two of our largest Chrysanthemum growers. I also sent to the Royal Horticultural Society a stand of six blooms, four of the sport and two of the stock it started from, giving it as a sport from Mrs. Heale. There it was also awarded a first-class certificate. Those flowers were shown the next day at the National Chrysanthemum Show at the Westminster Aquarium, and some time previous to the judging the President, E. Sanderson, Esq., expressed his opinion that the parent blooms were not those of Mrs. Heale, and he thought they were Eve. Someone at the time suggested that the sport might be Mabel Ward, and attention was directed to a plant of that variety standing near in one of



the groups; but Mr. Sanderson considered them quite distinct, and pronounced the sport Bendigo to be a thoroughly good variety. The Judges also awarded it a certificate. Owing to the above doubt as to its proper parentage there was no mention whatever made of its origin in the advertisements.—J. RIDOUT, *Reigate*.



THE FRUIT MANUAL.—As will be seen by advertisement in another column the fifth edition of this work is now ready for distribution.

— GERMAN JUSTICE.—We are informed that Messrs. H. Cannell and Son, Swanley, showed a collection of Dahlias (similar to their exhibit at South Kensington on the 9th ult.) at Frankfurt, and that the Germans refused to allow the cards being placed upon them, because they attracted more attention than all the other exhibits. However, after a while they gave the exhibitors a certificate of highest honour and medal.

— APPLES—AMERICAN MOTHER AND GRAVENSTEIN.—Mr. Young writes:—"I can fully endorse the statement of 'J. A. W., Alderminster,' that the American Mother Apple is one of the most delicious dessert Apples known. It may not succeed in all districts in the open, but a few cordons trained against a wall could be grown in most gardens. Gravenstein is another delicious Apple, but it is much larger than the 'Mother' and angular in shape, but no early dessert Apple can surpass it for flavour."

— GARDENING APPOINTMENTS.—The following gardening appointments have been made through Messrs. John Laing & Co., Forest Hill, London:—Mr. Philip Wells as head gardener to Geo. Lee, Esq., J. P., Bapchild Court, Sittingbourne, Kent, and Mr. Campbell (lately at Hartfield Grange, Kent), as head gardener to G. de Quebewittle, Esq., Noirmount Manor, Jersey. We are also informed that Mr. Nicholas Slattery (late head gardener to Sir Richard J. Musgrave) has been appointed steward and gardener to the Right Hon. Lord Emly-Tervoe, Clarina, Limerick, in place of Mr. Timothy O'Rourke, resigned.

— WARNER'S KING APPLE.—Mr. John Carter, Keighley, writes to us—"I forward a few Warner's King Apple, sent me by Mr. Taylor of Dersingham in Norfolk. They are from trees I sent Mr. Taylor five years ago, and the same strain that we have propagated upwards of sixty years. For this locality and for kitchen use from January to May there is no Apple at all equal to Warner's King." [The Apples are very fine indeed, the six fruits weighing 90 ozs., an average of 15 ozs. each. The heaviest fruit weighed 18 ozs.]

— LINCOLN CHRYSANTHEMUM SOCIETY.—We are informed that the Exhibition of the above Society will be held on Tuesday and Wednesday, November 18th and 19th. Dr. G. M. Lowe, Castle Hill, is the Honorary Secretary.

— THE "DICTIONARY OF GARDENING" (170 Strand).—Part 12 of this work contains descriptions and figures of plants from Celosia to Cherry, the majority of the illustrations being faithful representations of the plants, and the nomenclature is now very accurate. An improvement has also been adopted—namely, giving references to works containing figures of the plants described.

— PEDIGREE ROSES.—Mr. H. Bennett is now sending out the following new Roses, all of which have gained honours at the principal London shows:—Mary Bennett.—"A Hybrid Perpetual without the slightest stain of Tea, of a dwarf, bushy, vigorous habit; foliage very large, rich, and handsome; flowers large and of beautiful form, opening well; petals very thick, round, and smooth on the edges; colour the same all through—of a most brilliant rosy cerise; thoroughly perpetual. A seedling from Baroness Rothschild." Certificated at Crystal Palace Show, Royal Botanical Society, and at Manchester. Mrs. George Dickson.—"Hybrid Perpetual; a very strong grower; an early, continuous, and late bloomer; has always been mildew-proof both here and at Stapleford; flowers large, not too full, opening very freely; bright satiny pink, a new colour." Certificated by Royal Horticultural Society. Grace Darling.—"Tea; a very vigorous grower, flowering very freely

from every shoot; blooms very large, very full, opening well indoors and out; colour quite new, base of petals creamy white, deeply tinted and shaded with pinkish peach; thoroughly distinct; very early when forced." Certificated by Royal Horticultural Society. These were shown last year, and attracted the favourable notice of many rosarians, the good opinions then formed having been confirmed by the examples shown this season.

— STEWED LETTUCE.—Mr. Luckhurst writes in reply to a correspondent—"The Lettuces are carefully washed and reduced in size sufficiently for each Lettuce, or portion of a Lettuce, to be just large enough when cooked to be taken upon a tablespoon. To effect this some of the outer leaves are stripped from a small Lettuce, or a large one is quartered and the quarters reduced considerably. They are then tied in small bundles and cooked in water in the same way as a Cabbage. When done strain and press gently to extract the water, and then let them simmer gently for ten minutes in clear gravy in a stewpan. They are then untied, arranged tastefully in layers in a vegetable dish, and served with some of the gravy around them. The Lettuce should come to table a bright green colour, and with the clear gravy around them form an attractive and novel dish, alike pleasing to the eye and delicious to the palate."

— MESSRS. CASSELL'S PUBLICATIONS.—The monthly packet of these contains part 50 of "Paxton's Flower Garden," which gives a fine plate of *Nymphaea devoniensis*, an extremely handsome hybrid between *N. rubra* and *N. Lotus*, or, as some have supposed, *N. dentata*. A figure is also given of *Solenidium racemosum*, a little-known Orchid, separated from *Oncidium* by a few characters. The flowers are yellow barred with reddish brown, and the plant is a native of New Granada, at an altitude of 8500 feet. Woodcuts are also given of *Thyrsacanthus rutilans*, *Masdevallia Wageneriana*, *Lonicera fragrantissima*, *Acacia marginata*, *Gastrolobium velutinum*, and *Pentaptera sicula*. Part 6 of "Cassell's Popular Gardening" has a continuation of chapters on Rose Culture, Florists Flowers, Flower Garden and Kitchen Garden, together with articles on the Suburban Garden, the Vine, and the Cucumber, each subject being fully considered. Part 91 of "Familiar Wild Flowers" contains plates and description of the Henbit (*Lamium amplexicaule*), and the Field Scorpion Grass (*Myosotis arvensis*). Part 68 of "Familiar Garden Flowers" giving figures of *Primula verticillata* and *Helianthemum vulgare*.

#### ROSE BELLE LYONNAISE.

YOUR pleasant and instructive notes on the past Rose season tempt me to say a few words on behalf of a faithful old friend who, I am sorry to find, is not named in your several correspondents' lists. A true and trusted friend has Belle Lyonnaise been to me from early spring to now in, I may say, the autumn. Never has "cut and come again" been more fully exemplified. My only regret is that I never counted the blooms it has given me from first to last—no, not last, for now there are almost countless buds, and I daily pick from ten to twelve blooms, and such blooms as would not disgrace a show box anywhere. It is against a 9-foot north wall in a sheltered garden. It grows apace in spite of the good strength expended on blossom. Beside it on the wall is Madame Lambard, also doing well and blooming well, but she cannot vie with good old Belle Lyonnaise.

As with "A. F. M." so with me ("A. L. M.") has A. K. Williams proved false. The same story may be told of Marie Baumann. La France has done well in its second blow. Doubtless the exceptionally dry season may plead excuses for many Rose failures, but many H.P.'s and Teas have done well this year in this comparatively moist and good Rose soil. I must not forget another good Tea—*Rêve d'Or*—a grand and free bloomer here.—A. L. M.

#### HOT WEATHER AND FRUIT TREES.

SETTLING his difference to his own satisfaction with "A Thinker," and admitting having attributed to him opinions which he does not fully entertain, "An Old Gardener" states he is "not prepared to admit the same in regard to Mr. Abbey." Is this the answer to my statement at page 261—viz., that the scarcity of fruit of the past few years has been more the result of immature wood in autumn than of frost in spring? And, although "An Old Gardener's" attention was directed to the first paragraph of the article at page 191, where it is stated "the frosts of April made quick destructive work of the blossom and embryo fruit of hardy trees," and to the concluding one—viz., "if the elements are favourable we shall have abundant crops another season," they are passed over in silence. As no reply has been vouchsafed I am reluctantly obliged to repeat my statement at page 261—viz., "Your correspondent begins and ends by ignoring facts, and I must add attributes to me 'deductions' at page 234, which he tells us at page 289 he did 'not credit' me with. Then he takes up what he terms the keynote of my article—viz., 'The trees may form fruit buds, give promise of abundant crops by profusion of



blooms, yet the fruit fails to set, or if setting drops off before taking the first swelling. This is a consequence of last year's imperfect development of the buds and immaturity of the wood." This state of things "An Old Gardener" appears not to be acquainted with. He has not seen a case of this kind after a cold sunless season preceding as that of the autumn of 1868. He states, at page 235, "Hard firm ripe growth I will readily grant are conducive to the formation of blossom buds, and also, I willingly concede, to the perfect development of the flowers," and "I always have endeavoured and always shall endeavour to do all that is possible to mature the growths of fruit trees, because that is a safe course to pursue for the production of blossom ;" yet we are told that fairly well matured wood only is necessary, for he "has seen" the finest blossom and fruit too on those parts of shoots that are not the hardest and ripest." Immature wood, imperfectly developed blossom buds, have nothing to do with the failure of our fruit crops—all is due to frost.

Following up the line of argument we come to the phrase "ripened or stunted wood," as if wood to be ripe must be stunted, and that the growth and resulting crops of trees in orchards in comparison with those in the richer soil of gardens and under the manipulation of the cultivator, "cannot mean anything but that immature wood in autumn is more fatal to the crops than frost in spring." Further, your correspondent asserts that stunted trees are not the most fruitful. "There are thousands of them fruitless now, while younger healthier trees under the manipulation of cultivators are bearing fruit, but I can see any leafless fruit trees in an orchard on gravel, the wood is as hard and stunted as can well be imagined; but trees in the garden are still green, yet the growths being thin will be sufficiently ripened, and, frost permitting, the trees will yield better crops than the starved and hardwooded orchard examples." Surely stunted trees casting their leaves by the middle of September have neither ripened wood nor perfectly formed fruit buds. The garden here is on gravel, and I have not a standard tree, nor is there one in old orchards about here that is in such a pitiable plight as those described. They have the foliage still fresh and green, and in an orchard that knows no "cultivation," only that of the depasturing of the grass by sheep, are some trees with their ten to fifteen bushels of Apples. The trees, however, are an exception, as the fruit crops are a general failure in Hunts as elsewhere. The standard trees bristle with buds, not only on spurs from last year's wood, but that of the current season is terminated by a fruit bud, the growth being from 6 to 12 inches or more in length, and I have young trees under cultivation that have shoots on those extending a yard and more in length, and not a fruit bud on any of them as regards this year's growth, whilst the wood of last year of a similar length is a mass of blossom buds. I mention this to refute "An Old Gardener's" assertion that I may mislead by appearing to be an advocate of "starvation."

Now I want an answer to the question, that since frost is the cause of the failure of the outdoor fruit crops, why the trees in orchards are fruitless, and younger healthier trees in gardens are bearing fruit. Surely "An Old Gardener" does not mean the latter are proof against frost, whilst the blossom on orchard trees is susceptible of injury. I thought it destroyed all alike.

With regard to Kent *versus* Northumberland, the former is as remarkable for its fruit gardens as the latter is for the extent of its sheep pastures. Compare the two counties in the matter of fruit-growing. There may be a more plentiful crop of fruit in the north than the south this year, but that there are places in Kent with fruitful orchards the following extract from a letter of one practising there may not be devoid of interest. It is dated September 23rd:—"We are having beautiful weather, bringing on the fruit crops, which are good, especially Apples, also Pears, Williams' Bon Chrétien being very fine, and there are plenty of Filberts." Is this an evidence that the trees there were less mature in wood than in other parts of Kent, and consequently escaped frost by blossoming later? Perhaps your correspondent may know that Kent is not nearly so elevated as Northumberland, and that localities at an elevation of some hundreds of feet are less liable to spring frosts than those that are several hundred feet lower. It makes all the difference, not only on the score of immunity from spring frosts, but in the hardier kinds of fruit; trees grown in cold localities, as those of Northumberland, must be compared with those that will succeed in the warm ones of Kent.

The most unhappy deduction drawn by "An Old Gardener" from my article on page 191 is bringing forward an extract from an article by Mr. Luckhurst, to be found on page 63, July 22nd, 1869. I never said that this year (1884) being hot and dry the crop in 1885 would be abundant unless the elements were favourable, and that they were not in 1869. This proves exactly what I have been contending for. "An Old Gardener" may say, "Failure of the fruit crops is all due to frost in spring. Immature wood has nothing to do with it." Now turn to the *Journal of Horticulture*, vol. xvii., page 65, where we have an excellent article by Mr. Luckhurst, and begin where "An Old Gardener" stops quoting, and we read "Standard Plum trees in most instances have a miserable crop of abortive bladder Plums, stoneless and deformed; while Cherry orchards, whose trees were 'clouds of bloom,' have shed their fruit to a ruinous extent, to the great loss of many fruit speculators. A custom prevails in most parts of Kent, as soon as the blossom of orchard trees has fallen and the young fruit are visible to sell the fruit by auction. This year the prices obtained were generally very high, and consequently it will probably prove a disastrous season to the buyer. In one case so abundant and promising was the crop, that although that of last year was good, yet the highest bid of last year was almost doubled." On the same page is an article by "C. M.," in which it is stated that "I had the pleasure of seeing Mr. Rivers and his garden this spring, and was

surprised to observe the almost total failure of his Peach crop. He attributed the loss of this fruit to the extreme moisture of the atmosphere while the trees were in flower. This made the pollen into paste." Then follows "C. M.'s" view of the failure. "I am convinced that last year was anything but favourable for the ripening of Peach wood. The trees suffered from the extreme dryness of the soil throughout the summer, and were not improved by being stimulated into growth by the autumnal rains. The mischief then done did not show itself until the spring." And there also occurs this statement—"The fact is our fruit trees are in too many instances left to take care of themselves. If they bear fruit, well; if not, it is the season—the wet or the dry, the winds, or the scarcity of bees, or the multiplicity of birds, or the flight of insects—anything, in fact, except the true cause," and "frost" is not so much as remotely hinted at. Then turn back to pages 56 and 57 and we find Mr. Pearson is credited with stating at page 421 of the previous volume "That the failure of the Peach crop were due to a total absence of sun and a cold damp atmosphere whilst the trees were in bloom." "There was no frost sufficient to do any injury. In April the weather from excessive cold became unusually warm for the season, and it was then the fruit fell." This latter extract is that of the writer of the article—viz., "Archambaud."

Whatever consolation "An Old Gardener" can obtain from those extracts he is quite welcome to, as they show that there are other things to reckon against in the culture of fruit besides frost.—G. ABBEY.

### THE READING BEGONIAS.

I CAN endorse all that was said on page 172 with regard to the beauty of these Begonias grown by the Messrs. Sutton at Reading. Begonias, it is said by some, are rapidly falling into the condition to which the Calceolaria and Cineraria have come—viz., that growers will no longer care to buy named varieties, but that as they come so good from seed will content themselves by growing plants from seed. One can recollect well when long lists of named Cinerarias used to appear, and when with considerable trouble and expense a collection was perpetuated by cuttings; the same was done, but with greater difficulty, inasmuch as they were more "miffy," with Calceolarias; but by degrees, as seed was carefully and honestly harvested and distributed by firms of well-known respectability, growers were contented with what their seedling pans produced, and so it is said it will be with Begonias. Perhaps, but at any rate now it is well to know the names and characters of a few good ones, and there are those of Messrs. Sutton, which, being out of the run of the usual strains, are peculiarly useful, their peculiarity being, I imagine, that they have more of the B. Pearcei blood in them, and that therefore the foliage is very ornamental.

*Sutton's Reading Beauty*.—This is apparently a distinct strain of dwarf habit, into which the blood of B. Pearcei has been largely infused. I have in my own greenhouse a pure white one, which is very beautiful; and there are also of the same strain plants with the flowers of various colours—citron, coral, salmon, magenta, scarlet, crimson, &c. To those who think flowers 6 inches across the perfection of beauty these will seem for their size insignificant; but they are very pretty, more useful for cutting, and neater than the larger-flowered ones. Then there is

*Meteor*.—This has flowers of a bright orange and reddish-orange tint, produced in great profusion from the crown of the plant, with a beautifully marked foliage, the ground being dark green marked with white veins; its habit also is very dwarf and very suitable where many Begonias are grown for a front row, where its beautiful foliage would show very well.

*Pearcei grandiflora* is a larger form of the species. It has the same beautiful velvety foliage, with large clusters of yellow flowers. Its foliage alone, even if it had no flowers, would be sufficient to make it a desirable plant, but its profusion of yellow flowers adds greatly to its value. As I have not seen these varieties in many places where Begonias are grown, I am, I hope, doing good service in bringing them under the notice of lovers of this favourite class of flowers.—D., Deal.

### ORCHID NOTES.

THE DUNLOP HOUSE ORCHIDS.—The extensive collection of Orchids formed by the late T. D. Cunningham Graham, Esq., Dunlop House, Dunlop, Ayrshire, which subsequently became the property of the gardener, Mr. D. Kemp, was sold by Mr. J. C. Stevens at his auction rooms, 38, King Street, Covent Garden, on Thursday, September 25th, the total amount realised being £740. Some of the principal prices obtained were the following:—*Cælogyne cristata*, Chatsworth variety, thirty growths, £5 10s.; *Cypripedium grande*, two growths, 10 guineas; *C. selligerum majus*, four growths, 14½ guineas; *C. Sedeni*, 2 feet across, 6 guineas; *C. Dominicanum*, fine specimen, 11 guineas; *C. albo-purpureum*, three growths, 10 guineas; *Dendrochilum filiforme*, 90 flower spikes, 12 guineas; *Odontoglossum vexillarium Cobbianum*, £7; *Vanda suavis*, 21 guineas; *Vanda Lowi*, 16 guineas; *Sobralia xantholeuca*, £7 10s.; *Lælia anceps Barkeri*, nineteen pseudo-bulbs, 7 guineas; *Cattleya intermedia*, 100 pseudo-bulbs, 31 guineas; *Vanda suavis*, Veitch's variety, 30 guineas; *Masdevallia Harryana splendens*, 14 guineas; *Angraecum sesquipedale*, 15 guineas, and another 4 feet high, one of the best plants in the country, 18 guineas; *Vanda tricolor*, 16 guineas; *Vanda suavis*,



Manchester variety, £17; *Masdevallia Harryana conchiflora*, £7 10s.; and *Cymbidium Lowianum*, 11 guineas.

**CALANTHE VESTITA.**—This *Calanthe* should be increased as much as possible. It is easily grown, and as it forms nearly two pseudo-bulbs to every one, this is not much trouble. It throws out a long spike of pink and white flowers, which shows to advantage well when mixed in a group with Maidenhair Ferns. They are deciduous, mostly losing their leaves whilst in flower. After they have flowered they should be kept quite dry in a warm place until it is time to start them in growth again, then place one or two pseudo-bulbs in a pot, varying the size according to the size of the pseudo-bulbs, employing a mixture of peat and loam, with plenty of silver sand. It is also very beneficial to give them a little weak guano water about once a week when growing.

**CALANTHE VEITCHII.**—Another free-growing and free-flowering *Calanthe* that is well worth growing. Its flower spikes are from 2 to 4 feet in length, three parts of the stem being covered with beautiful pink flowers, which last long in perfection. It comes into bloom later than *C. vestita*, and has generally lost all its foliage before the flowers expand. It requires the same treatment as the above—namely, plenty of water when growing and afterwards a period of rest.

**CALANTHE VERATRIFOLIA.**—One of the evergreen *Calanthes* and is more difficult to grow than those already mentioned. It throws up its long spike of beautiful white flowers mostly in the winter, which lasts several weeks in perfection, although I have seen it in flower in August. As soon as it commences growing it should be potted in a compost of loam and peat, adding a little decayed manure and sand. After it is potted great care should be exercised in watering, or the young growth will quickly decay. This is an old Orchid, but is well worth growing.—A WORKER.

#### CARNATION GLOIRE DE NANCY.

As a grand white-flowered variety this should be largely grown to afford flowers for cutting. It might not suit the taste and requirements of those who grow blooms for exhibition only, for in the *Carnation*, as in the *Rose*, the shape and formation of the flower appears to be the main object to be attained, and this at the expense of the fragrant properties of the flower. Some varieties are almost faultless as regards the symmetry of the flower, but the delightful perfume that renders the *Carnation* one of our most popular hardy plants is sadly deficient. We do not complain of the beautiful form of the flower, for this would certainly raise the *Carnation* considerably in the estimation of those who love it for its fragrance alone. What we really do want for border *Carnations* are such free-flowering varieties as *Lady Manvers* (or *Royal Purple*), with the strong delightful perfume of the old *Crimson Clove*. *Carnation Gloire de Nancy* possesses the latter quality in a marked degree, it is scarcely so sweet as that favourite old variety, and the flower is smaller. The dry unfavourable season for *Carnations* outside may have told against it in this respect. It is a strong grower and promises to flower very freely, and therefore a grand companion for the old *Crimson Clove*, and should find a place in all gardens where sweet *Carnation* flowers are required. The only fault this variety appears to possess is that of the flower stems becoming too tall. It evidently grows as freely as the old *Clove*, and there appears but little difficulty in obtaining a stock of strong plants, which cannot be said of many named varieties now in cultivation.—W. B.

#### DINNER-TABLE DECORATION.

A VERY useful article was published in this Journal (page 241) on buttonhole bouquets, which many young gardeners would peruse with advantage. The floral decoration of the dinner table is also a most important subject, as the time is now approaching for our country dinner parties, and that means much extra work for the foreman or floral decorator. To aid others I will give a brief description of dinner-table decorating, which may be useful to young men who have taken their first foreman's place, and perhaps have not had an opportunity of learning much respecting the work. The principal point in arranging a dinner table is neatness, the flowers to be arranged symmetrically, and not too many colours. We will start with the centrepiece, supposing it to consist of flowers alone arranged in a vase 18 inches high, a dish 4 inches from the base, a smaller dish half way up, the vase to be trumpet-shaped at the top. The flowers should be assorted according to their size, the heaviest in the bottom, and the lightest at the top. It often happens that shades of colour must be allowed to be of more consequence than size of flower. Small flowers of dark colour at the bottom of a vase contrast well with larger flowers of a paler shade higher up. The base looks well furnished with Maidenhair Fern and trailing pieces of *Cissus discolor* and *Selaginella*; amongst these *Kalosanthes*

*coccinea*, *Eucharis*, *Allamanda Hendersonii*, and *Bougainvillea glabra*, the middle dish to contain trailing pieces of *Selaginella* and *Adiantum gracillimum*. Amongst these place *Pancratium fragrans*, *Oncidium flexuosum*, *Euphorbia jacquiniæflora*, and *Plumbago capensis*. The trumpet should contain a few spikes of *Calanthes* if in flower, or some other light graceful flower. *Bouvardias* red and white, *Rhynchospermum jasminoides*, and a few fronds of *Lygodium scandens*, *Selaginella*, *Adiantum gracillimum*, and Grasses, with a few *Tropeolum* blooms. Above all avoid overcrowding. In general few plants are wanted at the dinner table; at that I am describing, which is for four persons, I should put two *Crotons*, *Chelsoni* or *interruptus aureus*, one on each side of the centrepiece, or two *Asparagus plumosus nanus*, and two *Rivina lævis*, one at each end to correspond. Their red fruits show up well, but do not let them stop in more than one night, or their berries may fall. The plants near the centrepiece should be 6 inches lower than the centrepiece, the end plants to be half the height of the centrepiece. As many small glasses as there are guests should be arranged, each with a buttonhole.

I will now describe a plan of table decoration which I think is most suitable for the plants and flowers named. Before, however, having plants or flowers on a table, place a layer of white paper where required, and then lay some fresh green moss the necessary width. Cut the paper where the moss does not cover it, and all that is then required is to get the flowers and arrange them. Around the centrepiece on the table mentioned above was placed a ring of *Eucharis amazonica* and *Adiantum gracillimum*, around this a wreath of *Poinsettia* bracts, with their points outwards, the stalk of the bracts inserted in the moss. Projecting from the *Crotons* were four angles of purple *Primulas*, edged with *Laurustinus* in flower and a few of its own leaves. Surrounding the *Rivinas* were single blooms of white *Primulas*, and a margin of *Poinsettia* bracts, while surrounding all was an angular band 4 inches wide of *Chrysanthemum Lady Talfourd*, in the centre white *Primulas* and *Vesuvius Pelargoniums*. The *Primulas* and *Pelargoniums* form alternate lines on the inner or outer side of the band, which has the points of the outer angles alternating with the plates. A few Ivy leaves were also employed, and the whole effect was very satisfactory. I should like to read some other young scribe's idea on this subject.—W. R., *Waterloo, Liverpool*.

#### MILLA BIFLORA.

THIS Mexican bulb is a pretty and useful plant. Its growth and flower stems are very slender, the former being rush-like in appearance and about 18 inches in length, while the flower stems here have attained a height of 2 feet 6 inches. The flowers are produced in pairs, as its name implies, but sometimes as many as four are produced on one stem. The blooms are of the purest waxy white, with more substance than *Eucharis amazonica*, and are about 2½ inches in diameter. In appearance the flowers are star-like, much resembling a gigantic form of *Ornithogalum umbellatum*, and are deliciously fragrant, three or four of them being sufficient to perfume a room. The flowers last several days when cut, and it will, without doubt, when it becomes cheap and well known, be very largely grown for bouquets.

I do not think it will be much employed for producing an effective display out of doors, as the flowers open successively, and therefore, though planted largely, would prove disappointing. It would be useless to have a few bulbs dotted about, for a dozen or a score should be planted together in a clump to ensure any degree of satisfaction. I have had no opportunity of testing the hardiness of the bulbs, for I only purchased them last autumn, and was advised to keep them dry and cool during the winter. They were planted out towards the end of March or the beginning of the following month in sandy peat in a sunny position, and they have done well considering the season. I was also advised to give them abundance of water during dry weather, but this I omitted, and whether a bountiful supply of moisture at the roots is an essential in its cultivation I have not yet discovered. Judging from the slender habit of its growth, I do not think it a suitable bulb for cultivation in pots under glass, but it is valuable for its lovely flowers, which are produced in succession over a period of about two months.—WM. BARDNEY.

#### SINGLE DAHLIAS: THEIR COMPARATIVE MERITS AND FUTURE PROSPECTS.

"SINGLE Dahlias have been partial failures with us this year, and fewer will be grown in future." Thus writes your correspondent who supplies with more than ordinary ability the customary "Work for the Week" in your last issue. I am very reluctant to say anything in depreciation of a class of flowers that has risen so rapidly in popularity as these. At the same time I have heard so many opinions like that quoted, that a discussion on their merits can do no harm. By comparison with the doubles there are at least three sources of dissatisfaction:—1, They are transitory, and if exposed to strong sunshine last little longer than the *Tigridias*, *Hemerocallis*es or *Day Lilies*. Very few have the substance of flower to be observed



in the doubles, and even if they had they are more at the mercy of the fierce rays of the sun, as it strikes them back and front at different hours of the day. On the other hand, the sun can but catch a small portion of the petals in a double Dahlia, as one protects or shades the other. I therefore find one lasts at least six times as long as the other. 2, I may call a second defect malformation. There has been an unusual tendency for single Dahlias to produce blooms this year minus a floret, or with one or more incomplete. This I admit may be owing to the dry season or the ground not sufficiently rich; but I have scores growing alternately in the same border with such Show and Fancy varieties as Sir Garnet Wolseley, Mrs. Kelway, James Vick, William Rawlings, Thomas Goodwin, and John Keynes say among the former, and Miss Browning, Queen of Beauties, Jessie McIntosh, Eccentric, John Lamont, and Chorister among the latter. Those named are regularly packed, so to speak, with florets; indeed, James Vick and Sir Garnet never by any possibility expand the whole of them, so from the alternate position I have an opportunity of comparison. Until the last heavy rains the singles rarely came perfect. Last year, while they came more frequently complete in shape and petal, they were more subject to injury from slugs. As most people find from experience, those dainty marauders prefer the blooms of a handsome Paragon, White Queen, Sunset, Clytie, Mr. Teesdale, or Harlequin to the finest foliage; while, on the other hand, if a piece of a petal is taken from any of the doubles by a voracious slug or earwig at even a short distance it is unobserved, while the beautiful formation of the single is spoiled.

Lastly, I may refer to the bad staging qualities of the petals for show or bouquet purposes. At Dunmore East, for instance, the other judges and myself were greatly struck by the appearance of the stand of single Dahlias presented as compared with Mr. Saunders' stand of forty-eight doubles beside them. I drew the attention of the Secretary to the matter, and he said they were cut the evening before, and that they could not stand the heat; but the doubles beside them had been cut twice as long, and had to travel from Cork, 150 miles. Upon this point I am afraid there can be no question. They will never be good exhibition flowers, and are altogether unsuitable for going a distance except some system of gumming is resorted to. I ought, perhaps, to make an exception, as I have a seedling this year, a cross between White Victory and Harlequin, that does not drop its petals, and is of a peculiar colour. It grows rather dwarf (about 18 inches high) and very floriferous. The body colour is white, lightly tinted in front with rosy-lilac, and heavily tinted lilac on the back. The petals are flat, form a perfect circle, as I think every single Dahlia ought to do, and is partly reflexed. The flower of this withers and turns back completely on the stalk.

I cannot remember seeing single Dahlias effectively used in bouquets except in a few cases, one being at Curraghmore, the residence of the Marquis of Waterford, where a light combination of about half a dozen different coloured blooms was tastefully mixed with Adiantums in an old china vase, having a slightly dimmed background. They are perfectly useless in the ordinary bouquet, except one may be permitted to lie flat on the top, and then will be sure to hide something better. I should be sorry to see single Dahlias again lost to general cultivation; yet, if my memory serves me, neither at the National Dahlia Show nor at the Royal Horticultural have any first-class certificates been awarded to them this year. Well, this is ominous; but living at this distance I may be mistaken. However, though we have some good ones likely to outlive most of us, why not strive for something better? Criticism never does a good plant any harm, and the foregoing observations are written in that sense.—W. J. MURPHY, *Clonmel*.

[A beautiful single variety, Formosa, exhibited by Messrs. Cheal and Son, was certificated at the Royal Horticultural Society's meeting, September 9th, this year, and described on page 249.]

#### NOTES ON FLOWERS.

THIS has, on the whole, been a glorious season; so fine has it been that the farmers are grumbling because they have nothing to grumble about. It is true that the want of rain once or twice told prejudicially against some crops, and had the effect of entirely destroying the beauty of herbaceous borders, and up to this time these have not improved much; but ordinary hedding plants have been all that could be desired. Pelargoniums have bloomed without a break, and the growth is of a character to lead us to hope to see them for many weeks as full of bloom as they have been in the past. Calceolarias have flowered continuously since July, but these have been eclipsed in brightness by the Viola named Sovereign, an old kind, but up to this time unsurpassed as a bedder. Another old sort has been charming—this is Golden Perpetual, which seems to have been thrust aside for newer though no better varieties. But the palm for effect must be awarded to Duchess of Sutherland Viola, the beauty of which it is impossible to describe. We have white-leaved Pelargoniums dotted thinly among the Violas; but the latter have grown so freely and flowered so closely and uninterruptedly as to cover the

former, and we have not had the heart to interfere with the self-made arrangements of the too-encroaching Duchess.

What a rich effect Henry Jacoby Pelargonium has in the mass! However, it has the same fault as all large-trussing sorts show here—too few trusses are produced. The smaller trussers are much to be preferred as producers of what may be called colour *en bloc*. Nevertheless, taking it with what I have called this fault, it is well worth growing. Some double Ivy-leaf Pelargoniums have done so well in vases that next year they are to be tried as edging plants. These are, in all their varieties, well deserving attention.

Single Dahlias have been prominently planted—the old White pegged down in lines, the others tied to stakes. Our old friend Alba has triumphantly maintained the pre-eminence. At the present time the plants are well covered with large flowers, and are very effective. The great fault of many single Dahlias is their not blooming freely. We never can command over four to six open flowers at a time on many of them, and, individually pretty though these are, they are of little value for decorating a garden set in the midst of hundreds of acres of grass and trees. Two yellow varieties, respectively named Canary and Yellow Boy, are good and free-flowering. A scarlet variety named Sunbeam we also think much of.

One of our greatest regrets this year is the collapse of Phloxes. The dry weather was too much for them, and they do not look as if they would get the better of their trial this season. But as a set-off the warm weather has brought on Gladioli much earlier than usual, and we have had a fine display right through August, though, of course, many are still left to carry us on through the present month. Damp nights and warm days are just what Gladioli delight in, and of both they had a large amount. We are almost sure to get all our bulbs well ripened this season. White China Asters suggest the thought that Chrysanthemums are not wanted so long as we can obtain these. Bunches in florists' shops are undistinguishable at a short distance from Chrysanthemums, and are equally beautiful.

Herbaceous arrangements were grand up to the middle of July. Since then I have been obliged to assume a slightly apologetic tone when referring to them. By the way, what a good thing an Index Expurgatorius of these would be. So many poor plants have been sold of late years that unsuspecting customers have had a sorry time of it. It requires a very rigid selection, and perhaps an efficient plan would be to name plants not worth growing.—N. B.

#### VERONICAS.

BESIDES being a very extensive genus, including as it does many very fine evergreen shrubs from New Zealand, this is of no inconsiderable garden value owing to the variety of form and the various uses to which they may be put in making our beds and borders attractive. The evergreens referred to, although not absolutely hardy in all situations, may be kept through very severe winters with a little care in the choice of a position. *V. chathamica* is one of the best prostrate-habited species, seldom, even when strong-growing, rising more than 6 inches above the stones over which it loves to scramble. *V. Hulkeana*, with its graceful panicles of bluish white flowers, has stood the last two winters well. It has formed quite a bush, and seems capable of enduring any severe weather. *V. epacridea*, which may easily be mistaken for a *Pimelea*, is a pretty rockery plant, as also is *V. Haasti*, *V. diosmæfolia*, *V. salicornoides*, and others; but among the strictly herbaceous species none equal the handsome *V. subsessilis*, represented in the annexed engraving. It is by botanists considered only a variety of *V. longifolia*, so common in every cottager's garden; but for garden purposes it seems to us distinct enough to deserve the name given above. A native of Japan, though unlike most Japanese plants, it is perfectly hardy even in exposed situations, and is likely to obtain a permanent place in the flower border. It grows about 2 or more feet in height, forming very dense spikes of charming large deep blue flowers, which make it a very effective and desirable plant. It may be propagated by division of the roots.—M. S.

#### NOTTS NOTES.

IT is curious to notice how Apples and Pears are fruiting this year. I have been very much exercised by the peculiarity of the disposition of Apples and Pears in our orchard this season. I have tried to find out a reason for this peculiarity, but I am obliged to say that I have not been able to arrive at a satisfactory one yet. I can get one that will do up to a certain point, then there is a break, and I have to begin again. There is only one thing that I am certain about, and as that is patent to everybody who goes into the orchard it does not say much for my penetration that that is the only thing that I have discovered in the Apple crop of 1884. I may as well say that the one thing that I have found out which has helped us in having a few Apples this year is shelter on the north and north-east sides. Of course everybody knows that shelter is necessary to an orchard on the north and east side of it, hence my discovery is robbed of its originality. I notice, however, that if everybody knows about it they do not carry out that knowledge in practice, because I can



see plenty of orchards which have no shelter on these should-be-sheltered sides ; so, perhaps, there's a lesson in my discovery after all. Our

breaks—open places in the hedge and between the Walnuts—and here it is notable that in the line of the wind (the spring north-easters) which



FIG. 53.—*VERONICA LONGIFOLIA SUBSESSILIS*.

orchard is protected from the north and north-east by a high undressed hedge and by a row of large Walnut trees. Occasionally there are

have come tearing in through these breaks, the Apples are very few indeed, and those that are lie on the side away from the wind and where the tree



self has sheltered them. That is so concerning those trees that bear fruit. Concerning those sorts that are not bearing, whether sheltered or unsheltered, and they are the majority of the trees in the orchard, I am at a loss to account for it, except by attributing it to that April frost, which appears to be the scapegoat for all the empty orchards this season.

Curiously enough there are two trees here of Minchal Crab that have not an Apple on them, and such a thing has not been remembered of them by the oldest person on the place. Again, Caldwell's, of which we have three or four large trees, have not an Apple on them. Pike's Pearmain, too, the same number of trees, not quite so large or so old, but just in their prime, are all empty but one, and that one stands at the top end of the orchard, and protected first by the hedge and Walnuts before mentioned, but in addition by a large Beurré d'Amanlis and a Catillac Pear tree. Now all the Blenheim Pippin trees are bearing; one of them has a very good crop upon it. This stands rather under a Walnut tree and close to the high hedge at the bottom of the grounds, but all the others have some fruit. Lord Lennox is bearing, but only on the side of the tree away from the north and north-east. Ribston Pippins, fine trees, are nearly bare; four have one or two fruits here and there scattered over them, like the "gleaning of Grapes when the vintage is done," and the fifth, and a large tree too, has only a peck of fruit on it, and this tree has about the same amount of protection from the large Pear trees alluded to above as the Pike's Pearmain has.

Two trees of Duchess of Oldenburgh, or as it is called hereabouts the Russian Apple, bear by a reciprocal law of alternation, one, one year, the other the next, and this has happened with unchanging regularity for the past six years; that I can bear witness to from personal knowledge. It is amusing to see the consistent regularity of this yearly arrangement. It is uncommonly convenient, I must say, as this, after the Early Julyan, is the first Apple that we gather. By the way, there is not a Summering of any sort, English or American, on the place; and were it not for two large trees of Yorkshire Greenings we should be in a bad state for a winter supply of Apples. These have a full crop on them. I mean to send you this Apple up some time to see if it is correct, because a local fruitist calls it Steathe's Incomparable. Of course Keswick Codlin has fruited in its usual form, so also has Lord Suffield. On some young trees there have been fair crops of Alexander, Crystal Palace, and New Northern Greening, and also another local winter Apple, Barton Freebearer. Normanton Wonder, a much-desired Apple by the cook, is bare this year. Besspools we do not expect to see, except now and then. When a crop does come gardeners hereabouts call it a Besspool year.

With respect to Pears Jargonelle was very thin this year, Williams' Bon Chrétien a little better, Louise Bonne de Jersey about the same, Beurré d'Amanlis on bushes in the garden very fair, on a large tree in the orchard a fair crop; Comte de Lamy a fair crop in the garden, so also Beurré Diel and Glou Moigean. There are no Bergamot Pears this year, no Huntingdons, a few Catillac, and then the list may be closed, leaving us with a poor supply of both Apples and Pears to face the winter with.

*Glare of the Garden Dahlia.*—A brother gardener goes into the garden of another brother, and on seeing a Dahlia says, "Oh, I see you have Glare of the Garden!" "No," says the other, "I have not, that is Crystal Palace Gem" (or Crystal Palace Scarlet, I forget the exact word). "I tell you," says the first, "that's Glare of the Garden. I got mine direct from Cannell." "I don't care where you got it," says number two, "that's Crystal Palace Gem, and I have grown it many years now." Is this so? Is Glare of the Garden only an old sort revived and sent out under another name? What shall we learn next?—H., Notts.

## CACTACEOUS PLANTS.

(Continued from page 492, last vol.)

THE true Cereuses having been noticed in the preceding papers on this subject, the three other groups which are now referred to the genus Cereus demand attention.

**ECHINOCEREUS.**—In general appearance, and particularly in the regularity and beauty of their spines, the plants grouped under the head Echinocereus are somewhat suggestive of the Mamillarias, or in a few cases of the Echinocactuses. The stems are mostly cylindrical, of moderate height, much dwarfer than the majority of Cereuses, and approaching to a semiglobose form; they are marked by longitudinal ridges either straight or spiral, and these bear the fascicles of spines sometimes in two series, differently coloured. The flowers differ very much in size, colour, and beauty; some do not exceed an inch in diameter, and others are fully 4 inches across; some are green or dull yellow, while others are of the brightest yellow, rose, or purple. In a horticultural point of view they are very interesting, for several of the most ornamental and free-flowering species are hardy in dry positions, and they all succeed in a cool frame or house, being therefore especially suitable for amateurs who have no convenience for growing the tropical Cactæ. Another important and valuable quality is the length of time the flowers last, in which respect they are quite different from the majority of their allies. Some will expand every day for a week, and in a few exceptional cases the flowers will continue opening at intervals for twelve or fourteen days. They also display a great partiality for sunlight, and generally open about mid-day or early in the afternoon, closing before dusk. The fruits of most of the species are edible, and pleasantly flavoured with the peculiar Gooseberry-like acidity, which it has been already stated is characteristic of the family; and further, some of them assume rich tints in ripening that are very ornamental.

The culture of the Echinocereuses is very simple, as where they are grown out of doors it is chiefly necessary to protect them from excessive rain or stagnant moisture in the soil, as they will endure very low temperatures, provided the soil and air be dry, without the slightest injury. This is the great difficulty with which we have to contend with in growing them out of doors in England; and it is safest to have a cool frame for their winter quarters, or a suitable covering if they cannot be readily moved. Mr. E. G. Loder, Weedon, Northampton, has been very successful with these plants, and on several occasions he has shown groups of the most attractive species at Kensington, when they caused quite a sensation, as few are aware of their beauty when in flower. The same gentleman fully explained his system of treatment at one of the evening meetings of the Royal Horticultural Society at Burlington House, the substance of which is the same as that indicated in the preceding notes; but plants have been left out at Weedon unprotected throughout severe winters. The Echinocereus in common with a few Echinocactuses and Opuntias do not, however, succeed on a level surface, and when placed out they should have a dry sloping bank near a wall, preferably in a southern aspect, as to insure their flowering well they need a thorough ripening.

**E. GONACANTHUS.**—This and the following were collected in the Rocky Mountains, and shown by Mr. Loder at Kensington on June 14th, 1881, when the Floral Committee awarded first-class certificates for them. Since then they have become great favourites with many persons, and the number of their cultivators is fast increasing. *E. gonacanthus* in particular is extremely handsome when flowering, and is not surpassed by any related species. It is dwarf in habit, rarely exceeding 6 inches in height, the stems ribbed and spinose, bearing the flowers in clusters on the upper part. The blooms are about 3 inches long and 2 inches across the mouth, of an intensely bright orange red, and possessing a lustre like that seen in the petals of some of the *Phyllocactus*, the bright green stigmas contrasting strangely with the other portion of the flower. They also continue expanded for a week or more, and under favourable circumstances last for nearly a fortnight.

**E. FENDLERI.**—Very distinct from the preceding, but almost as beautiful, is *E. Fendleri*, and the two make excellent companions for a rockery or similar situation. The last-named is rather stronger in growth than the other, reaching a height of 8 inches, cylindrical in form, and bearing two series of spines, the smaller radiating laterally and light in colour, the central ones much longer, very dark, nearly black, and upturned. Even when not in flower the plant is attractive, and is easily recognised when once seen. The flowers are sometimes as much as 4 inches in diameter, and about the same in length, varying slightly in hue from a dark rose to a rich shining crimson, very handsome and striking in bright sunlight. They have the peculiarity, however, of only remaining open for two or three hours at mid-day, closing and re-opening for a week or more. Engelmann states that in Mexico this opening and closing of the flowers is very constant, the former taking place at noon on each day, and the closing about 2 P.M., but under our cloudy skies the regularity is not so marked, and in dull weather the flowers often refuse to open for several days. The early summer months is the time at which the blooms usually appear, and like *E. gonacanthus* this species requires a sandy or rocky soil, though both can be well grown in properly drained pots.

Numbers of other species are known, but few are in general cultivation, though some may be briefly mentioned as distinct and beautiful. One of the best is *E. dasyacanthus*, which is especially notable for its regular and handsome fascicles of spines. Its flowers are also large and bright yellow, being produced near the summit of the plant, and opening about noon. In common with some other members of the genus it has remarkable number of stamens, as many as 1700 having been counted in one flower, while the fruit when ripe is of a fine purplish colour. *E. ctenoides* also has large yellow flowers and closely set fascicles of spines on narrow spiral ridges. *E. cespitosus* has fine and pretty spines symmetrically arranged; *E. longisetus* is notable for its long deflexed spines; *E. stramineus* forms dense masses of heads like some of the *Mamillarias*, has long formidable spines, and bears dark rose-coloured flowers. *E. phæniceus*, *E. pauciflorus*, *E. chloranthus*, and *E. viridiflorus* are also curious forms. One very distinct variety in Mr. Boller's collection must not be omitted—namely, *E. pectinatus rufispinus*, which has numerous neat brown spines, and bright shining rose-coloured flowers 3 inches in diameter.

**PILOCEREUS.**—The "Old Man" Cactus is one of the curiosities of plant life which always attract attention, and its appearance is certainly sufficiently strange to excite some surprise. *Pilocereus senilis* derives both its botanical and popular names from the large number of long silvery white hairs which cover the upper portion of its stem, and impart a peculiar resemblance to the hoary head of an aged man. These hairs are really soft weak spines, which attain the length of several inches, and instead of spreading regularly, or projecting rigidly, as in other members of the family, they are flaccid and pendulous, thickly clothing the stem. As was remarked, however, in the case of the *Mamillarias*, it is necessary to protect this plant from dust if it be desired to preserve its beauty, for it has a very disreputable and unwholesome appearance when what should be silvery white hairs become dingy and stained. It is, therefore, preferably grown in a small glass case, where with a few other select Cactuses it will be seen to excellent advantage. Though *P. senilis* is one of the best known species in small collections, yet large plants are seldom seen, and probably the finest in England is that grown at the Oxford Botanic Garden. This is 16 feet high, of proportionate diameter, and has been in cultivation at least a hundred years, having been originally imported by the Duke of Bedford, and transferred at the dispersal of the unique Woburn collection to Oxford. Even this height is said to be exceeded in its native home of Mexico, where specimens have been described as reaching the height of 20 feet. One character common in varying degrees to all the Cactæ, but very strongly developed in the "Old Man" Cactus, is the large quantity of calcium oxalate secreted in the cells of the stem. To such a degree are these crystals formed, that



old stems when cut lose the succulent portion of their structure, but still preserve their form, becoming almost like petrified stems, solid, heavy, and stone-like. Examples of this kind can be seen in the museums at Kew, the whole centre of the stem being filled with lime crystals.

Several other species are in cultivation in botanic gardens and a few collections, perhaps the best known being *P. Celsianus*, which has extremely fine hairs closely pressed to the surface of the stem, and having a cobweb-like appearance; very distinct from *P. senilis*. There is also one dwarf-growing rare species, named *P. chrysomallus*, which has golden spines. The *Pilocereus* very rarely flower in cultivation, though they are not difficult to grow, succeeding under the same treatment as the other tall-growing *Cereuses*.

**ECHINOPSIS**.—The fourth group of species arranged under the wide term *Cereus* includes a number of plants at one time considered to be related to the *Echinocactus*, but which are readily separated from that genus by the long tubular or funnel-like flowers produced from the side of the stem instead of near the summit, as in the Hedgehog Cactus. From the true *Cereuses* they are also distinguished by their dwarf globular stems, and from the *Echinocereus* by the long flowers and smooth seeds. Many of the species are very handsome when in flower, and several are as hardy as the *Echinocereuses*, being therefore employed on rockeries or in warm situations out of doors with *Opuntias* and a few *Mamillarias*. Owing to this hardness of constitution they are useful as window Cacti, and are generally grown for that purpose in the miniature pots before mentioned. Some do not flower quite so freely as their relations, but they are easily grown, almost the only requisite being to avoid giving them too much water either in the soil or in the stems, as they are very liable to decay, particularly during the winter.

**E. EYRIESI**.—One of the best known of the species, and when in flower it is undoubtedly one of the most beautiful and interesting in cultivation. The stem is very regularly globular, with small angular ridges, which bear small dark spines set in little tufts of white hairs. The flowers are 6 to 8 inches long, like a curved funnel, and are 4 to 5 inches across at the mouth, formed by numerous tapering white petals spreading symmetrically. A most important character is the delicious fragrance possessed by the flowers, which is very wonderful and most pleasing. Referring to this plant, Dr. Lindley has written in the following eulogistic but well-merited terms, "When young the blooms resemble long sooty grey horns covered with thick shaggy hairiness, and would never be suspected to conceal a form of the utmost beauty or a clear and a delicate complexion. When the hour of perfection has arrived, and the coarse veil of hair begins to be withdrawn by the expansion of the unfolding petals, one is amazed at the unexpected loveliness which stands revealed in the form of this vegetable star." The plant is a native of Mexico, whence it is said to have been first introduced by Sir John Lubbock, who forwarded specimens to the Royal Horticultural Society. A variety named *glaucus* has also been obtained, but it differs little from the type except in the slight glaucous tinge of the stem.

**E. OXYGONA**.—This has been described as an *Echinocactus*, but is now included with the *Echinopsis* for the reasons already named. It is somewhat similar to *E. Eyriesi* in the form of the stems and the ridges, but the spines are brown and the tufts of hair or pulvini are not so white. The flowers, however, are extremely beautiful, and by many would be considered more handsome than those of the preceding species. The flower tube in good examples is fully 8 inches long and 4 inches in diameter, less contracted than in *Eyriesi*, and the petals not spreading so horizontally. In colour the outer part of the tube is curiously marked with green and red, the petals being white stained with red on the margins, which gives them a very pretty appearance.

**E. CAMPYLACANTHA**, Pfeiffer (*Echinocactus* and *Cereus leucanthus*).—This is a Chilean plant, where it was found by Dr. Gillies at Mendoza, and the plants introduced first flowered in the Royal Horticultural Society's Gardens in 1831. It has a conical stem with fourteen to sixteen ridges and strong spines, the central one in each cluster being 3 inches long, whitish, and curved upwards. The flower tube is 5 to 6 inches long, dark green, with short ovate petals, white tinged with pink, the expanded portion of the flower being 2 to 3 inches across.

There is a score or more of other species, each of which possesses some attractions. *E. cinnabarinus* has very bright cinnabar-red flowers, which contrast agreeably with the light-coloured form. *E. Pentlandi* has orange-red flowers, and a variety named *coccinea* is very bright red, almost scarlet. *E. multiplex* has whitish flowers, but its variety *crustata* is more noteworthy than the type. It has peculiarly contorted stems, the ridges being apparently folded transversely, as if the plant had been compressed laterally. Like other crested varieties of *Cactææ*, it would not at a glance be thought to be related to the species of which it is considered a variation. *E. pulchella* has pale rose flowers produced in the spring months; *E. Schell-hasi*, flowers white like *Eyriesi*; this is said to have been crossed with *Cereus speciosissimus*, and plants produced that presented some resemblance to both parents, but whether they ever flowered or not I have not been able to ascertain. *E. Zuccariniana* is a beautiful species with large white flowers, very fragrant and resembling Jasmine; it has also produced a handsome rose-coloured form by a cross with *E. oxygona*, and a crested variety is also grown. Many others are in cultivation, Mr. Peacock numbering thirty-two species and varieties in his collection, and the majority of these have large handsome flowers.

#### PHYLLOCACTUS, Link.

The two most valuable genera in the whole Cactus family, considered from a horticulturist's standpoint, are undoubtedly the *Phyllocactus* and the *Epiphyllum*, and they are the only two which can be said to have partially escaped the modern neglect of the *Cactææ* as garden plants. These are still established favourites in many places, but they are comparative strangers to numbers of cultivators who might advantageously include them in their collections. Profuse in flowering, with large showy blooms, most variously coloured, from the richest crimsons and brightest scarlets to the most delicate rose and blush tints, they are

unexcelled in beauty by any of the ordinary plants grown for decoration. So far from being fastidious or requiring any particular routine of culture, they are often treated with utmost carelessness, stored in "out-of-the-way" corners, and left in a measure to take care of themselves; yet do they repay their ungenerous hosts with abundance of glorious flowers, and then only are they brought into sight, to be again consigned to the old quarters when the flowering season is over. Like every other plant that is easily grown the *Phyllocactuses* and their allies respond most promptly to liberal treatment, and well as they may seem to be under the careless system, they are incomparably superior where their moderate requirements are studied and provided for. It is sometimes said that the flowering period is so short that they are scarcely worth the space they occupy for so many months, but assertions such as these have been formed upon limited experience. *Phyllocactuses* may be had in flower for three or four months in the year by having a dozen or two plants in different stages, and with the *Epiphyllums* the flowering season can be prolonged for at least six months out of the twelve in an almost unbroken succession. Outside the ordinary decorative plants, such as *Pelargoniums*, &c., there are very few which possess so many recommendations as these, and it is to be hoped that their merits will become more widely recognised.

The genus *Phyllocactus* as now constituted includes thirteen species, natives of tropical America, Mexico, and Brazil, and are chiefly distinguished by their flattened leaf-like branches, with a prominent midrib, and by the large many-petalled flowers being produced from the notches in the edge of the stem or branches. These characters suffice in a broad sense to separate them from *Cereus* and *Epiphyllum*, their near neighbours. They are also epiphytal in habit, but this character is shared by several other *Cactææ*, and is therefore only useful as a cultural guide. In gardens, and even amongst botanists, there has been much confusion respecting these plants, some of the species having been referred to *Cereus*, some to *Epiphyllum*, and most of the older forms appear in works under the title *Cactus*. The principal confusion has, however, been between the *Epiphyllums* and the *Phyllocactus*; for even now, although the distinction has been clearly pointed out by recent writers, the two names are frequently employed in current literature as synonymous.

**CULTURE**.—The most important item in the culture is the soil, and this is easily provided. A light turfy loam should form the basis of the compost, and to this may be added one-third of leaf soil, old dried cow manure, and sand, well mixed together and employed in a rather dry state. The pots must be well drained, as the plants do not require a great depth of soil, and any approach to stagnation about the roots is the surest means of causing failure. When plants have attained a good size and the pots are filled with roots an annual top-dressing of soil and manure will be sufficient without repotting them, and is even preferable, as the plants appear to flower more profusely when retained for some years in the same pots. It is, however, occasionally necessary to turn the plants out to see that the drainage is in proper condition. As regards temperature, *Phyllocactuses* are by no means particular; they will succeed in an unheated house or frame, in a greenhouse or in a window, and in all these positions the majority will flower freely, but the best results are obtained by having them in a warm greenhouse, what is termed an intermediate house, during their growing period. After the growth has been completed they can be placed in cooler and more airy quarters, or a similar result can be obtained by keeping the frame closed while growth is advancing and ventilating freely afterwards.

**PROPAGATION**.—They are readily increased by means of cuttings, which, if inserted in sandy soil in moderate heat and kept rather dry for a week or two, only slightly syringing them, will form roots, and can be placed singly in 60-size pots. Seeds are produced freely, and these may be sown in pans of light soil, placed in a dry part of the stove or in a warm house until they germinate, when a light position must be afforded the plants until they are large enough to be potted singly.

#### SELECT SPECIES.

**P. ACKERMANNI**, Haworth.—One of the most handsome and best known forms in cultivation, remarkable alike for the large size, rich colour, and profusion of its flowers. It has been regarded by some writers as a hybrid, and is mentioned as such by Herbert, but upon what evidence does not appear. Lindley, on the other hand, gives a full account of the plant, and states that it was brought from Mexico by Mr. George Ackermann, in whose honour it was named by Haworth, the original stem having first flowered in Mr. Tate's nursery in June, 1829. A somewhat peculiar circumstance is, however, mentioned by the same authority—namely, that a seedling raised by Mr. Smith, gardener to Lord Liverpool, Coombe Wood, was flowered at the same time, and proved so similar in its characters that they could only be distinguished by a close examination. Whatever it be there can be no question respecting its beauty, and that is sufficient to recommend it to the attention of the readers of these notes. The flowers are 6 to 8 inches in diameter, with rich crimson shining petals, the outer ones lighter in colour. The stems are flat and deeply crenated or notched, bearing the flowers on these depressions. Several varieties and hybrids have been raised from *P. Ackermanni* by crossing it with species of *Cereus*, especially *C. speciosissimus*, which has yielded a race of handsome forms differing in the colour and size of the flowers, but chiefly shades of crimson or red. It is also said that *P. Ackermanni* has been successfully crossed with *Cereus flagelliformis* in France, the plants resulting differing greatly from both parents, but I have never had an opportunity of seeing these forms. A beautiful hybrid between *P. Ackermanni* and *P. crenatus* has been raised and flowered in this country, in which the inner petals were of a soft pale rosy tint and the outer a deep crimson, affording a pretty contrast. One valuable character of this species and its varieties is that they may be had in flower from May to



August or even longer than that with a good stock of plants brought forward a few at a time.

The woodcut (fig. 54) represents a flower and portion of the plant reduced.

*P. ANGULIGER*, Lemaire.—An extremely distinct plant, easily recognised by the deeply angled stems 2 to 3 inches in diameter, which are indented on the margin somewhat like a large saw with the teeth turned upwards, forming blunt triangular lobes. The flowers, which are 3 to 5 inches in diameter, the petals white, the sepals narrow, orange or yellowish, and spreading, open during the day, and continue expanded for a considerable time, giving out a powerful fragrance. It was found by Hartweg during his travels in the west of Mexico growing upon trees in a forest where Oaks predominated, and specimens were by him sent to the Royal Horticultural Society.

*P. BIFORMIS* (*Disocactus biformis*, Lindley).—Though not equal in attractions to other *Phyllocactus*es, this is an interesting plant, forming



Fig. 54.—*Phyllocactus Ackermannii*.

in appearance a link between those species and the *Epiphyllum*s, but it is not likely to become of much garden value, and will only be grown to make a collection complete. The plant was introduced to England from Honduras at the same time (1839) and by the same persons as *P. crenatus*, and was described as a *Cereus*, but was subsequently constituted a genus by Lindley under the name *Disocactus*, and by Salm Dyck under the slightly different title of *Disisocactus*. The selection of these names was doubly unfortunate, first because there is a genus termed *Disocactus* quite distinct from this, and secondly because the plant does not possess sufficient characters to separate it from *Phyllocactus*, to which it is now referred by botanists. Plants in cultivation are usually rather small, but they will attain the height of 3 feet, branching freely and forming a rather graceful fleshy shrub. The branches are narrow, flattened and leaf-like, reddish on the margin, and bear the flowers at the points. The petals are narrow, 2 to 3 inches long, and partially combined into a kind of tube of a pale rosy pink colour. The flowers, however, do not last long, and are followed by bright red fruits about half an inch long, which, being produced abundantly, have a rather pretty effect.

*P. CRENATUS*.—A magnificent species, undoubtedly one of the best in the

genus, and one that has proved extremely valuable in the hands of hybridisers, as with the crimson-flowered species it has yielded a number of intermediate tints, such as soft rose, blush, and pale crimson. The stems are flat as in the others, but they are only slightly crenated; the flowers are fragrant, of great size, 6 to 8 inches in diameter, with numerous lance-shaped petals, pure white and spreading. It is a native of Honduras, whence it was sent with several other plants by Sir Chas. Lemon, Bart., to Mr. G. Ure Skinner, in 1839, and it first flowered four years after its receipt. Seven years later—namely, in 1850, Mr. Gordon succeeded in raising at the Royal Horticultural Society's Gardens a series of remarkably beautiful hybrids between this species and *Cereus speciosissimus*, which attracted much admiration at the time, and are still found in a few collections. The pollen was taken from the *Cereus*, making the *Phyllocactus* the seed-bearing parent, and the result was that the seedlings resembled the latter in form of the stems and flowers, but the colours more nearly resembled the *Cereus* slightly softened and varied. All these hybrids proved extremely floriferous and useful garden plants. This cross was repeated in 1870 by Col. Charleton of Braddon, Isle of Man, but a greater variation in colours resulted, the tints ranging from the pure white of the *Phyllocactus* to brilliant scarlet. Mr. C. M. Hovey, Boston, United States, also produced a race of hybrids between *Phyllocactus crenatus* and what he terms *Epiphyllum splendidus*, but which is presumably some scarlet form of *Phyllocactus*. These were raised about the same time as Col. Charleton's, the flowers of all being remarkably large, from 8 to 12 inches in diameter, and very freely produced. The best of them are the following—Alice Wilson, orange scarlet; Mauve Queen, purplish pink; Orange Gem, shining orange; Pink Queen, mauve pink; Sunset, rich crimson, and Refulgence, dark scarlet. A fine variety of *P. crenatus* is grown at Kew under the name of *Vogeli*, which has very large flowers of a rich rosy tint, and probably originated from some similar cross to those already named. *P. Gordoniana*, which has bright rose-coloured handsome flowers, appears to have had a similar origin.

*P. HOOKERI*, Salm.—In the "Botanical Magazine," plate 2692, a figure of a fine white-flowered *Phyllocactus* was given under the name of *Cactus Phyllanthus*, an extremely old inhabitant of English gardens. In the opinion of several other writers it is quite distinct from and superior to that species, the name given above being consequently bestowed upon it. The branches and stem are flat and deeply crenated, 2 to 3 feet high, producing the flowers on the margin. These have a long narrow tube, and tapering white petals 2 to 3 inches long and about a quarter of an inch broad. It possesses a most agreeable fragrance, and usually flowers in the summer months from July to September.

*P. LATIFRONS* (*Cereus oxypetalus*, Decandolle).—A very strong-growing species, quite the giant of its family, producing stout flattened stems 4 to 5 inches broad, deeply crenated, and 8 or 10 feet high. A fine specimen, with several stems fully 8 feet in height, is grown in the Kew collection, and when in flower it has a remarkable appearance. The flowers seem to share the large dimensions of the plant, for they are 7 to 8 inches long and about 6 inches in diameter, the petals of a delicate clear creamy white, the sepals and tube of a reddish hue. It is a native of Mexico and some districts to the south of that country, and has been in cultivation for a considerable time, though the date of its introduction is uncertain.

*P. PHYLLANTHUS*, Salm.—As the oldest cultivated *Phyllanthus* this possesses a certain degree of historical interest, but it is not particularly beautiful, and is far surpassed by *P. crenatus*, *P. Ackermannii*, and the handsome hybrids that have been mentioned. Its branches are flattened and crenated, bearing long tubular flowers in the style of *P. Hookeri*, but not so broad at the mouth; creamy or greenish white, opening at night, and possessing a peculiar odour. According to the "Hortus Kewensis" the plant was cultivated by Phillip Miller in 1710, and a very good figure was given in Dillenius's "Hortus Elthamensis" in 1732, with a long description of the plant under the name of *Cereus Scolopendrii folio brachiata*. It is the Spleenwort-leaved Indian Fig of Miller, and is said to have been originally obtained from Brazil.

*P. PHYLLANTHOIDES*, Salm (*Cactus speciosus*, Bonpland).—An extremely beautiful species, and, like *P. Ackermannii*, one of the most floriferous of the family, continuing in bloom during the greater part of the summer. With such an important character it is surprising that hybridisers have not employed the species more frequently in crossing with others, but it has no doubt contributed a few to the series of garden forms, and some of those with rose-coloured flowers can be traced to it. In the typical form the stem is flat, the margin crenated, and the centre reddish. The flowers are about 2 to 3 inches long and 3 to 4 inches across at the mouth, the petals being ovate or lance-shaped, and coloured rose and white in irregular streaks, very delicate and handsome. As *Cactus speciosus* it was mentioned by Bonpland, who, with Humboldt in 1801, found it growing on trunks of trees at Turbaco, south of Carthagen. Plants or seeds were introduced to Europe by those travellers, and the first flowers were produced at Malmaison in May, 1811, plants also flowering about the same time in the Montpellier Botanic Garden.

Of other *Phyllocactus*es which do not need detailed description the following are worthy of mention:—*P. caulorrhizus*, which has handsome flowers 6 inches in diameter, the petals white, and the sepals pale green; *P. Jenkinsoni*, a hybrid or seedling variety, with large beautiful and richly coloured flowers of a brilliant crimson-scarlet hue, very free, and a favourite with many growers. Concerning this plant, as also in reference to the adaptability of *Phyllocactus*es as window plants, Mr. J. Udale, Shirecliffe Hall Gardens, Sheffield, writes:—"Cacti are associated with my earliest memories, for in a window at home we had a plant of *P. Jenkinsoni* and one of *P. speciosus*, each of which has flowered profusely almost every season for the last thirty years; and as pruning was frequently resorted to, their progeny are now innumerable. The plants were grown in the window during autumn, winter, and spring, being placed in the open air during the summer; and with such simple attention they have for so many years been a source of considerable pleasure." *P. multiflorus*, a floriferous form, with reddish-crimson flowers, the surface of the petals having a peculiar satin-like lustre, is a similarly useful variety; whilst one named in honour of Mr. Peacock is marked by a very rich shade of crimson.

Numbers of fine varieties and hybrids have been raised at various times, but there yet remains plenty of room for further additions to the list of useful *Phyllocactus*es. By crossing amongst themselves with the best of the *Cereuses*, or even with the *Epiphyllum*s, some grand results might be



obtained. The last-named cross has been attempted, but unsuccessfully, though if one has failed others might succeed, and a totally distinct race would doubtless be produced.—LEWIS CASTLE.

## FUNGI AND DISEASES OF PLANTS.

By T. J. Burrill, Illinois Industrial University.

(Continued from page 222.)

### ORIGIN AND DEVELOPMENT OF FUNGI.

THE idea is too common that such things as mould on moist bread, black velvety stains on the surface of Peaches, &c., may spontaneously occur through some combination of climatic effects, without the necessity of pre-existing germs of each particular kind; but these things no more arise in this manner than a young Peach tree starts from a ball of clay peculiarly mixed, or from the seed of an Oak. Each fungus produces its own seed-like bodies, "spores," and from these alone is their reproduction possible. One mildew does not change it into another one, and none are anywhere developed except as offspring of parents, as among the higher inhabitants of earth. Where, therefore, the germs of any particular parasitic fungus do not exist, no possible combination of circumstance or of things can cause such fungus to spring up into life and development. Were it not for the existence of the special kind of spores capable of germination, no amount of showery weather would make Wheat rust, nor fog and rain cause Grapes and Peaches and Apples to rot. Neither are these spores gifted with any powers of distribution beyond that afforded in the regular order of nature. They are carried by the wind, but cannot float in still air; gravitation as surely brings them to earth, save when carried by stronger forces, as it does cannon balls and meteorites. As we gain knowledge of the facts and processes of Nature the powers of good or evil genii of the air diminish, and at last their existence is altogether denied. No one of intelligence now believes witches by acts of will blast the crops and curse the fields. The reign of universal law, affecting alike the minute and the great, the inorganic and the organic, the dead and the living, the nerveless and the sentient, is acknowledged and verified by the science of our day. Things do or do not take place, not according to chance or supernatural power, but according to the regular and orderly procession of natural law established and perpetuated by Him in whom there is no variableness nor shadow of turning. Every effect has its cause, and we ought never to think any of these causes are past finding out or beyond the comprehension of man. With the knowledge we now have concerning all, including the most obscure and minute species of living things, there can be no hesitation on the part of the informed in accepting the present existence of any fungus growth as positive proof of a pre-existence of its special germ, and of the development of that germ under sufficiently favourable conditions. Plant diseases occur as new in given localities though the soil, climate, and cultivation of crops are as nearly as possible as they have been for many years. It is only recently that one of the mildews on American Grapes appeared in Europe, though it is already widely spread on the continent and is the cause of much alarm. The conditions of weather and of the Vine have for generations been as favourable for the growth of this mildew as they are now; only one element has been wanting—the spores. The latter have finally crossed the ocean, in some way carried by man, and now the rapid development proves the suitability of the existing conditions for growth, but their inadequacy for original production. In the same way the black rot of American Grapes can be traced to infection from Europe, and the same lessons arrived at.

A few years since a parasitic fungus previously known in South America, gained introduction to southern Europe and gradually spread over the continent, carrying destruction to the Hollyhock as it went. Reaching England its ravages were especially marked, since considerable prominence is given this popular flowering plant. The Hollyhock is closely allied to the Cotton plant, and as these fungi sometimes grow on botanically related species there was cause for apprehension lest the parasite should be again transported across the Atlantic and bring serious trouble to our sisterhood of Southern States. The watery bearer was actually passed, but fortunately the Cotton did not prove susceptible to its withering effects.

The primitive origin of these species of fungi we will not discuss. They in some way, at some time, came into existence, and in the same manner that other species of living beings, not excluding man, were originally produced. Evolution has been studied, and in its light species are said to be transformations of previously existing species; but this does not in any practical sense affect the foregoing, because the process is reckoned by centuries and eons, not by years or the generations of men.

It is possible that change of habit sometimes occurs to such an extent that a fungus species not formerly capable of growing on a certain host species, becomes adapted to the latter; but nothing of this kind has been definitely observed. There is, however, the widest variation among the species of parasitic fungi as to the limits of their restriction to certain host plants. Many are found only on one species; very few (except such as have a peculiar alternation of habitat after the manner of many animal parasites) grow on plants belonging to different botanical families. Yet a few affect many species of flowering plants, even sometimes those of quite different orders. In the latter cases there is usually more or less difference in the vigour and appearance of the fungus on the different hosts; so that it is not easy to decide by form and appearance alone whether a certain parasite on a certain nourishing plant is, or is not, a distinct species, or only a modified condition of something known elsewhere. Artificial cultures, by transferring the spores from plant to plant and watching their development, are the only criteria when such doubts occur; and this is entirely feasible, though it requires much care and skill to secure reliable results. The so-called black rot of Grapes is caused by a minute fungus parasite of low and simple organisation affecting the young stems and leaves (petioles and veins), as well as the fruit. There is also a disease of the canes and leaves (petioles and veins) of Black Cap Raspberries and Blackberries caused by a little fungus so similar in every way as seen under the microscope that one is inclined to pronounce them identical; but cultures prove them distinct—a point of considerable practical importance.

### GERMINATION AND PENETRATION.

The next thing deemed of most importance is to fully comprehend that

these parasites always germinate outside the plant tissues and gain entrance, if at all, only by mechanically penetrating the epidermis, or other surface coat. An unsubstantiated opinion too commonly prevails that in some way the spores may be taken up by the roots with water and carried with the latter to any part of the plant. This assumption is founded upon a misconception of the manner that plants take water from the soil, and of the way it traverses the plant tissues. It is true there are in most plants elongated ducts or tube-like vessels, the open cavity of which is sometimes large enough to be seen in cross section by the unaided eye, and large enough to pass many fungus spores; but these cannot, in any just sense, be compared to the arteries and veins of animals. The truth is, when there is any considerable movement of the watery fluids in plants, these ducts are always filled with air, not with liquid material. If a sapling in full leaf, and consequently in its most active state as to the ascent of water to supply the marvellous amounts transpired, is cut and a portion of the stem thrown into water, the latter will be sucked into the tissues to the amount of 10 to 20 per cent. of the weight of the green stem, clearly showing that the wood was not previously full. Other experiments and investigations prove that the water normally ascends (and descends sometimes) through the substance of the cell walls themselves, not through the cell cavities. Now, no one is able to see with the best microscope ever made the inter-molecular spaces in these cell walls, though water, itself made up of solid molecules, passes through them to gain entrance in the first place to the roots, and through the millions of them in its progress to the upper portions of the plant. No fungus spore can pass such filtering. The methods of freeing liquids from solid particles practised by chemists are coarse and sorely inadequate compared with that in operation in plants. It is absolutely impossible for any solid body large enough to be seen at all by the highest microscopic powers in existence to pass through one such cell wall, much less through the unnumbered myriads composing the tissues of one of our ordinarily cultivated plants. All spores of fungi rarely are less than one five-thousandth of an inch in diameter, while a body less than one hundred-thousandth of an inch can be seen and studied, and as the molecular openings through which water passes are still less, probably much less, we may be certain that such spores are effectually excluded from the circulation in the plant tissues. Direct examination also proves that the entrance of the fungus is affected by piercing the surface; the germinal tube accomplishing this by its power of absorbing the substance at the point of contact, or by reaching and passing through a stomato. A thick epidermis is often a complete safeguard against the former method, this alone being sufficient to account for the immunity of certain varieties from diseases which so nearly exterminate others. It is scarcely possible that any parasitic fungus should be able to make its way through the corky envelope of tree trunks, &c., which we call bark, so long as the latter is free from cracks or wounds.

It must be remembered that to exist a fungus is as dependent upon an organised structure as are other plants and animals. It is not possible that this solid structure can be dissolved and life continue; it is not possible that a fungus spore can be liquified, absorbed, and reorganised. As well might a criminal think of reducing his body by some chemical process to a liquid form in order to pass through the merciless grating of his cell window, and live afterward as a man.

As a practical demonstration of the non-absorption and non-circulation of fungus spores in the tissues of plants, nothing can be more satisfactory than the results as known of putting bunches of Grapes in paper bags to prevent the rot so prevalent in our country. These diseases, for there are several of them, are perfectly prevented by excluding the spores of the fungi which produce them from the fruit itself, though the rest of the Vine is not protected. As a matter of fact, other parts of the Vine are parasitised by the same depredators, and sometimes serious injury done; but the effect is necessarily different from what it is in the true pulp of the fruit. In these cases, and in most cases, the mycelium, or root-like portion of fungi, spreads but slightly from the first point of entrance, not more than a few hundredths of an inch in the stems and leaves, to a greater distance in the fruit. But a limited number of species uniformly send their mycelium very widely through the affected plant. Smut of Wheat shows itself only in the head, but the fungus starts in the germinating plantlet and traverses the whole length of the straw.

The conditions of germination are also important elements in a study of plant diseases due to fungi. The spores are very simple in structure; each consists of a single cell formed of an enclosed mass of plastic substance (protoplasm) around which are two coats, the inner thin and flexible, the outer usually thicker and much less elastic. In germination the outer is pierced or cracked, and the inner coat protrudes as a long tube containing still the soft internal substance. This tube is that which penetrates the plant, becoming perhaps a hundred times as long as the spore before gaining access to the hypodermal tissues. A proper temperature, varying with the species, is essential for this process, but still more marked are the conditions respecting moisture. A fungus spore can no more germinate without water than can a seed of a flowering plant, though neither requires to be immersed in water. Damp air, such especially as we have during fogs, favours the germination and penetration of fungi. Sometimes these processes take place on leaves and fruit when more or less covered with little drops of dew. In bagging Grapes, should any of the rot-spores be included it is by no means probable that they would germinate on account of the want of water, and this is the secret of Grapes so often escaping the disease when the Vines are protected by being trained under the eaves of a building or similar shelter. This influence of water upon germination is one of the important reasons why most parasitic fungi make worse depredations during wet than during dry weather. In most cases the spores themselves are more readily and widely distributed when dry.

**VIOLAS.**—These have done so well this year in many places that they will no doubt be more cultivated than they have been. In Countess of Hopetown we have a great acquisition, for it is a robust-growing short-jointed variety of close compact habit and a thoroughly good bloomer; not so pure a white as Mrs. Gray, but then it never flushes in colour as Mrs. Gray sometimes does. It is a very fine bedder. Mrs. Gray is still



in full bloom with me, and the flowers of this variety are deliciously fragrant, and it is a valuable bedding variety. Countess of Kintore and Mrs. Dr. Hornby, two lovely light purples with white blotches, will be everybody's Violas, and they are most attractive in the garden.—W. DEAN, *Florist, Walsall.*

## THE INSECT ENEMIES OF OUR GARDEN CROPS.

### THE BEET AND THE MANGOLD.

As the plants above named are nearly related, it is no wonder that their insect foes are the same. If there be any difference, I think it might be shown that the Beet, in the usual course, is less infested than the Mangold, but the reason may be that the Beet is the one more carefully looked after where it is cultivated. Though the Mangold crop has become now of considerable importance, the circumstances under which it is generally grown forbid its receiving such attention as can be given to vegetables of which the crops are small. A few of the insects that resort to the Turnip are also visitors to the Mangold, nor would it be astonishing if most of the Turnip species appeared upon that plant. Such, however, does not seem to be the fact. Thus the wireworm—that is to say, the grub or larva of some one of the beetles in the genus *Elatér*, especially *E. lineatus*, which is very hurtful to the Turnip, has been reported as attacking the Mangold. It would not be extremely improbable, since the taste of the insect varies; yet, some years ago, when Miss Ormerod took much trouble in collecting and tabulating reports concerning the wireworm, made from places widely distributed, no complaints were made of injury done to the Mangold. Possibly the insect, which some gardeners have referred to by this name as causing occasional damage, is one of those that have been called false wireworms, more particularly the species of *Julus* and *Geophilus*, otherwise styled millipedes and centipedes, and which pursue a similar mode of life to the true wireworm. Their strong long bodies might entitle them to the name, but they are many-footed, while the beetle grub has only six feet. Moreover, though less in size than the millipedes, it is guilty of a greater amount of mischief wherever it appears.

The caterpillars of two moths that are notorious enemies to our Turnip crops are likely to be found every year upon the Mangold. The first of these, *Agrotis segetum*, is a very abundant species; popularly called the Turnip Moth. It is, in the larval state, a feeder upon many vegetables, and also, occasionally, on corn and Grasses. That of the second species, *A. exclamationis*, which, from markings upon the wings, is named in English the "Heart-and-Dart," is not quite so promiscuous a feeder. The two caterpillars are in shape and colour nearly alike, greenish grey or brown, with pale lines and dark spots, but that of *A. segetum* is rather shorter and stouter. In their habits there is a difference noticeable. The parent moths of *A. segetum* deposit eggs during June upon the young Mangolds, and the newly hatched caterpillars feed above ground for a month or perhaps longer, then descend to the roots, attacking these and the bulbs through the autumn. Some of the moths come out in November; the greater part of the annual brood remain as caterpillars till the spring, and enter the chrysalis state in May. With *A. exclamationis* the order is similar, with this exception, that the caterpillars hide beneath the earth during the day certainly, but leave their retreats at night to devour the stems and leaves, hence a thick coat of soot applied to the soil is very serviceable with this species; for the other it is needful to employ poisonous solutions or decoctions, which, however, the caterpillar will often evade by dexterous delving.

The beetles of the genus *Silpha*, one group of the carrion beetles, used to be considered harmless in gardens, or even friendly to horticulture, as living upon decomposing animal or vegetable substances and living insects. For instance, the four-spotted *S. quatuor-punctata*, which reminds us of the ladybirds (*Coccinelle*) in its appearance, goes from tree to tree in search of caterpillars, and the smooth-backed *S. lævigata* boldly attacks and conquers various insects much larger than itself. About forty years ago, however, the discovery was made almost simultaneously in France and in Ireland that the grub or larva of *S. opaca* could devour the leaves of the Mangold and produce mischievous results. During that year, and several years following, the Irish crops of Mangold were much affected; but, so far as we know, only a few stragglers were observed upon English plants. Some persons attributed this plague of beetles to the free employment of putrid manure. That might indeed account for the appearance of the insect, yet scarcely explains why it should desert what is presumed to be its natural food. In shape, though not in colour, the grub of *S. opaca* resembles the tribe of woodlice. It is squat and rounded above, the edges of the segments being saw-like, and the surface black and shining. It was

noticed that the attack was made upon the leaves only, from the middle of May to the middle of June, when the grubs changed to pupæ in the earth. The beetles came forth in July. They are blackish or brown, with numerous small indentations on the wing-cases, half an inch long, the thorax much broader than the head, which has large oval eyes and club-shaped horns. We are not in a position to say positively how this grub could be effectually got rid of should it damage young plants of Beet or Mangold. Probably the customary applications for the Turnip beetle or fly would be of utility, and the substitution of some artificial manure for that of the farmyard or stable.

We proceed to mention another insect, smaller, and belonging to the fly order, which may prove a serious foe to the Mangold in the future, although it had been very little noticed previous to 1880. Curtis had described some time before a Beet or Mangold fly (*Anthomyia Betæ*) the maggot of which lived in the leaves of those plants, making those attacked by it dry and withered, while the healthy progress of the vegetable was apt to be checked. In the above year it was complained of throughout England, and as far north as Dumfries. The counties most infested were Cumberland and Westmoreland, probably because the early brood of the maggots in those districts happened to be very abundant, for two attacks were noted, the first when the Mangolds should have been ready for thinning, and the second during August. There were in some districts no signs of the maggot at all observable until that month, and then the vigour of the plants seemed to throw off the injury. Elsewhere the June attack was so severe that the Mangolds were not left to run the chance of another, but were cleared away. At Sparham farmers found flies on the wing in September, and later on infected leaves were gathered having young maggots.

These facts point to the occurrence of two or three broods in a season. Doubtless the start is made by flies which emerge during spring from pupæ that have wintered in the ground. Both sexes are ashy grey, with dark lines and hairs, two-winged; the males have large eyes and a narrower abdomen than the female fly. The minute white eggs are laid in patches; twenty or more have been counted on a single leaf, though all evidently do not hatch, or, if they do, the maggots die young, in part, perhaps, owing to a parasite which may help to check the increase of the species. When adult, these maggots are nearly a third of an inch long, yellowish green, without feet, and thickening from the head to the tail. Some of the pupæ have been discovered in the leaves, but usually the insects quit these at the period of change, in order to enter the earth, where they go to the depth of 2 or 3 inches. During the summer season they remain only a week or two in that state. The last brood winters under ground, or nearly all at least. A few flies may hibernate some years, hence the obvious advantage of turning over the land thoroughly in the winter months, so as to subject the pupæ to the influences of the weather and place them in reach of birds. The soil may also be dressed with some one or other of those applications which are destructive to subterranean insects. While the maggots are feeding, little can be done, but sprinkling with a solution of petroleum has been tried, and dusting quicklime over the leaves.—ENTOMOLOGIST.

### THE PRIORY, WELLINGTON, SOMERSET.

IN my notes on the Taunton show I mentioned the very fine stands of *Gladioli* exhibited by Mr. S. Dobree of the above place. For a period of many years I had been in the habit of seeing his spikes of bloom, and, seeing how good they were, had been anxious to see them growing; and having last year received from him a courteous invitation to go there this season, I was enabled to avail myself of it, and was greatly delighted with all I saw.

The Priory was a small cottage, but Mr. Dobree on coming into possession of it built largely on it, and it now contains some very large and handsome rooms, while the gardens lie all around it. Mr. Dobree is one of those amateurs who, like my friend Mr. Banks, like to take up one flower at a time and do it thoroughly. Thus at one time *Dahlias* were his fancy, and he was a leading and successful exhibitor. At another he went in for *Verbenas*, at another for *Roses*, in both of which he was also very successful; now *Gladiolus* is king, and I hope will long remain so, although there was a certain ominous hankering after herbaceous plants, which seemed indicative of a cooling of love. Of course I do not mean that there is nothing else grown; there are some fine *Camellias* and *Azaleas*, the greenhouses were filled with *Pelargoniums*, there was a certain amount of bedding-out, but the culture is the *Gladiolus*, and from what I saw here, as well as my knowledge of other places, I should now place (since Mr. Banks has abandoned their culture) Mr. Dobree as our foremost amateur, both as to the extent of his culture and the success which has attended him as an exhibitor.

Mr. Dobree has been a successful raiser of seedlings, and some of his flowers are of a high order of merit, so that a very large portion of his beds is filled with seedlings. He also grows the best of the French varie-



ties and a few of Mr. Kelway's, so that there is a very varied selection. With regard to his culture, the soil is heavy, and therefore not over-well suited for them, while the climate is mild and moist. So far, then, from any exceptional advantage enjoyed by Mr. Dobree, the odds are against him; but, of course, he knows how to cope with these difficulties, as his success proves. I noticed that his beds were not mulched at all, even in this hot season, as he considers the bulbs are much more likely to get diseased when this is done, for he is one of those who recognise in the cause of the severe loss we have all to mourn over who grow *Gladiolus* the existence of a disease which I cannot but believe to be engendered by our moist climate, for at Fontainebleau the other day I saw but little symptoms of the malady which causes us so much grief over here, while (although this is a subject I must revert to by-and-by) this dry summer has been far more favourable to the bulb than any previous one that I have known.

Amongst the French varieties of recent years, Mr. Dobree's are Mabel Nereide, Bicolore, Arabi Pasha, Grand Rouge, Baroness Burdett Coutts, Corinne, Victor Jacqueminot, and Mlle. Marie Verdale. Of the varieties of last season he places *Crepuscule*, first; then *Pyramide*; *Medici*, somewhat in the way of *Ovide*, third; *Gallia*, fourth; *Colorado*, fifth; and *Conquest*, which he does not consider an improvement on *Corinne*, sixth. He has not grown *Tamerlane*, to which I am inclined to give the first place, an opinion borne out by Messrs. Souillard & Bruellet.

Mr. Dobree has been very successful in raising a goodly number of seedlings of excellent quality. With the high standard of excellence before him in the more modern varieties he has felt that it must be something good, something of real excellence, either in novelty of colour, excellence of form, or hardiness, which would be worth keeping. Thousands have to be cast away, as, although pretty, they fail to fulfil these conditions, and, like every seedling grower of judgment, he feels it is better to have a few good ones than a multitude of indifferent sorts. Amongst these I particularly noticed *Hubert*, a fine flower, somewhat in the style of *Dalila*, which, as I have said, was overlooked at Taunton amongst the varieties that ought to have been certificated; *Feather Gem*, a very beautiful variety; *F. Bonamy Hankey*, a very vigorous free-blooming plant; *Queen of Canaries*, certificated at Taunton, a very delicate and beautiful shade of primrose yellow; *Richard*; *Prebendary Kuowling*; *Miss Paterson*, snowy white, a colour somewhat rare of late years, few varieties of value having been added to our list since *Norma* and *Madame Desportes*; *Mrs. Knowling*, *Millie Dobree*, *Reputation*, and *Jessie Fox*. It is of little use mentioning these except to show that Mr. Dobree has been successful in obtaining fine varieties, as they not likely ever to be in commerce.

We so rarely meet now-a-days with anyone who grows to any extent this lovely autumn flower, that it was a great pleasure to me to have the opportunity of having this talk with Mr. Dobree. I have seen the report of the wonderful blooms exhibited at the Crystal Palace from Scotland, and have since met Mr. Douglas, who fully confirmed what had been said in your columns. I was sorry to have missed them, but I was unable to get there, and yet withal, grand as they are, they entail a vast amount of disappointment; and when so able a gardener as Mr. Douglas, who can grow well-nigh anything well, says that practically they have beaten him, what can we minor gardeners hope to do? I trust, however, that Mr. Dobree will still continue their growth, and that we shall be able to point to one amateur at least who still worthily cultivates this lovely but capricious beauty.—D., Deal.

#### TUBEROUS BEGONIAS AT RATHRONAN MANOR, CLONMEL.

I HAVE just returned here from having some holidays—some at flower shows, and the majority in visiting any fine gardens that came in my way in two provinces. Gardening has had many things to contend with in recent years in Ireland, yet, without introducing any debatable matter, I am proud to think, while many have dropped out from one cause or another, steady progress has been making. I know a good deal of England north and south, and Ireland well, and speaking from that experience I am not sure but we do many things here better than they are done in the wealthier island. Take a possible illustration. This is the residence of the Hon. Judge and Mrs. Gough: a short distance from this town, to which a small party of us went to see a dozen beds of Tuberous Begonias in the flower garden that have been blooming since May, and an extensive conservatory well stocked with the more select singles and doubles, for since their introduction, though other good things are not neglected, these have been made a speciality. Many have doubted their suitability for bedding out at all, and, particularly this year, I have heard others "damn them with faint praise." The former I admit were those that never gave them a fair trial, and the latter were chiefly those who had the misfortune to get a bad strain of seed, or mismanaged good named kinds. Now, this point of getting good "named" varieties is all-important, especially for beginners. I say "for beginners" advisedly, for, ten chances to one, bad kinds, and they are much easier to get than good ones, will disgust the first time, and not be tried again. I admit good seedlings can be had. I raised sufficient for making a large bed from the seed of a well-known Kentish florist, the flowers being of great size and substance—but they are the exceptions. At Rathronan, though seedlings have been raised largely, named sorts in-door and out are principally depended on. We first admired those dozen large beds. They were a mass of bloom. B. Sedeni and B. Vesuvius had their foliage wholly hidden by the blooms. Worthiana, Paul Masurel, Oriflamme, Etna, Model, &c., were very little behind in this respect; and this since May last, for Mr. Mulcahy, the

gardener, starts the tubers on a hotbed in February, and has large plants by that time. I forgot mentioning *Lelia*; it makes a massive bed of the most intense dark crimson that would out-distance the Zonal Pelargonium *Henri Jacoby*. Newer introductions have been found in many respects behind those old varieties. Though this has been the driest season for twenty years, the naturally moist soil here partly explains the above success.

In the conservatory were some fine plants. Flowers of a small plant of Mrs. Freeman measured nearly 6 inches, not merely across, but both ways, for the bloom, unlike most others, is almost circular, of a most pleasing shade of rose pink, and of great substance. I understand this, like many others here, was raised at Stanstead by Messrs. Laing. *Mdme. Stella*, light pink; *Mdme. Peasoneau*, large blush; *Snowflake*, nearly circular also, and almost pure white; *Princess of Wales*, a rose white, and contrasting well with the two adjoining, *Bonfire* and the Hon. Mrs. Brassey, orange and rich rosy crimson. Both of those, though large and robust, seemed pigmies beside the well-known Countess of Kingston, a deep crimson red, and that last year I have seen doing admirably bedded out in Cork. Very commendable, too, seemed Sir Stafford Northcote, Bayard, A. H. Laing, and the fine dark red *Princess of Teck*. I may remark that these were among the varieties conspicuously in bloom, and does not include some very fine seedlings raised on the premises, principally whites and yellows, and shades thereof, not named. Another peculiarity noticed is that some varieties come out very fine—even double or semi-double, and the subsequent blooms are comparatively inferior, as if their constitution on the threshold of existence suddenly began to fail. The bedders named, however, have now been tried for several years with others, and have been finally selected.

Many of the doubles that had been blooming for months were past their best, but the following deserve notice. *Mons. Keteleer*, a very double rosy flesh-coloured pink; *Laing's David M. Home*. One of the best of the salmon-shaded seemed *Pæonæfloræ*; then the hardy good old double *Gloire de Nancy* that bears much rough treatment, resembling the best. One that should be in every collection is *Mrs. Laing*, a soft rose white that contrasts well with the tall robust grower *Duchess of Cambacères*. A very desirable white and salmon is *Morie Lemoine*, with full centre; and of equally good shape was *Mrs. Wise*, a bright rose pink. I must include *Dinah Felix*, and that peculiar serrated-petalled crimson flower *Esther*, with an enticing rose pink centre. Though I have thus brought under your notice some excellent varieties grown indoors, single and double, my primary object was to show that with good varieties, suitable soil, and proper treatment, Tuberous Begonias are most commendable for outdoor work and garden decoration even in unfavourable years; but at the same time I would like to maintain that varieties, soil, and treatment are indispensable conditions to success.—W. J. MURPHY.



#### HARDY FRUIT GARDEN.

*Gathering Fruit.*—Much watchfulness and care are necessary now amongst Apples and Pears to secure the crop of fruit when it is ready for the fruit-room. If gathered too soon it becomes withered; if left too long upon the tree much is spoilt by wasps and birds, and the best fruit, which is usually found upon the upper branches, may be shaken off by the first storm of wind. Almost daily inspection has to be made where the collection is a large one, and we have several times lately found so many sorts ready for gathering on the same day that two or three extra men have been taken for the work. We rather object to this, for rough hands unaccustomed to the work are apt to play sad havoc with the laterals. Repeatedly have we pointed out that the blossom buds for next year's crop of fruit come close to stalks of the fruit which is now being gathered, and yet how frequently do we find them broken off! Great care is required in the gathering, the carrying to the fruit-room, and in putting in the cribs and upon shelves. Apples and Pears must not be shot out of the baskets into the cribs like Potatoes. No matter how hard the fruit may be, every blow from rough usage makes a bruise which eventually causes premature decay. Early autumn Pears require frequent examination after they are gathered. *Fondante d'Automne*, though the most delicious Pear just now, is by no means a safe sort—once ripe it soon deteriorates and is seldom good after a fortnight. Like many other of our best sorts, its season may be extended by planting trees against different aspects and by gathering only part of the fruit at first—some fruit is always more forward than the remainder. Apples, too, require care. That valuable sort, *Warner's King*, often decays quickly when once fully ripe, and it is the best fruit which spoil first. Since our last calendar appeared we have gathered an excellent crop of many sorts of Apples, including *Adams' Pearmain*, *Cobham*, *Bedfordshire Foundling*, *Hubbard's Pearmain*, *Brabant Bellefleur*, *Gloria Mundi*, *Cockle's Pippin*, *Reinette Van Mons*, *Melon*, *Golden Noble*, *Blenheim Pippin*, *Beauty of Kent*, *Dumelow's Seedling*, *Mère de Ménéage*, *Tower of Glamis*, and *King of Pippins*. Of Pears, *Jersey Gratioli*, *Fondante d'Automne*, *Beurré Clairgeau*, and *Louise Bonne of Jersey*. A tree against a south wall has given us a nice lot of fine highly coloured fruit of *Walburton Admirable* Peach, but the last will be gathered by the



time this is printed. Coe's Golden Drop Plum has been most abundant, and we have still a quantity of it ripening in the fruit-room, and it is delicious when partly shrivelled.

*Preparations for Planting.*—Stations should now be made in readiness for early planting; 6 feet square and 2½ feet deep is the best size for a station. If we had materials we would always fill the bottom 6 inches with concrete, consisting of six parts broken stones to one part fresh lime, failing which stones should be rammed hard into the bottom and the holes filled with fresh fertile loam, allowing an extra 6 inches at the top for sinking. If the soil surrounding the stations is close or heavy each station should be connected by a branch drain to the garden drains.

#### FRUIT FORCING.

*PEACHES AND NECTARINES.—Earliest House.*—The trees in this structure are now losing their foliage, and in some it is entirely down. Provided the roof lights are moveable they will have been off the house some weeks, and the exposure to the atmosphere will have done the trees much good, cleansing them of dust and insects. If the lights have been replaced in case of the necessity for lifting the trees and laying-in in fresh compost they should be again removed as soon as the roots have taken to the fresh compost. They should remain off until the time arrives for closing the house, or until the middle of November. This will give the trees the benefit of the autumn rains, the borders will be thoroughly moist, and with proper drainage there is no need to fear its becoming over-saturated. In the meantime loosen the trees from the trellis, and if necessary have the house painted and the walls limewashed, after thoroughly washing with soft soap and water and the glass with clear water. The trees should have all the wood not required for fruiting or the extension of the trees cut out, and if care has been taken to prevent overcrowding during growth there will be next to no need for the knife, as the shoots of the current year may be left their full length, as they will be ripened to the extremity. If it be necessary to shorten them for originating shoots to fill vacant space do so to a wood bud or a triple bud, making sure that the central one is a wood bud—i.e., small and pointed, as some kinds, notably Noblesse and Grosse Mignonne, form triple fruit buds, as do some others; and if the bearing shoots of next season are shortened it must be to a wood bud, but we never shorten these, no matter what their length, as it is on strong-jointed wood only that fine fruits are to be had. The trees may be dressed with an insecticide, being careful not to injure the buds, and secure to the trellis as opportunity offers before closing time.

*Planting Early Houses.*—The borders having been prepared for the reception of the trees by providing efficient drainage through which the water can pass freely and be carried off by drains, the soil may be attended to. A compost of good loam, charred refuse with lime rubble, thoroughly mixed and put together firmly, is suitable. No manure should be added, as the trees will grow quite strongly enough without it, and if a stimulant is required, mulching and the application of liquid manure when the fruits are swelling will give the most satisfactory results. The trees in such a case may be at once planted if they have been trained to walls for three or four years and subjected to annual lifting in preparation for the purpose intended. Carefully lift and plant them, afterwards supplying water, shade, and sprinkle the branches, keeping the house rather close in the daytime, but throwing it open at night, and they will soon become established in the new borders. By keeping the house rather close in the day and throwing it open at night they will ripen well, and may be started at the new year with a certainty of a crop of fruit ripe early in June the first year, and the following one in May by starting in early December. If the trees have to be bought in make an early selection of young trees that have not made a gross growth, and the trees should be lifted carefully with all their fibres, and kept moist until they can be planted in the borders prepared for them. The best varieties for early forcing are Alexander, Hale's Early, Large Early Mignonne, and A Bec. Belle Bance, Violette Hâtive, and Grosse Mignonne come a little later, and are followed by the fine old varieties Royal George, Noblesse, Bellegarde, Barrington, and Stirling Castle, which will always have a place in gardens. In Nectarines Hunt's Elruge, Violette Hâtive, Pitmaston Orange, Pine Apple, and Victoria follow, and all are good.

*Midseason Houses.*—If the trees in this house require lifting they should be taken in hand without further delay, acting on directions given in a former calendar for early-forced trees. No trees pay better for lifting and replanting in good compost than the Peach and Nectarine. It is the best corrective of over-luxuriance, and the best aid to setting and stoning.

*Late Houses.*—As soon as the trees in late houses have been cleared of fruit let every lateral and shoot that will not be required for use next season give way to young growths now swelling their buds. If the growths are crowded thin them well so as to admit light and air about them freely, keeping the foliage clean and healthy by means of the syringe; see also that the roots in inside borders do not suffer by want of water. If the borders are properly made and drained there is no fear of overwatering; the danger is in their being allowed to become dry, and that they never ought to be at any time, not even at the resting period, as when that is the case it is a most fertile cause of the buds dropping when they should be bursting into flower in spring.

*FIGS.—Early-forced.*—Grown well and properly ripened a dish of early-forced Figs, when there is not much variety of fresh ripe fruits, is now considered a valuable if not necessary addition to the dessert; besides, this wholesome fruit is becoming, and deservedly, more into repute, leading to its extended and profitable cultivation. The Fig is a great lover of heat, moisture, and liberal feeding when growing; is most prolific when the root space is limited, thrives in a compost of good calcareous

loam, crushed bones, and decayed manure, and must have a light well-ventilated house. Brown Turkey, White Marseilles, and Negro Largo are the best, as they force well, and carry heavy crops of fruits of the finest quality; but Early Violet and Early Prolific are well worth a place for giving a few early dishes. If trees for starting in December have to be purchased no time should be lost in making a selection. Choose trees with clean single stems, thoroughly established in pots, and well furnished with side shoots and spurs. Place them in a cool house fully exposed to light, and with ventilation day and night. This is preferable to setting them out of doors, where heavy rains, wind, and frost act injuriously upon the leaves before they have performed their functions. Water moderately, inclining to the dry side until the leaves turn yellow and commence falling, when the pots may be placed close together and protected with any dry material until the time arrives for taking them into heat. Fig trees in pots improve with age; but they should be plunged in some mild fermenting material, into which the roots can run as the season advances. Oak or Beech leaves answer better than tan, as they gradually decay, affording a constant supply of nutriment through the most critical period of growth, when a check from want of water might prove fatal to the first crop of fruit.

*STRAWBERRIES IN POTS.*—The genial rains along with the bright weather have induced a good growth in the plants, and they are now maturing the crowns. In order to ripen them thoroughly keep thin in the lines, and never allow them to want for water. Although a few degrees of frost will not do any harm, it is not advisable to let the pots stand exposed until the soil becomes frozen, as that to a certainty will destroy the roots in contact with the sides of the pots. Hence the plants must be placed on a hard bottom, one of ashes or other material impervious to worms, and be plunged in that material, or cocoa-nut fibre refuse, to the rim in an open situation, but sheltered from winds before severe weather. With some dry litter or fern over them in severe weather, and removed upon the setting-in of a general thaw, they will winter better than in the dry atmosphere of Peach or other houses. Protection overhead will not be needed for some time. Plants intended for very early forcing may be plunged in ashes and in frames, only employing the lights in case of heavy rains, and then tilting them at the back; but coddling spoils them.

Autumn fruiters should now be placed on shelves near the glass, where they will ripen well and be better flavoured. Plants that have been lifted and potted from the open ground will, if in flower, require a rather dry situation, so that whilst they are encouraged by artificial conditions to take root afresh, they must not be kept too long in a saturated atmosphere. When the plants will bear exposure to the sun and a gentle current of air on a shelf near the glass success is certain, and the sooner this is effected the better it will be for the crop. Plants that are now ripening off their crop of fruits will do admirably in the same house with those that are flowering, the conditions being exactly the same for both—viz., a free circulation of air, a somewhat dry atmosphere, and if 50° be secured to them at night, and 10° to 15° rise by day, they will be satisfactory.

#### PLANT HOUSES.

*Shading.*—All shading that has been employed on plant houses should be ready for removal except in solitary cases, such as the Odontoglossum house or the fernery, where it may be needed if we have bright weather for a few weeks longer. It is not wise to remove the shading that may have been employed suddenly, or the occupants of the houses are almost sure to suffer. By this time they should have been inured to more light and sunshine, so that what sun may be experienced from this date would do no injury. Considerably less shade will have been employed for some weeks past in order to ripen and solidify the growth of the plants, where shading is applied judiciously. Plants that have been subject to such treatment will need shade no longer.

*Storing the Blinds.*—The whole of the material, whether blinds or otherwise, that may have been used for shading purposes should now be placed under cover until it is again wanted in spring. Before storing it away, however, it must be perfectly dry, and then placed where it can be kept in that condition until required again. Much shading material is ruined annually through being put away damp. When stored in this condition mould is formed, and they quickly decay or fall into holes directly they are placed upon the houses or frames in spring. Too much attention cannot be devoted to matters of this description. Any blinds that have become old and useless again for covering the roofs of houses may be preserved for shading the frames, and new ones made during the winter to replace them. It is good policy to attend to these matters during the winter months, so that they will be ready for placing upon the houses in spring without having to be prepared when they are really wanted. The rollers or blinds should have the ropes that work them attached to them, and then labelled, so that they can be sorted out at once when required without causing confusion.

*Preparing Mats.*—Material for protecting plants in cold frames is always in demand during the winter months, and should be prepared as opportunity offers. It is a great mistake to leave operations of this description until the mats are really wanted for covering the frames. When the tying of the ends of mats is neglected until they are wanted it frequently happens that it is not done, and they have to be used without. They do not last half as long in this condition as they do when properly tied and loose straggling ends removed. Untied mats very soon present a ragged appearance that is objectionable. There is always time in gardens large or small when operations of this nature can receive attention without interfering with the other work, providing a little judgment is exercised.



**Cleaning Houses.**—This is another important operation that must be pushed forward at once with energy. The glass and woodwork should be thoroughly washed with hot water and softsoap, the former outside as well as inside. The walls should be limewashed, and the pipes blacked as well as the floors, and cribs, if formed of stone, made perfectly clean with an application of chloride of lime. If mealy bug has become established in the houses paint them thoroughly with pure petroleum. Soak well with oil, and water the stages and every portion of the house likely to conceal this, the worst of enemies the gardener has to contend against. In such case the whole of the old limewash should be scraped and washed from the walls and then dressed with petroleum or muriatic acid, which is decidedly preferable of the two. When this has been done the walls can be washed with hot lime. It is a great mistake to transfer plants that have been standing outside or in clean frames to dirty houses, for they cause much trouble and annoyance afterwards. The houses should always be made thoroughly clean before the plants are placed in them; the work when the houses are empty, or can be emptied, can be accomplished in half the time.

**Housing Plants.**—As soon as the houses have been cleaned in readiness those plants that are likely to suffer should be placed under cover first. It is necessary to have everything in readiness, for in some localities early frosts soon destroy the work of a season if plants standing outside are not housed. Many plants will stand outside safely until the approach of frost, while with others heavy rains would prove as detrimental to the plants as frost. Plants that have been planted out, such as Callas, Salvias, Bouvardias, and others, should be lifted and potted if not done without further delay, or they will not have time to make a few roots and become established before they have to be placed indoors.

#### FLOWER GARDEN AND PLEASURE GROUND.

**Propagation of Shrubby Calceolarias.**—The present is a good time to put in cuttings of these, but any time during October will do equally as well, providing they are not damaged by frost. Calceolarias unfortunately are liable in some gardens to die off in an almost unaccountable manner, but as a rule they are a very serviceable class of plants, and seeing how easy it is to strike and winter a great number of plants, the wonder is how they have got into such disfavour. In large gardens hundreds or thousands of plants may with a very little trouble be wintered in cold pits and frames, while where only a small quantity, a single-light frame or a few handlights are all that are required. No bottom heat whatever is required or should be given to the cuttings, as it is a better and a safer plan to strike them slowly, if only for the purpose of preventing early or delicate growth. Prepare the pits or frames by placing about 1 foot of half-decayed manure or leaf soil into the bottom, making this firm and placing about 6 inches of fine soil, to which leaf soil has been freely added, and face over this with a layer of sand or road grit. If shallow frames or handlights only are available, stand these on a bed of old manure or leaf soil, and place the fine soil with the surfacing of sand inside, taking care in every case to finish off firmly and smoothly. The medium-sized cuttings or flowerless shoots only should be selected, as those that are thin and hard do not strike readily, while if extra strong and succulent they are not so easily wintered. Shorten them to about 3 or 4 inches, cut to a joint, and trim off the lowest pair of leaves. Dibble them in firmly, taking care that they touch the bottom of the holes, at a distance of about 3 inches apart each way. Water them in, put on the lights, keep close in the daytime, and shade from bright sunshine, giving a little ventilation during mild nights. In about seven or eight weeks they will be rooted, and should then receive abundance of air whenever the weather permits, in order to retard active growth, as this renders them more susceptible of injury from severe frosts, or from a long spell of dull and damp weather. Some kind of rough litter or mats as a protection from severe frosts should always be kept in readiness to put on. Those who decide to purchase cuttings, and which can be had at a cheap rate, should try Gain's Yellow, Aurea floribunda, yellow; Prince of Orange, orange brown; and Havelock, bronze crimson.

**Violas.**—These are now become almost indispensable for summer and autumn bedding arrangements, and these, too, are easily struck and wintered. There are a considerable number of varieties, but many of them only differ slightly. See page 299 for some of the best. Frames, pits, or handlights may be prepared for the cuttings in exactly the same way as above described for Calceolarias, and the subsequent treatment may also be the same. The flowering tops are not often grown into good plants, and the preference should be given to the soft shoots, which at this time of year are to be found springing from the base of the plants; and these, if shortened slightly, say to about 3 inches or less in length, according to the vigour of the sort, and dibbled in firmly, will strike root during the winter and form stocky little plants for early planting next spring.

**Zonal Pelargoniums.**—It is a great mistake to leave the newly rooted cuttings of these standing in the open, as should the boxes of soil become badly saturated with moisture, the probability is many of the cuttings will damp off before they are sufficiently dry again.



#### A SIMPLE METHOD OF BEE-KEEPING.

I HAVE come to the conclusion after many years' experience that the various bar-frame and other hives which are so strongly recom-

mended by their advocates in the present day are only useful to those who can afford to make bee-keeping a study and to devote to it much time and attention. Among my friends and neighbours we have tried them, and I know many who have failed to make them profitable; scarcely one who has been successful. I have no doubt my plan would be thought little of by adepts in the management, but as it has now stood the test of forty years, and has been sufficiently successful to afford me amusement and an abundant supply of honey, I venture to give a description of it for the benefit of those who may choose to adopt it.

I would in the first place observe that I suffer dreadfully from the sting of bees. Doctors tell me that my absorbents are very large, and hence the poison is diffused with great rapidity. I was anxious, therefore, to devise some safe means of manipulating my friends without exposing myself to their anger when their tempers were ruffled. To this end I had a small kind of summer-house erected in my garden, plastered within, and thatched on the outside with leather. Within this were fixed two shelves one above the other, occupying the east, south, and west sides, capable of holding sixteen hives. On the same level with the shelves were placed on the outside alighting boards. The two were connected by pieces of timber 4 inches by 3 running longitudinally through the house. On the under side of these were cut openings for the bees 4 inches wide by half an inch deep, corresponding with the centre of each hive, so that when the floorboards were placed against them a ready access was given to the bees to their home of industry, and by simply shifting the boards on one side I could narrow the entrance as much as I pleased. On the north side was a door, the top half of which was glazed and turned on a centre pivot, so that I could easily open or close it at pleasure. Inside this little house I could manipulate my bees without fear of being stung.

My hives are of straw, about 14 inches in diameter and 8 inches deep. They have on the bottom a hoop which rests evenly on the floorboard, and on the top a board an inch thick which covers the whole surface of the hive. In this board are cut five holes 2 inches in diameter, and on each side of these holes is placed first a piece of perforated zinc 3 inches square, which will admit only working bees, and over this a corresponding piece of zinc to exclude light and air. Such is the condition of my hives now that my harvest has been gathered, and the advantages that I claim for my system are great simplicity and ease of manipulation. Thus, when I want to feed the bees I have only to remove the outer piece of zinc from one of the holes, substitute for it a piece with small perforations, and invert over it a bottle of syrup, the mouth of which is covered with muslin. In this way I can give any quantity without attracting the attention of other bees. When the spring comes and the bees begin to work freely I place over each hole a glass such as confectioners use to exhibit barley-sugar in their windows. These when filled hold from 3 lbs. to 5 lbs. of pure honey, free from brood or bee bread, and if it is a good season and I can prevent the bees from swarming I get them filled twice, affording about 40 lbs. of honey. If, however, this is to be done the glasses must be taken early in the day, emptied of their contents, and replaced at once. The bees will then begin working in them as if nothing had happened, whereas if new glasses are put they will often sulk over them for days. A double green baize or straw eap covers the glasses to exclude light. When I want to take the honey I have only to pass a knife under the glass, put it in a box and carry it to a distant part of the garden, where allegiance to their queen soon induces the bees to return to their hive and leave me in possession of their treasure.

I had a remarkable instance this year of what bees will do when they have a willing mind and a good pasture. I hived a strong swarm in the first week of June in a hive which had previously been filled with comb. I knew they would soon want more room, and, all my usual glasses being occupied, I put on one large glass which covered all five holes. By the end of July it was completely filled with the finest honey and weighed upwards of 30 lbs.

Let me again say that I do not profess to emulate the talented bee-keepers of the present day. My plan has been a source of great interest and amusement to me, and has afforded me an abundance of the finest honey, and I offer it to your notice in case you think it can be useful to others.—SENEX.

#### WORK OF THE MONTH.

##### TAKING SUPERS AND DRAINING HONEY.

WE are now home from the moors with heavy hives without a single mishap. This is due to efficient ventilation, as with such hives it is quite impracticable to invert, which may answer the purpose for puny hives, but not with those weighing in many instances 2 cwt. In previous articles I pointed out a number of popular errors, and now add that the subsequent observations prove more strongly I am correct. Those who have not witnessed the results may remain



sceptical, but those who have will never again interpose an empty super under a full one, nor attempt sections either above or inside a hive. The honey glut ceased about August 27th, when the Heather was at its best, when supers were almost abandoned, but honey-gathering continued until September 20th. Notwithstanding this beautiful example of stimulative feeding I have not observed a single cell of brood, and I continue to have faith that the old worn-out bees will not disappoint me in coming out strong in spring and help to fill their garner with honey gathered from the flowers of 1885. So numerous are the bees at present in these hives, that instead of having either to unite or to stimulate breeding they are strong enough to form two good stocks. Most hives are surmounted with heavy supers, while the body contains sufficient for the owner to take from 30 to 50 lbs. and leave sufficient to tide over the bees till May, when they will have the emptied frames refilled with new comb accelerated with the help of comb foundation.

The quantity of honey gathered by the bees at the Heather varies greatly with the locality. At some places very little was taken, while others have yielded either fair or extra quantities. The latter has been the case with those situated near the Leadhills of Scotland, where, curiously enough, scarcely a drop of rain has fallen for months. Consequently we have entirely escaped the thunderstorms and floods so prevalent throughout Scotland about August 12th. The weight gathered by each hive varies according to its size and construction, but ordinary straw hives have risen from 15 to 70 lbs., larger hives both of wood and straw from 70 to 120 lbs. My own best hive has risen upwards of 100 lbs., due, I believe, greatly to the much-maligned foreign bees of Cyprian origin had from Messrs. Neighbour seven years ago.

Many people object greatly to Heather honey in consequence of the difficulty of extracting it except when pressed by the hands; but this is entirely obviated when the screw press is used, the honey ultimately to be passed through the honey-drainer composed of different-meshed brass sieves and net bag. Our presser and drainer is placed at the disposal of bee-keepers, who find their honey cleanly and economically extracted with neither its flavour nor colour impaired by heat or dirty hands, and that in a very short time after the combs have been taken from the bees. With straw hives this is obtained by driving, assisted greatly by the judicious application of carbolic acid, which is of more service at this season than during summer, as the bees are not only more difficult to drive, but are more apt to rob. Then when we take into account the risk of irritating bees and getting supers spoiled by the bees nibbling and breaking the cells of the supers when they are tardy in leaving and robbers attacking, then the same thing occurs when removing frames of combs. Many people act very foolishly in removing supers by exposing and allowing the bees their own time to leave. Advice is often given to brush the bees from the frames with a feather; but this excites them to sting, and by the delay and exposure induces robbing.

To remove supers quickly without being at the trouble to drive, or shake, or brush the bees or excite robbing, is my work at the present time. I take stiff brown paper of the proper widths to pass between the combs. I then paint these sheets of paper with carbolic acid, but not so as to smear the comb. I then slip these between the combs of supers and sections; in a few seconds there is not a bee in them, consequently none is lost. Now I lift off the supers full of honey, but minus bees. The same process is performed with frames, but three cards is sufficient for them so as to clear one comb at a time, because if too many were attempted it would cause the whole of the bees to leave, and would court that robbing we seek to avoid. Now that this simple plan is made public we need hear no more of supers being destroyed by bees or bee-keepers being stung. Of course supers capable of such manipulation must not have solid crowns.—A LANARKSHIRE BEE-KEEPER.

### BEES.

WILL "A Lanarkshire Bee-keeper" be good enough to give his opinion as to which aspect is the best for wintering hives? whether or not it is a good plan to make all stocks face north? Nutt, in his book I remember, gives the results of some experiments. Those hives placed on the north side of wall came out much the strongest in the spring, having consumed some 10 or 15 lbs. less honey than those left where the sun shone on them. No bee-books now-a-days mention this plan. The modern plan is to shade the entrances with blackened tin. If "Lanarkshire Bee-keeper" would say if he takes any measures, either ancient or modern, to prevent bees prematurely leaving their hives I should be grateful.—R. S. V. P.

### TRADE CATALOGUES RECEIVED.

William Paul & Sons, Waltham Cross, Herts.—*Catalogue of Roses for Autumn, 1884, and Spring, 1885 (illustrated). List of Fruit Trees and Evergreens.*

Henry Bennett, Shepperton, Middlesex.—*List of Pedigree Roses.*

Auguste Van Geert, Ghent, Belgium.—*General Catalogue of Plants.*  
L. Späth, Rixdorf, Berlin.—*General Catalogue of Plants.*  
H. Cannell & Sons, Swanley, Kent.—*Catalogue of Plants (illustrated).*  
Compagnie Continentale d'Horticulture, Ghent, Belgium.—*Catalogue of New, Rare, and Beautiful Plants (illustrated).*  
George Cooling & Son, Bath.—*Catalogue of Roses and Fruit Trees.*  
Curtis, Sanford, & Co., Torquay.—*Catalogue of Roses.*  
William Rumsey, Waltham Cross.—*Catalogue of Roses, Trees, and Shrubs.*



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Potato Show (L. B.).**—The principal show of Potatoes is that to be held at the Crystal Palace, Sydenham, on Wednesday, Thursday, and Friday, October 8th, 9th, and 10th.

**Price of Melons (T. P. H.).**—Like everything else, the price of Melons is governed entirely by the quality and good appearance of the fruit. In London the price is not given in pounds, as some very large fruits are inferior. The fruits are sold as such, and in the middle of July they realised from 2s. to 5s. each; in the middle of August and September the prices ranged from 1s. to 3s. each.

**Destroying Scale on Peach Trees (M. P.).**—If you dissolve 3 ozs. of softsoap in a gallon of hot water, then stir briskly in half a wineglassful of petroleum, and when cool enough apply to the trees towards the evening, not on the morning of a sunny day, it will "answer for certain" in destroying the scale, at least that is our experience. The preparation should be constantly agitated during use, so that the oil is incorporated with the soapy water as completely as possible.

**Mildew on Roses (Aurora).**—Dusting the leaves with sulphur thoroughly and repeatedly is an old and tolerably good remedy. Another and more certain one is to dissolve a pound of softsoap in a gallon of water, syringe the leaves with it, and the mildew disappears. Cleanse the foliage by syringing with clean water next day.

**Lily of the Valley not Flowering (Idem).**—Lily of the Valley requires two or three years to become established and to develop flower buds. Leave the plants undisturbed, and you will have plenty of flowers in due course. We planted two very large beds last winter, using quite two bushels of fine healthy roots; but we hardly had a dozen spikes of flowers from them this year, while older beds close by bore a profusion of fine spikes.

**Planting Shrubs near Water (Idem).**—We have planted thousands of Rhododendrons on the margins of ponds and streams, and have no recollection of a single failure. If the soil is tolerably firm and dry you may plant Rhododendrons and any other shrubs you like, but if it is a swamp none of them will answer. We may add that with drainage and enough fresh soil to raise the surface a foot or two, the condition of a swamp may be so altered as to be suitable for the planting of most trees and shrubs.

**Seedling Dahlias (T. Garratt).**—The varieties are all good ones, undoubtedly worth preserving and growing well another season. The scarlet is a well-formed flower of the true Show type, and several of the others will probably improve, notably the purple and scarlet and buff-streaked flowers.

**Clematis Jackmanni not Seeding (J. F.).**—The non-production of seeds is probably due to some accidental cause that might not be readily traced. There is not usually much difficulty in obtaining seed from C. Jackmanni, and the pollen will retain its properties for a remarkably long time, instances having been recorded in which it has been preserved for eleven months and then used with success.

**Origin of Lord Suffield Apple (J. Williams).**—A Lancashire correspondent sent us the following information on this subject five or six years ago:—"Lord Suffield was raised by Thomas Thorpe, a hand-loom weaver of Boardman Lane, Middleton, near Manchester, but he could not give the correct date of its raising, but that it was let out in 1836 or 1837, himself purchasing three buds from Thorpe at 3d. each in the year 1840, a tree of which still stands in his garden. The Apple was called Lord Suffield on account of Lord Suffield being then lord of the manor of Middleton."

**Primulas (J. A.).**—Presuming the plants are small they will be strengthened by having the flower trusses removed as soon as you can get bold of them. If the plants are in very small pots, and these are filled with roots, they may be carefully transferred into pots just so much larger to enable you to place your finger between the roots, which must not be disturbed, and the sides of the pots; press down the soil—loam, leaf mould, and sand—as firmly as the soil in which they are at present growing, and apply water



with care and judgment, not wetting the foliage at this period of the year. If the plants are in 4-inch or 5-inch pots, and these not filled with roots, do not repot. If you had stated a few particulars about the plants and your glass accommodation we should, perhaps, have been able to give you a more satisfactory reply.

**Cherry not Bearing (T. T. W.).**—Your Cherry is, we think, the Late Duke. The tree will probably bear now it is established provided you train the growths so thinly that the leaves on one branch do not overlap and shade those on another. Sufficient growths must be trained for furnishing the fence; the others, if any, cut out, leaving four or five leaves at the base of each shoot. In the future prevent too many shoots extending by disbudding, and shorten the shoots retained at intervals along the branches early in the season. We usually commence pinching early in June, or when half a dozen are formed, and all subsequent growths are pinched to one leaf as often as it develops throughout the season. By this practice and keeping the leaves free from insects clusters of fruit buds form, and good crops follow if the blossom is not destroyed by spring frosts.

**Pruning Vines in Autumn (W.).**—That the practice as described and adopted by Mr. Taylor at Longleat was good is proved by results, Grapes from the Longleat vineri's winning first prizes at the great Show at South Kensington last week in the Black Hamburg, Muscat, and Alicante classes, an achievement which is creditable alike to Mr. Pratt and his predecessor. Something more than autumn pruning, however, is needed to secure such Grapes as those alluded to; indeed, we are not at all certain that the Vines were pruned last year when the foliage was green and healthy, but we have seen some very competent gardeners what they term "half prune" the laterals now, with the object of "plumping" the base buds. Supposing there are six developed leaves on each lateral this preliminary pruning consists in removing that portion bearing three of them. We have tried this plan, sometimes with advantage, but not always; we can only say that in the Vines operated on it never proved injurious. You may safely try the plan, proceeding, however, experimentally, and you will soon learn whether it is of advantage to the Vines in your charge.

**Millipedes in Soil (H. J.).**—When we find land so infested with the pests of which you enclose samples—a species of *Julus*—we have always a suspicion that it needs draining. If this is so in your case, and you can determine the point by a few trial holes in winter, you should drain it effectually. When water settles in excavations 2 feet deep draining is needed. If the ground is not naturally wet then we should give it a very heavy liming. Unslaked lime should be placed in convenient heaps at the rate of 100 bushels per acre at least, the heaps to be covered with soil dug from around them. In the course of a short time the lime will swell and burst through the soil, the moisture causing it to "fall," when it should be spread and forked in as quickly as possible. The best plan is probably to ridge up the land before winter, level it down in spring, and use the lime then when the soil works freely.

**Liquid Manure in Winter (A Surprised Reader).**—There is nothing to be surprised about in the remarks to which you refer. Giving liquid manure to Rose beds in winter is not a "new notion" by any means. On this subject the following was written many years ago by Mr. Beaton and published in the "Cottage Gardener." It was also incorporated in our little manual on manures:—"When a crop of anything is in rows, whether they be bedders or for the pot or table, liquid manure of any strength may be applied in the centre between the rows with less risk or danger than in any other way. I have often poured down large quantities of the very strongest liquid manure between rows of plants, one drop of which would be destruction to any one of them if it touched the leaves or roots; but filtering to the roots through a few inches of soil all harm is avoided, which goes to show that a fair porous surface of earth is the best and safest fixer of ammonia and all over-strong matter in the liquid. Every one of my own bulbs thus gets it, and I never lose a leaf. I quite agree with clarifying liquid manure for pot-culture, and in the hands of those who do not know practically what a plant can digest, or what the strength of their liquid is. But to keep a bed or border in good heart for a whole season at the least possible expense, have no recourse to clarifying the goodness out of the stuff, but give it to the plants fresh from the stable, cow-house, or piggery, or where it may be got much stronger, and one good soaking of it will last the whole of the season; the spring is the right time to apply it. Then, in June, if a handful of mould from below the surface is as good as a smelling-bottle, you may depend upon a good show of Roses and most bedding plants, if the beds wanted any assistance that way. Mr. Rivers has been recommending, for a long time, one or two thorough good soakings of the richest liquid manure to the Rose beds in the winter; and if Roses are ever to come out healthy on a thin, poor, sandy soil, that is just what will do it. When flower beds and borders get exhausted by cropping, this strong liquid is very much better for them than rotten dung."

**Errata.**—In the article on "Imported Denbrobiums," page 280, for "mean annual" read "mean winter temperature." On page 279, in the notes on "Gentiana Kurroo," referring to the colour, the sentence should be "densely spotted with white in a reniform blotch." On page 292, in the fourth line from the bottom of the second column, the winner of the third prize should read "W. H. Long, Esq., M.P. (gardener, Mr. A. Miller), who had good samples of Stamfordian Tomatoes, Canadian Wonder Beans, Bread-fruit, Potatoes, Snowball Turnips, and Leicester Red Celery."

**Names of Fruits (W. E. Musson).**—1, Golden Reinette; 2, not known; 3, Longville Kernel. (M. J. Kendal).—2, Royal Codlin; the others not known, probably local varieties. (X., Loughgall).—1, Formosa Nonpareil; 2, Royal Codlin; 3, Alfriston.

**Names of Plants (A. E. B.).**—1, *Sedum hispanicum glaucum*; 2, *Sedum acre*. (W. A.).—The yellow flower is *Celsia cretica*; the other is much shrivelled, but resembles *Saxifraga ceratophylla*. (A Novice).—1, *Sedum spectabile*; 2, *Leycesteria formosa*; 3, *Solidago Virga-aurea*; 4, *Chelone obliqua*; 5, *Centranthus ruber*; 6, *Aira pulchella*, a native of Europe. It is a very graceful Grass, much used for stands of flowers in table decoration.

**An Essay on Bees (R. C. V. P.).**—The above is the title of the work to which you refer, and which was awarded the prize offered by the Highland and Agricultural Society of Scotland for the best essay on bee-culture. The

author, as is stated on the title page, is Mr. William Thomson, known as "A Lanarkshire Bee-keeper." It is published by William Munro, 80, Gordon Street, Glasgow.

## COVENT GARDEN MARKET.—SEPTEMBER 30TH.

TRADE still remains steady. Good Pines are now in demand.

## FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. .. ½ sieve	2 6	to 4 6	Oranges .. .. 100	8 0	to 12 0
Chestnuts .. .. bushel	0 0	0 0	Peaches .. .. per doz.	3 0	8 0
Cobs, Kent .. .. per 100 lbs.	50 0	55 0	Pears, kitchen .. .. dozen	0 0	0 0
Currants, Red .. ½ sieve	0 0	0 0	„ dessert .. .. dozen	1 0	3 0
„ Black .. ½ sieve	0 0	0 0	Pine Apples English .. lb.	4 0	6 0
Figs .. .. dozen	0 6	1 0	Plums .. .. ½ sieve	0 0	0 0
Grapes .. .. lb.	0 6	4 0	Strawberries .. .. lb.	0 0	0 0
Lemons .. .. case	15 0	21 0	St. Michael Pines .. each	0 0	0 0

## VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes .. .. dozen	2 0	to 4 0	Lettuce .. .. dozen	1 0	to 1 6
Beans, Kidney .. .. lb.	0 3	0 0	Mushrooms .. .. punnet	0 0	1 6
Beet, Red .. .. dozen	1 0	2 0	Mustard and Cress punnet	0 2	0 0
Broccoli .. .. bundle	0 9	1 0	Onions .. .. bunch	0 3	0 4
Brussels Sprouts .. ½ sieve	0 0	0 0	Parsley .. .. dozen bunches	2 0	3 0
Cabbage .. .. dozen	0 0	1 0	Parsnips .. .. dozen	1 0	2 0
Capsicums .. .. 100	1 6	2 0	Potatoes .. .. cwt.	4 0	5 0
Carrots .. .. bunch	0 3	0 4	„ Kidney .. .. cwt.	4 0	5 0
Cauliflowers .. .. dozen	2 0	3 0	Rhubarb .. .. bundle	0 4	0 0
Celery .. .. bundle	1 6	2 0	Salsafy .. .. bundle	1 0	0 6
Coleworts .. .. dcz. bunches	2 0	4 0	Scorzonera .. .. bundle	1 6	0 0
Cucumbers .. .. each	0 2	0 4	Shallots .. .. lb.	0 3	0 0
Endive .. .. dozen	1 0	2 0	Spinach .. .. bushel	2 0	4 0
Herbs .. .. bunch	0 2	0 0	Tomatoes .. .. lb.	0 6	0 0
Leeks .. .. bunch	0 3	0 4	Turnips .. .. bunch	0 4	0 6

MICHAELMAS.  
WAYS AND MEANS.

"WHAT is to be done?" is the cry of both landlord and tenant now that Michaelmas has come and the results of the year's work are found to be unfavourable in many localities, ruinous in others, bright and satisfactory in none. Even fruit and Hop farmers share the general feeling of depression, for the Apple, Pear, and Plum crop is generally deficient, and Hop culture has been so costly that £5 per cwt. can hardly be regarded as covering the outlay, to say nothing of that broad margin of profit which was so confidently counted upon, and which may still be had by those who can afford to wait for it. Unfortunately most farmers are obliged to sell a certain proportion of the farm produce at Michaelmas to obtain means wherewith payments may be made for rent and extra labour, and corn or Hops sold now, if not of an exceptionally high quality, are undoubtedly sold at a loss.

Since the home farmer has had so much additional land thrust upon his hands the question of profit and loss has become a far more serious one for him than it was a few years ago, and he will certainly do well to turn his experience in dairy-farming to account, and enlarge his stock of cows and pigs fully in proportion to his increasing means of producing food for them. First of all let him weigh the advantages and difficulties of his position both in the production and sale of a class of produce for which there is an unfailing demand. The high price of the best butter will probably tempt him to see what can be done in that market, and he will find it answer provided that he has cows yielding plenty of milk rich in cream and an economical and efficient system of dairy management; but it is also well to see if the sale of part or all of the milk would not answer better. We know two dairy farms only three miles apart, one adjoining a railway station whence the milk is despatched twice daily by rail to a large-growing town some ten miles distant. The other farmer three miles from the station finds it answer his purpose best to send butter and not milk to the same town; he also rears large numbers of pigs upon buttermilk and the corn, which would otherwise have to be sold at a loss. Milk, cream, butter, pork, bacon, poultry, and eggs, are these articles of commerce of too trivial a nature for the attention of the British farmer? Is he aware of the immense amount of capital invested in the trade of these important articles of farm produce? Will he rest satisfied to allow the thrifty farmers of France, Holland, and Denmark to absorb millions of capital out of the country for these indispensable articles of diet, while he continues growing corn at a dead loss, and leaves the dairy and poultry to his womenkind? Home farmers know full well how easily pork can be converted into first-class bacon. The process is simplicity itself, the sale for it is sure, the profit is large, yet such a thing as a bacon-making farm is



unknown except in a few localities. Pork, which at wholesale rates is not worth more than 4*d.* to 6*d.* per lb., is worth quite half as much more as bacon.

We are fully aware that in some districts the land is considered only suitable for corn-growing. Well will it be if dire necessity leads even there to the substitution of green and root crops for much of the corn, so that dairy farming and meat-making—aye, even of mutton and beef, may be done profitably, as it undoubtedly can be. No doubt the price of sheep has been seriously lowered by the drought, but with an abundance of autumn keep prices are rising, and it should not be forgotten that within the past forty-one years there have been four instances wherein the drought has been more severe than during the late summer: this was in 1844, 1847, 1870, and 1874.

It is certain that corn-growing will not die out. Well will it be, therefore, to aim both at improved culture and greater economy. Professor Jamieson's prescription for corn manure is a step in that direction; a smaller outlay for labour must be another. We have now a light yet powerful horse hoe, which will contract to 1 or expand to 3 feet, doing work which the unwieldy old tool of wood and iron could not touch, also many other improved forms of implements. Self-binding reaping machines must also come into general use. It may be well to quote some examples of reports of work done by them this season. "A Suffolk farmer cut and tied 200 acres of Wheat and Barley in fifteen days; and a Spalding farmer, who has dealt with 175 acres, considers that the machine would soon pay for itself in a saving of shattered grain, which would be wasted but for its use, as with one of these implements on the farm crops need not be allowed to get overripe, as in many cases they do at present. But the chief economy is, of course, in the saving of labour, in which respect one practical man, after a season's trial, states decidedly that on a large farm a machine would pay for its purchase by two years' employment. The way in which such a saving may be effected is illustrated very forcibly by the testimony of a farmer near Grantham, who in six days secured no less than ninety-two acres of corn, the whole of which was thatched over in ricks at the end of that period. In commencing he set both the self-binding machine and a self-delivery reaper to work in adjoining fields, most of the hands on the farm being required to follow the latter to tie up the sheaves; but as soon as the first cut grain was fit to carry the self-delivery reaper was stopped, and all the labourers but one set to work at carting and stacking. The single man not so employed was reserved to manage the self-binding reaper and keep it going, drawn by three horses, by which agency alone from nine to twelve acres per day were cut and tied all the time carting and stacking were in active progress."

#### WORK ON THE HOME FARM.

**Live Stock.**—October is frequently stormy and wet; the fall of rain exceeds that of any other month; the decrease of temperature is considerable. This note of warning is given as a reminder that arrangements for the winter quarters of live stock should now be finished, so that the yards may be available at once if the weather becomes broken and cold. The abundant growth of grass upon brook and marsh lands is a strong temptation to keep stock out upon it through the present month, and while the weather holds mild and dry it may be done with advantage, and no longer. Many a valuable beast is lost from exposure to cold and wet in autumn. Due care must be taken not to crowd animals in the yards, and to separate those of different ages sufficiently. We have seven yards with lodges to each of them, and yet are obliged occasionally to put up divisions to prevent young or weak animals from being driven from the lodges and food racks by the stronger ones. Cows and young stock of the Channel Island breeds are always put in separate close lodges at night from the present time onwards till spring. As an example of how quarrelsome and tyrannical cows are, we may mention having once turned out in the middle of the night while it was snowing heavily to look after some lambs, and in passing the cow yard we found a valuable young Alderney cow that had been driven out of the deep snug open lodge, and it was evidently afraid to return, for it was standing against the side of a barn for shelter, with snow falling fast upon it. It caught a cold that night from which it never recovered, and its loss added one more valuable item to our dear-bought experience. Although Jerseys and Alderneys give very rich milk, yet the extra care and high feeding necessary to keep them in condition is not to be ignored, and we consider the larger and more vigorous Guernseys to be infinitely preferable. For general purposes a cross-bred cow between the Guernsey and Shorthorn is undoubtedly best, but much care is required in the selection of suitable animals for the crossing. A huge Shorthorn cow only giving ten or twelve quarts of milk daily is certainly not profitable.

**Horse and Hand Labour.**—Ploughing for Wheat-sowing is now being pressed forward, winter tares and Oats will now also be sown. The roller has been passed over the Rye and Trifolium, both which crops are in excellent condition. Root crops have made a remarkable growth during the past few weeks, and although roots generally will be light, yet the crop, especially of Mangolds, will be a fair one. The steam saw has been in use for several days upon timber required for posts, gates, fencing, and scantling for the carpenter's shop. A stock of fire logs has also been sawn in readiness for winter. Pressing necessity induced us to do this,

or otherwise we prefer keeping such work in abeyance for wet weather, several men being required for it when there is much lifting of heavy logs.

#### REPORT OF THE SEED HARVEST OF 1884.

**RED CLOVER.**—The English crop has just been harvested, good average in extent and fine quality promised.

Estimates of the foreign red crop point generally to an unsatisfactory result. The German harvest is as yet incomplete, and late rains are doing considerable damage. Reports from Denmark, Italy, and Hungary speak of very poor crops; whilst that of France seems likely to be almost a failure in consequence of the abnormally hot summer, and remarkable absence of rain during the months of June, July, and August. From America we learn that only unimportant quantities were carried over, and at present the estimates of the crop are uncertain, and not at all propitious. There is every reason to expect last year's average values to be maintained, and probably higher prices reached for red Clover.

**COW GRASS.**—Although always a limited crop in extent of cultivation, it is anticipated that larger averages than usual are under growth of this seed in England this year, and with a continuance of fine weather samples may be expected to average the values of last year, but with a certainty of sounder vitality. This is an important crop, inasmuch that foreign Cow Grass is always of more or less doubtful quality, comparing most unfavourably with English-grown seed. Values will probably open at last season's closing prices.

**WHITE CLOVER.**—There is a fair average acreage of English white Clover seed, and it has been harvested generally in very fine condition. From Germany, the Netherlands, Hungary, France, and other continental sources, reports are very satisfactory, the crop said to be large, and the quality expected to be quite up to the average of previous seasons. Values now exhibit favourable comparison with those of 1883-4, but it is not improbable that higher prices may be reached when the actual produce of the year is correctly estimated.

**ALSIKE CLOVER.**—English samples are coming forward in excellent condition, and the crop is reported to be an abundant one in Europe generally. English seed, both of Alsike and white, from the fact of their greater purity, show great advantages in value.

**TREFOIL** is a satisfactory stock both at home and abroad, and very moderate quotations are made at present for bright, clean, and bold seed.

**LUCERNE.**—This is probably the least satisfactory forage crop of the year, the extreme heat at a critical period of the season burning up the plant. Values a little in advance of last season are readily obtainable.

**TIMOTHY.**—A plentiful crop, with samples of very fine quality, is reported in Europe, and favourable estimates reach us from the States; but the superior character of the "Home" article, combined with a large crop, will doubtless give sellers of the latter qualities the preference.

**RYE GRASS.**—English crops of Italian Rye Grass have been secured in fine condition, whilst reports from some quarters of the continent speak of considerable damage by rain. We anticipate, however, a fair average general output at about last year's quotations. Perennial Rye Grass is an abundant crop and of excellent quality, and is offered at prices comparing favourably with those opening up the 1883-4 season.

**RAPE.**—Is not an extensive acreage, and a brisk home demand for autumn sowing to make up the deficient crop of spring feed has tended to keep values very firm to this date.

**SWEDE AND TURNIP.**—Crops somewhat thin, but harvested in splendid condition—present values favourable to buyers.

**NATURAL GRASSES.**—Generally satisfactory as to quantity, but after critical examination of many samples of Meadow Fescue, Tall Fescue, Sweet Vernal, Meadow Foxtail, Florin, Cocksfoot, and Dogstail, there are but a very small per-centage exhibiting satisfactory standards of purity, so that the most reliable qualities of the above must command high values. There will be an abundance of lower quality seed upon the market at all ranges of prices. The crop of Hard Fescue, Sheep's Fescue, Poa pratensis, &c., is excellent, and finest samples show very satisfactory analysis.—JAMES CARTER & Co., 237 and 238, High Holborn, London, and Mark Lane.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1884. September.		Barome- ter at 32° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass.		
		Inches.	deg.	deg.		deg.	deg.	deg.			In.	
Sunday .....	21	29.785	60.8	59.8	E.	61.0	71.4	51.2	106.3	43.4	0.052	
Monday .....	22	29.792	55.4	52.1	W.	61.2	65.2	52.4	112.2	51.3	0.018	
Tuesday .....	23	30.207	54.8	49.9	E.	59.7	63.5	46.5	105.8	41.1	—	
Wednesday ..	24	30.211	58.3	51.2	E.	58.8	63.8	48.9	95.1	40.9	0.028	
Thursday ...	25	30.216	55.1	52.6	N.	58.1	66.6	46.9	108.8	40.8	—	
Friday .....	26	29.990	59.9	54.6	S.E.	57.7	66.1	50.2	93.2	43.1	0.031	
Saturday ....	27	29.962	57.8	52.9	S.	57.7	60.6	47.4	70.1	40.4	0.042	
		30.025	57.4	53.3		59.2	65.3	49.1	93.8	43.0	0.171	

#### REMARKS.

21st.—Fine, but frequently cloudy.  
22nd.—Fine, and as a whole bright, but cooler; heavy shower at 5.30 P.M.; fine night.  
23rd.—Dull early; fine bright cool day.  
24th.—Fair, but cloudy.  
25th.—Fine bright cool morning; cloudy afternoon.  
26th.—Dull, but warmer; spots of rain during the day.  
A rather cloudy week, with occasional showers but no heavy or steady rain. Temperature about 8° below that of the previous week, and very nearly that due to the season.—G. J. SYMONS.





9	TH	
10	F	
11	S	
12	SUN	18TH SUNDAY AFTER TRINITY.
13	M	
14	TU	Royal Horticultural Society's Fruit Show (three days).
15	W	

### HOME-GROWN LILY OF THE VALLEY.

**C**OMMON flowers are very generally treated in a manner approaching to neglect, but they do not resent the indifference of their keepers in the degree that more pretentious though not more lovely foreigners are apt to do. This is true of common flowers in general, and the humble Lily of the Valley is not any exception to the rule. It is relegated to all sorts of corners; year after year it is left in the same position uncared for, and only secures a short-lived notice when bearing its drooping spikes of perfumed bells. But Lily of the Valley, hardy as it is, and yielding as it does its annual harvest of flowers under the greatest neglect, responds as freely and as fully to good treatment as any plant. I have lifted crowns from amongst shrubs crowded with weeds, and producing spikes with a few small flowers, and in the course of three years with good culture the same clumps have yielded long and stout spikes with from fifteen to twenty large blossoms on each. Nor does it require much outlay in labour and attention to secure such results. Ground is the better for trenching, but that is not indispensable, ordinary digging yields capital results. A thick dressing of fresh cow manure is the best agent to produce improving growth. If there be much straw or litter shake that out, and employ the excrement as pure as possible. In digging mix the dung well through the soil, and see that no clods are left unbroken under ground.

The best time to plant is after the growth is finished in fine weather, any time from January to the end of March being suitable. I have had the finest spikes and foliage from single crowns dibbled in about 4 inches apart each way. It is not of advantage to save any more roots than those which are formed just underneath the crown. A mulching of manure is placed over the beds when planting is finished, and an annual mulching must not be forgotten every winter. In fact, room for the foliage to develope and sufficient nourishment are the two main points the cultivator has to keep in view in order to secure the best results. The position of the beds is not very important. We have them facing east, west, south, and north, as a means of prolonging the season of bloom from out-of-door plants, and I find little difference in the result. We have five varieties, differing slightly from each other when grown under the same conditions, but for ordinary purposes it may be assumed that any Lily of the Valley may be transferred from a narrow, flimsy, yellow-leaved form with short spikes and small bells, into a grand variety with dark green leathery foliage and handsome massive spikes.

As good forced Lily of the Valley is one of those plants which gardeners are proud to have throughout winter and spring, I will add a few short notes on one simple and efficient method of treatment. I have bought prepared clumps, a hundred at a time, and of "Berlin" crowns a thousand, hoping to get better results than from those of my own growing, and in both cases I was disappointed. Our home-

prepared roots proved to be easier to force into foliage and flower, and both were superior to the bought produce. My experience, and I know it is not singular, is that forced foreign-grown crowns cannot produce good spikes before about the middle of January, and not nearly so good then as those from home-prepared crowns. On the other hand, if wanted there is no difficulty in having Lily of the Valley any time from August onwards. We require flowers from the beginning of December, and have the first ready in the end of the month preceding, keeping up a supply right on until the out-of-door flowers are ready.

The forcing does not begin in autumn or winter, but in the preceding spring, when the plants are kept growing so as to finish their growth and form flower spikes early in the season. There is invariably a tendency in these plants to start into growth and flower in the same way as Primroses and other spring flowers in early autumn, and they have accordingly to be kept dry and in as cool a position as possible until cold weather restrains them. At about the end of September the surface of the pots is renewed, the material employed being half dry loam, half dry cow manure, to which is added some artificial manure of our own composition. The soil after this is kept moderately moist. From the middle to the end of October the first batch is "started." Our mode of procedure with this and following batches is to place the pots on the pipes of a plant house, which is kept at a temperature of 55° to 75°. The crowns are thickly covered with clean straw, which is kept moist, and very shortly the buds commence growth. The straw is allowed to remain until the spikes and foliage have pushed through, some of them 3 or 4 inches, then the pots are placed on a shelf, still covered with the straw, which is removed by degrees as the plants develope. It is well, however, to let them be slightly covered until the flowers commence opening. No one who has not tried this simple expedient could credit the difference the straw makes in bringing out both foliage and spikes.

Later in the season potfuls are placed under stages, the chief thing being to start them, and afterwards develope the plants in light. The earlier-forced plants have about a dozen bells to a spike, as the season advances fourteen to fifteen are common, and in February we often have from sixteen to nineteen, and always with good foliage. From the end of February there is no difficulty in inducing plants to come on quickly in any structure where there is a moist warm atmosphere. All the plants as they cease flowering are placed where they will continue growing, so as to be of use the next season. Those that need repotting are attended when past flowering, and any fresh-made potfuls are lifted from the ground in March. The size of pots they succeed best in are from 7 to 11 inches in diameter, and the soil used is a good loam, to which a third part of dry cow manure is added. Any plants which have suffered much from enforced bad treatment in the house are planted out, and in the course of two or three years they are again fit for lifting and flowering in early spring.

The points which require to be emphasised in Lily of the Valley culture are preparing the plants properly, not to force them too rapidly, to cover the crowns during the winter season, to feed well, and thin out the weakest growths. For cutting prepared clumps are occasionally lifted and flowered thickly in boxes, but generally this is not a plan I approve of.—R. P. B.

### INTERNATIONAL POTATO EXHIBITION.

TRIAL OF NEW VARIETIES AT CHISWICK, 1884.

THE Royal Horticultural Society has again generously assisted the International Potato Exhibition by affording all the needful means for trial culture of seedling Potatoes entered for competition. They have been grown at Chiswick under the superintendence of Mr. A. F. Barron, and have been inspected from time to time and finally submitted to



the test of tasting by members of the International Committee. A considerable proportion of the seedlings on trial proved to be comparatively worthless, but a few were found possessing beauty of appearance, high cropping powers, and good table quality. These few are now reported on. It would be waste of time to describe the varieties that were dismissed as undesirable, and moreover it is no part of the policy of the International Committee to condemn anything, for as conditions vary so may results. The highest number of marks for appearance, cropping, and table quality in each case is three. The final award is made at the Exhibition, but the decisions on cropping and table quality are taken at the garden. All that are now enumerated are worth growing, for only to such are marks awarded.

**HUGHES' EARLIEST OF ALL.**—A white kidney in the way of Myatt's; short growth, neat tubers, a fair crop of even size. For crop two marks. For table quality two marks.

**HARVESTER.**—Victoria type, growth robust, very green. Tubers neat, even in size, quite clean; rather late. For crop three marks. For table quality three marks.

**CHANCELLOR.**—A large, flattish, handsome white round. Top growth robust, stems purple, leaves large and very green. Late. For crop three marks. For table quality three marks.

**SUNRISE.**—A very neat white kidney of moderate top growth, a good cropper, and early. For crop three marks. For table quality two marks.

**ASPIRANT.**—A handsome late white, in the way of Rector of Woodstock. Top growth strong, the crop fine. For crop three marks. For table quality three marks.

**PRIDE OF EYDON.**—A white round of variable form, apparently needing further selection with a view to secure regularity of form. A very heavy cropper, tubers smallish, but not objectionally so. For crop three marks. For table quality three marks.

**LONDON HERO.**—A white round, flattish, neat, smooth. Top growth stout and short. For crop three marks. For table quality three marks.

**SNOWBALL.**—A very handsome variety in the way of Snowflake. Top growth very short and stout. Crop even and bright, but scarcely enough of it. For crop two marks. For table quality three marks.

**THE LUKETRA.**—A somewhat rough white tuber of the Snowflake type, but less handsome. Top growth dwarf and stout; crop heavy and even. For crop three marks. For table quality three marks.

**No. 4, LYE.**—This may be described as a white Blanchard. Top growth stout and bushy; the crop heavy and even. For crop three marks. For table quality two marks.

**No. 2, IRONSIDE.**—A yellowish white round in the way of Porter's Excelsior. Top growth dwarf and bushy; crop even and heavy. For crop three marks. For table quality two marks.

**SEEDLING M.P.**—A late handsome white round. Top growth dwarf and stout, the crop remarkable for evenness, no chats, and no overgrown tubers to be found. For crop three marks. For table quality three marks.

**CRUMP'S SEEDLING.**—A smallish white round. Top growth very short; the crop fair considering its earliness. No award was made, as the variety appears not to be adapted for an open-ground competition. It is included in this report, however, because it appears to be well adapted for frame culture, and is likely for that purpose to prove useful.

**RUFUS.**—A large handsome rosy purple kidney. Top growth robust, spreading, and wiry. A late and moderate cropper. For crop two marks. For table quality two marks.

**ROSEBUD.**—A coloured round, delicately mottled, pink on white ground; but giving a rather small proportion of handsome tubers. Top growth short and stout; crop heavy but uneven. For crop three marks. For table quality two marks.

**No. 3, LYE.**—A purple variety of the Vicar of Laleham

type, handsome and useful. Top growth short and stout. For crop two marks. For table quality two marks.

**CARDINAL.**—A light red kidney, not handsome. Top growth strong. For crop three marks.

**No. 6, FENN.**—A handsome purplish red kidney, in form an equal ellipse. Top growth moderate. For crop three marks.

**SEEDLING FLOYD.**—A white variety in the way of Breese's Prolific. Top growth robust, crop heavy and rough. For crop three marks. For table quality two marks.

**BEDFONT ROSE.**—A late red round of medium size and good appearance; long keeping. Top growth strong. For crop two marks.

## THOUGHTS ON CURRENT TOPICS.

"We cannot think about everything at once" is a trite old saying, the truth of which I have never felt so fully as since I ventured to pass under mental review the various topics discussed in these pages.

I MEANT in my last series of "thoughts" to have recorded my impressions on more than one subject that was passed in silence, but hesitated lest I should press unduly on the space that I felt might be better occupied; and I see the Editor has wisely "screwed up" my notes as much as possible. I hope he will do so again, as it is very far from my desire to become a monopolist, and I do not care to see my random jottings in "big type," which only appears to magnify their imperfections.

I MEANT to have said what I thought about "A Northern Gardener's" communication on "Spoiling Vines" (page 257). I may say now that I think no competent gardener will find fault with his estimate of the supreme importance of clean well-developed foliage, and I trust all who have failed in growing Grapes to their satisfaction will attend carefully to the lessons they may derive by an attentive perusal of the article in question.

As to persons who "do not read" any garden literature, and yet consider themselves gardeners, I can only think of them as men who have missed their calling, for there is not in my experience one out of a hundred of such "men in charge" who are a credit to the craft into which they have poked their way to fail, for fail in time they must, and leave their blunders behind them. Men who "do not read anything" should be policemen on night duty or work in a mine, for gardeners they could never be worthy of the name. All the best gardeners of my acquaintance are diligent readers, and it is that habit that has in a great measure made them what they are.

I WISH also to say that I think quite as highly as a "Lancastrian" does about *Narcissus Horsefieldii* for culture in pots. It is beautiful in gardens, but to see it at its best grow it well in pots, and, as your correspondent says, it will be sure to "arrest attention." If I were compelled to choose one variety of *Narcissus* only for conservatory decoration in spring that one would be *N. bicolor Horsefieldii*; and I prefer having clumps established in borders, taking up and potting them than potting dry bulbs, though these do very well. I should like for all whom my thoughts can reach to grow this very handsome single Daffodil.

MR. YOUNG's practical article on cordon Pears (page 259) demands attention. They are the cheapest, the most tractable, and most fruitful of all forms of trees. Apart from furnishing a wall with them, which is very desirable, they are of special value for covering profitably vacant spaces between other trees. I have lately seen in a celebrated garden this plan adopted, and decidedly the best crops and immeasurably the finest fruits were borne by these fill-gap trees. Each tree was planted in a barrowful of fresh loam, the soil over the roots being thickly mulched with rich manure, and judging by results I think this plan worthy of imitation.

THE concave flower pot figured on page 261 seems to be a good notion; but is it new? I have a vague recollection of having either heard or read of a similar pot a few years ago, but where or when I cannot call to mind. However, whether old or new, I think the pot an excellent one for plants that have to be grown for months in the open air.

REFERRING to the note of "W. O." on lifting Peach trees, I have certainly never had experience of growing this fruit in every part of the British Isles, my practice having been limited to three counties in England and one in Scotland. I have never seen evergreen



Peach trees, and if your correspondent will oblige by stating the size of his verdant examples, with the length, width, depth, and nature of the borders, I will bestow a little more thought on the subject in question.

EVIDENTLY fruit *can* be grown on trees in pots, and Colonel Turbeville's gardener is to be complimented on his splendid production as represented on page 265; but beyond doubt many persons fail, and the method is perhaps on the whole more interesting than profitable. Incessant attention and hard labour are essential to success, and these are not the days when more cats are provided than catch mice. Orchard houses should, in my opinion, be provided with the means for excluding frost, and the trees should be planted out. Then, if well managed, the structures are both enjoyable and profitable. Having seen and experienced both failures and successes the above is my deliberate thought on this subject.

Thus far I have been thinking of topics in the issue of the 18th ult., and now pass to the following week. I am much obliged to Mr. Ward for his supplementary note on Pine culture on page 288. I felt that the recommendation of 12-inch pots was open to some qualification, and it is courteously afforded. Under the precise circumstances described I do not suggest your correspondent acts unwisely. I have fruited dozens of Pines in 12-inch pots; but then I found as time went on that I had equally good fruit from plants in 10-inch pots, and some that were considered very satisfactory were from pots 9 inches in diameter. As to the softsoap mixture, my reason for preferring 4 ozs. to twice that quantity to a gallon of water is that I have found the lesser quantity, with petroleum, quite sufficient for destroying scale, and I think your correspondent will find it equally effective if he tries it, in which case I presume he will not indulge in the larger dose.

"SYLVANUS" writes interestingly and sensibly about flowers for vases on page 277. The close packing, smooth lumpishness, and the incongruity of certain flowers for certain vases and positions have to be avoided now-a-days when flowers seem to have become almost necessary adjuncts of well-furnished rooms. It is worthy of note, now that the demand for flowers is so "alarming" to the gardeners, that the greater the taste exhibited in arrangement the fewer are the flowers used for producing an admired effect.

WHEN flowers are somewhat scarce, or whether they are scarce or not, vases may be attractively furnished in great part with leafy sprays. Dark and richly coloured Coleuses, the pretty marbled leaves of Caladium argyrites, the chastely netted Fittonias, silvery Centaureas, and striped pendant Panicums tastefully associated need only the fewest flowers, merely a few "touches" to render them beautiful; and vases thus furnished I have known greatly admired by critics who move in the "highest circles of society." I think, perhaps, this is worth mentioning on the eve of the winter season when there is little left in gardens besides Michaelmas Daisies.

WHEN Mr. Iggulden writes about Tomatoes he is entitled to be listened to respectfully. He is known to take great interest in this fruit, and is the author of a very useful treatise on its culture. His observations on the flavour of Tomatoes appeal to our common sense. The fruit is grown to be eaten, and the quality of the varieties ought to be a primary test of merit; but the time has scarcely arrived for judging them at exhibitions by the palate test, and it is very doubtful if it were adopted that it would give satisfaction, for the simple reason that tastes vary, and so does the flavour of Tomatoes. According to my taste the Orangefield and Carter's Greengage are the best in quality. Mr. Challis, it seems, prefers the "monstrosity" President Garfield; he would consequently award the prize to that variety, while I should ignore it. That is an example of the difficulties that would arise in judging by tasting, and cultivators will have to determine the merits of the varieties for themselves, as in Potatoes.

NOR is judging by appearances as at present conducted at all likely to give satisfaction, for no one knows whether to stage smooth or corrugated fruits. As a rule the latter have the best chance of winning, but there is no certainty that the judges may not prefer ribbed examples. Now that Tomatoes are so generally cultivated and eaten would it not be as reasonable to offer prizes for both types as to provide them for round and kidney Potatoes? Perhaps Mr. Iggulden will give his views on that point, as I am inclined to think the subject is worthy of consideration. By the way, I have no green Tomatoes, but a few ripe ones, therefore if your correspondent would like to know what I think of his "chou-chou pickle" he had better send me a "jar" through the Editor.

A CORRESPONDENT, "B," in his notes on vegetables gives a vote to

Dedham Favourite Tomato for quality, and it is no doubt good; but what is perhaps better worth thinking about is his hint about ripening the fruit in a warm temperature. It is exactly what he says. Fruit ripened in a temperature of 70° is decidedly superior to that of the same variety ripened where the atmosphere is 20° colder; and ripe cold fruit placed in a warm house for a few hours is improved in quality.

THE same correspondent asks if there is a better late Pea than Ne Plus Ultra. For use at this season of the year especially I certainly think it is the best of all. I have tried most of them, and for ten years consecutively it is the only Pea that has given a certain supply throughout October and into November, weather permitting. The best dwarf Pea for late use that I have tried is Hair's Dwarf Mammoth; but I think the true variety is not easy to purchase, as I have had seed from three different sources and found three distinct varieties, which I hardly thought satisfactory. Some good old Peas, like old varieties of Broccoli, seem, as Mr. Luckhurst says, to get "mixed." Ne Plus Ultra, however, fortunately remains true, and it is not likely to go out of fashion before I have done thinking.

I HAVE not convinced "B" that a change of seed in Potatoes is of no advantage. I have no desire to convince him; my desire is that greater care be taken in the selection and preservation of seed, as I know from very careful experiments that the crops would then be better. I have had seed of the old Ashleaf from six widely separated districts for experimental purposes, and the tubers that had been selected from a stock grown in the garden for thirty years gave the best results. A gentleman of my acquaintance had his stock of Myatt's Prolific from the raiser—I think before the variety was placed in commerce, and his crops are still as good as ever; he says he has "tried changes, but will change no more." The soil may be, and perhaps is, particularly suited for "finishing off" Potatoes. Those who have ground unfavourable for maintaining the pristine vigour of the stocks will of course act accordingly; but no one can err in carefully selecting and storing seed tubers.

It is not often I think about Orchids, or at least express my thoughts about them; but I have had sufficient "to do" with these plants (though I have not seen the Mephistophelian Stenia), to know, or think I know, when a writer knows what he is about when describing them and their culture. "J. U. S." evidently is no stranger to them, but writes like a master of his subject. I had to assist in establishing imported Orchids collected by the late Mr. Skinner thirty-two years ago, and we killed or ruined numbers by placing them in a "high temperature before roots were formed," and in using pots three times larger than were needed. Such mistakes are not made now by competent men like Mr. Walker and your correspondent, who might with advantage give a few more particulars as to the temperature in which Mr. Bromehead's Dendrobiums were grown so well. "Annual mean" temperatures will not do, and I think there must be a mistake somewhere, as an annual mean of 45° means that the freezing point must be approached, if not reached, in winter.

THUS far I had written—jotted down what I intended to be my last thought this week, when the Journal of the 2nd inst. arrived, and I see the explanation is afforded that instead of mean annual, mean "winter" temperature was intended, which makes the matter quite intelligible. I see something else too, and hardly know what to think about it. I cannot at the moment satisfy myself whether "T. W. G." is romancing or not in his "gold letters" recommendation; nor whether a "Non-Believer" is serious in his criticism. At any rate, he is "on my track" in a manner which I can well tolerate, and, all being well, I will be on his another week. I dare not trespass further now.—A THINKER.

## TEA ROSES AS ANNUALS.

I CANNOT lay claim to originality as far as the heading of this paper is concerned, but I can safely assert that I had put the idea into a practical shape long before the above title appeared in print. Of the great value of Tea Roses there is little need for me to enlarge upon, and I will merely repeat that I consider them in every way of much greater value than the Hybrid Perpetuals. It is true that as yet they are far behind the latter in point of richness of colour, and as a rule the blooms are also much smaller: but they are perpetual bloomers, can be had in bloom all the year round, are most pleasingly scented, and in some cases yield valuable buds, while the fully expanded blooms of others last longer in a cut state than do most of the Hybrid Perpetuals. Of the Hybrid Teas I shall say nothing at present, as, although we are growing most of the best of them



and find they strike quite as readily as the Teas, they have not been grown as annuals, and conjectures are not altogether in my line.

As I have before stated, we have not an unlimited amount of glass area at our command, and as a consequence, in order to keep pace with the times it is necessary to resort to a certain amount of scheming. Cut flowers we must have in abundance at all times, and to supply these we find it the best plan to grow a few good species or varieties of plants extensively rather than attempt to cultivate a much greater variety, which, if more interesting, is far less serviceable. What prove the most serviceable may, I think, with advantage be reserved for another paper: our present subject is "Tea Roses as Annuals."

Annuals are sometimes defined as flowers which last but one season, and as a batch of our Tea Roses last but one winter these, too, may for the time being be described as annuals. Every spring we strike a certain number of cuttings in a fairly brisk bottom heat, though they are found to strike in a close frame placed in a forcing house without any bottom heat whatever. The cuttings are made from the young shoots that have just matured a bloom, and these are taken off with a heel, the tops shortened to about four joints, and they are then dibbled in singly into 3-inch pots filled with sandy loamy soil. At one time they were struck in deep boxes covered with a square or squares of glass, and all the edges closely covered with strips of paper. This was the Longleat plan, but the cuttings strike just as surely and quickly in the single pots, and there is no check given by potting off. As a rule we struck more than we could well grow and flower in pots; but instead of throwing or giving them away I decided to give them one repotting in order to keep them growing, and later on, or about the end of September, to plant them along the front of a forcing house just cleared of Melons, and usually devoted exclusively to Bouvardias and double white Primulas. Each Melon plant is grown in a separate pit formed with loose bricks, and by re-adjusting the bricks a continuous shallow pit was formed, and after adding a quantity of leaf soil to the old Melon soil and well mixing and levelling it, the place was ready for the Tea Roses. The plants being small they were, after being well soaked in tepid water, planted out rather thickly—that is to say, in lines about 18 inches apart each way. They soon took to their fresh quarters, and in addition to forming fresh flowering growth on the matured wood they in most cases pushed up numbers of branching suckers, and it is these that always produce much the finest blooms. Worked plants of new varieties on trial we find do not throw up these flowering suckers; hence the advantage of having Tea Roses on their own roots whether for planting out or pot culture.

The drying-off or starvation treatment of Tea Roses may result in a fairly good supply of small blooms, but to have them at their best and continuously they must be treated liberally. They are certain to bloom well, no matter how strongly they may grow; in fact you cannot induce them to grow freely without their flowering or attempting to flower abundantly. Well knowing this we attend well to the watering, giving to well-established plants plenty of strong liquid manure, and occasional surfacing of Standen's or, better still, Beeson's artificial manure. Our "annuals" we work as hard as we can from the time of planting till the house is again wanted for a successional crop of Melons, and then being of no further value they are thrown away. Some of the best of them were once potted up, but they never grew well, and were soon surpassed by the newly-struck plants, and we find it best to treat them as annuals. If properly fed-up Tea Roses planted out would, I feel certain, continue under forcing treatment to yield great quantities of bloom for several years, and I believe this has been demonstrated, but by whom or where I am unable to state. They do not require a high nor fixed temperature, but cold draughts are almost fatal to them, being inevitably followed by a bad attack of mildew, and which in dull cold weather is not easily cured.

The temperature of our house unavoidably varies considerably, but as a rule it ranges during the winter and early spring months from 50° to 60° by night, and from 60° to 70° by day. But little air is given, and then only at the top, this being more for the benefit of the Primulas than the Roses. In clear weather, or when much fire heat is given, we syringe the plants freely, this being done about mid-day, or when the house is closed, and principally in order to keep down red spider. A decoction of softsoap and quassia chips, or failing this tobacco water, is occasionally used with the syringing water, and this serves to ward off the attacks of green fly, while nearly clear lime water is a good preventive of mildew.

Nearly any variety of Tea Rose will do well under the above treatment; at any rate, all we have tried have proved more or less useful. Some of the best are Alba Rosea, white, pale rose

centre, good either in the bud or nearly expanded; Catherine Mermet, light flesh-coloured, the finest and most serviceable Rose I am acquainted with; Comtesse de Nadaillac, yellow, tinted rose, good either in the bud or expanded; Devoniensis, creamy white, splendid in the bud; Etoile de Lyon, sulphur yellow, a grand acquisition, and should be grown wherever a perpetual-flowering Maréchal Niel would be appreciated; Goubault, rose, very free, buds serviceable; Homer, blush white, richer centre, very sturdy and free blooming, buds and nearly expanded blooms being alike valuable; Madame Lambard, bright red, buds most serviceable; Marie Van Houtte, yellowish white, fringed rose, very handsome; Niphetos, white, buds invaluable; Safrano, apricot, very free, buds only valuable; Perle de Lyon, rich yellow, beautiful buds and blooms; Rubens, white, tinted rose, very serviceable sort; Souvenir de Paul Neyron, white, tinted rose; and Souvenir d'un Ami, salmon pink, free growing, buds and nearly expanded blooms alike serviceable. We have also tried the miniature Roses Little Pet and Parqueritte with the Teas, and these flowered abundantly throughout the winter, some of the strong branching suckers growing to about 18 inches in height, and producing as many as fifty double blooms. —W. IGGULDEN.

#### HOT WEATHER AND FRUIT TREES.

I HAVE read Mr. G. Abbey's powerful rejoinder to my gentle critique (page 289) of his now celebrated article on page 191, and am not overwhelmed. Your correspondent ought to be somewhat obliged to me for affording him an opportunity for the display of his ability as a controversialist, and also opening the way to such a lucid explanation of the more or less obscure nature of the initial article on this subject.

It appears after all that Mr. Abbey did not mean that immature wood is more fatal to fruit-production than is inclement weather with frost in spring; and thus we arrive at the happy conclusion that there is little or no difference between us. This being so, I should have nothing more to say if it were not that my silence might seem discourteous after I am specially invited to refer to the first and last paragraphs in the original communication which the author reproduces on page 305 last week; also he "wants an answer" to the question as to why neglected trees in some orchards are fruitless and cultivated trees in gardens bearing fruit, since it is assumed that when frost is severe enough it destroys all blossoms alike. That is, I think, a fair way of putting it, and avoids the use of a number of inverted commas, which I never think interesting though necessary in exact quotations. I do not, therefore, intend using many of them, yet, perhaps, one or two may be needed before I have done.

I did not refer to the small qualificatory clauses in question, because they appeared to have but trifling weight as against the great body of the article. Together they occupy at the most three lines of a communication containing upwards of ninety; and the word "although" in the first paragraph, and left out in the cold by the author in quoting, so enormously weakened the sentence that I thought there was little left in it worth notice; and as to the last paragraph that "if the elements are favourable we shall have abundant crops another season," I could not then, nor can I now, perceive that it has any special application to any particular year; for the whole of my contention is that with favourable instead of inclement weather in spring we should have had good crops for the past seven years. I placed this—severely inclement weather and spring frosts, as the primary cause of barren fruit trees. Mr. Abbey, save in three lines of his article, sought to, or seemed to do, to fix the evil on immature wood. That, however, he now tells us was not his object, and he has simply been the victim of misinterpretation. As the greatest of public men are similarly victims, he is in that distinguished company who bear their burdens lightly because all of them are calmly conscious of being right; but there are always plenty of people to think them wrong for all that.

As to many starved and stunted orchard trees being barren this year and healthy cultivated trees fruitful, I suspect the blossom of enfeebled trees was abortive, of healthy trees fertile. No doubt Mr. Abbey knows why some Apple trees are like those of "H. Notts"—bear with "unchanging regularity" every alternate year, at least many trees bear blossom in that way and fruit follows, frost permitting. One season they are weak, the year's rest strengthens them, and that is just all the difference. Thousands of orchard trees need strengthening; they need more of the vigour of well-managed trees in gardens. Freely grown trees with the growths thinly disposed ripen their wood sufficiently to produce an abundance of well-developed blossom in nine years out of ten, yet we have only had good crops of fruit in one year out of seven.

Nearly all the finest fruit that is gathered and wins prizes is the produce of trees in gardens cultivated by intelligent gardeners, and is not obtained from orchards which "know no cultivation" except by "sheep." All the best fruit, we have been told, that was staged at the Apple Congress last year was the produce of trees cultivated in gardens by men. And so it will be again; gardeners will beat sheep any year at the work in question.

All the confirmatory evidence adduced by Mr. Abbey in support of his case really supports my views most emphatically. "The crops in 1869, after the hot dry summer preceding, were ruined by inclement weather in spring," says Mr. Luckhurst; "The pollen was converted into



paste," says Mr. Rivers; "The failure was due to cold and damp when the trees were in bloom," says Mr. Pearson; "Fruit trees are too much left to themselves (that is, are not cultivated)," says "C. M."; "The fruit fell after the excessive cold weather in April," says Archambaud. "Fruit trees have been laden with the finest blossom year after year, yet no fruit has followed; but stunted trees in orchards and healthy well-fed trees in gardens have been alike barren because of severely inclement weather in spring, and nothing else." Who said that? One who will perhaps have no more to say on this subject at present, and who has nothing to retract because so well supported, namely — AN OLD GARDENER.

#### SEASONABLE VEGETABLES.

WILL "A Kitchen Gardener" allow me to say a word in reply to his note on page 303? Whether Brussels Sprouts may be considered in season or not in September I will leave to judges in such matters, and pass on to where it reads, "There are very few gardens in which Brussels Sprouts are ready, nor is it to be regretted." With this latter expression I beg to differ. Where there is a large family to supply and Sprouts not well forward, I should rather say it is much to be regretted. Neither, perhaps, is it reasonable to suppose that such are quite so rare as "Kitchen Gardener" would lead us to think; in fact, the desire to have early Sprouts is, I believe, annually increasing, and to have them in readiness for a change after the first sharp frost they must be fit, or nearly so, early in September; otherwise there must be a sacrifice during the first gatherings, such as we often experience with early summer crops.—E. BURTON.

#### THE PAST ROSE SEASON.

I DARESAY "A. F. M." is quite equal to defending his suggestion, which I endorsed, that in the Rose world "maiden" plants should give place to "yearling." "T. W. G." discountenances the suggestion; still, I think "yearling" plants more correctly describe what we mean. For instance, is a Cloth of Gold tree, budded ten years since, but which has never bloomed—and this is no hypothetical matter—a "maiden" plant? if so, it does not describe what "A. F. M." meant, that a Rose shoot from the bud should in its first year of growth be called a "yearling" plant. Possibly other varieties, Maréchal Niel for instance, or Lamarque would very probably the first year of growth not bloom. Is such a plant, the second year, still to be called a "maiden?" I fancy "T. W. G." would not call it so.

I have not discarded Mad. Cusin, but am closely watching, and thus far I am disappointed. I hope I may be mistaken. As to Etoile de Lyon it is, as "T. W. G." remarks, a splendid grower, very strong, and the foliage is beautiful, but here the star will not shine, and when she does she is inferior to Perle des Jardins in every way.

In my remarks on Madame Lacharme I do not seem to have made myself plain. Supposing I have already freely disbudded a shoot, leaving only the best bud; this progresses, but with me, just as the bloom is beginning to show its colour at every joint on the shoot below the bud, fresh buds are rapidly pushed on, and the central and older bud appears arrested in its growth. Neither does it in my experience greatly improve the central originally selected bud to further stop these pushing buds. I take it, but I may be very wrong, that when these buds start from the lower part of the flower stem there has been already an arrest of sap going to the bloom, and the sap is diverted to these buds that have suddenly and rapidly started into growth. To cut these away may lose some sap, but does not restore the vigorous growth to the original bud.

*A propos* of disbudding, perhaps I shall be considered a heretic, but I confess I am not certain that all Roses like it, and I have sometimes been disposed to think that they resent the interference. Is there a certain stage when this interference is approved of, and the chosen bud profits largely, while if this stage is past only a check is given? From my own limited experience the earlier it is done the better.

"A. F. M." praises Belle Lyonnaise. Certainly it has with me this year been a most useful and beautiful Rose. It is several years since I have grown it, and this year it has well repaid my care; hitherto it had rather disappointed me.—Y. B. A. Z.

#### A VISIT TO HAMWOOD.

AT all times there is something worthy of notice to be found at Hamwood, Clonoe, Meath, the residence of C. W. Hamilton, Esq., the flower garden being especially bright with choice flowers of various tints. By the approach are some very choice ornamental trees and shrubs of great promise, while on the other side are some fine Conifers, amongst them being a handsome *Araucaria imbricata* 45 feet in height and well furnished; a fine *Taxodium sempervirens* in grand health is also notable. The kitchen garden is all that can be desired, well furnished with useful vegetables. The herbaceous borders were very attractive, the useful *Anemone japonica alba* being grown extensively. In a frame I noticed a new *Mimulus*, which is about to be tried for bedding purposes, as it is almost perpetual-flowering. It will be a good addition to the flower garden, as the colour is a deep orange and the plant grows about 3 inches in height. In one of the houses I noticed *Abutilon Boule de Nieve* planted out, forming handsome bushes and covered with flowers, which will be very useful during the winter months. In another house were numbers of *Gardenias* in great health, and the gardener, Mr. Latimer, told me he could find flowers on these plants at any time of the year. The plants are allowed plenty of root room, being placed in very broad

pan, though apparently not more than 6 or 8 inches in depth. The stove is filled with useful flowering plants, the roof being well furnished with *Allamandas*, *Bougainvilleas*, *Stephanotis*, &c., flowering remarkably well. Tomatoes occupy another house and have a remarkable crop, they are grown in pots.—J. PITHERS.

#### HELIANTHUS CUCUMERIFOLIUS.

ENGLISH gardens have been enriched by many choice and beautiful herbaceous plants through Mr. W. Thompson of Ipswich, and the useful autumn-flowering Composite, of which an engraving is given in fig. 55,



Fig. 55.—*Helianthus cucumerifolius*.

deserves a high position amongst the best of these. In several large collections plants of this species have for some weeks been extremely attractive, flowering most profusely, and forming dense bushes 3 to 4 feet high. The ray florets are of a most brilliant golden yellow, contrasting well with the black centre, somewhat like certain *Coreopsis*es or allied plants. It is a Texan plant, and received its name from the resemblance its leaves bear to those of the Cucumber on a small scale, but according to some authors it is merely a variety of *H. debilis*. As a garden plant it deserves every attention, and as plants are readily raised from seed it will probably soon become one of the most favourite of the annual Sunflowers.

#### POMOLOGICAL MEETINGS AT ROUEN.

THE twenty-sixth session of the Société Pomologique de France was opened at Rouen on the 1st inst., simultaneously with the Exhibition of dessert, culinary and cider fruits, projected by the Société Centrale d'Horticulture of the department of the Seine Inferieur. Both were held in



the Hotel des Sociétés Savantes, Rue St. Lô, and the proceedings were opened by an address which was delivered by M. A. Héron, the President of the Society of the Seine Inferieur. After the address the chair was taken by M. L. de La Bastie, Vice-President of the Société Pomologique, and after some introductory remarks by the Chairman the meeting proceeded to constitute the sections, and to appoint vice-presidents and secretaries. Delegates were present from most of the departmental societies of France, and England was represented by Dr. Bull of Hereford, Mr. Piper of Ledbury, and Dr. Hogg of London, all of whom were delegated by the Woolhope Club of Hereford.

What gave an unusual interest to the Exhibition of the Departmental Society of the Seine Inferieur was its somewhat international character. The Woolhope Club, as the foster father of the Herefordshire orchards, was desirous of placing the produce of these orchards with the representatives of those of Normandy, and as soon as they were fully exposed to view it was evident where the attraction lay, and discerning eyes could pretty well decide where the honours would fall. Dr. Bull, with his usual energy and discrimination, had, on behalf of the Club, procured from the most important gardens and orchards in the county the best examples that could be found of the dessert and culinary varieties of Apples and Pears, as well as a considerable collection of the leading cider Apples and perry Pears, and samples of the finest *crus* of cider and perry. This collection consisted of fifty-seven dishes of dessert and culinary Apples and fifty-seven dishes of Pears. Among the former might be seen noble fruits of Warner's King, Lord Derby, Lord Suffield, Lord Grosvenor, Gloria Mundi, Costard, Catshead, Alfriston, Tower of Glamis, and Cox's Pomona. The dessert collection was also very fine, and exhibited the several varieties in their true character. They had evidently been selected with great judgment, and were spoiled neither by their excessive size or by being too small. Among these were fine examples of the true old Golden Pippin, Yellow Ingestrie, Cockle's Pippin, Pomeroy, Fearn's Pippin, Ribston Pippin remarkably well shown, Golden Reinette, Braddick's Nonpareil, Adams' Pearmain, Cox's Orange Pippin, Lord Burghley, Rosemary Russet, Pearson's Plate, Scarlet Nonpareil, and Old Nonpareil. The Pears were also very attractive, and though not so large as those exhibited by the Society of Rennes they were not surpassed by any other collection. Among these we specially noticed General Todtleben, Triomphe de Jodoigne, Thompson's, Marie Louise exceptionally fine, Beurré Bosc, Van Mons Léon Leclerc. So highly did the Society appreciate this collection that they awarded it a gold medal. The only other fruit that was exhibited on behalf of the Woolhope Club was a fine bunch of Black Alicante Grapes, which was so far ahead of all the other Grapes shown that this was also awarded a gold medal.

The Exhibition which next claims our attention because of its extent and the splendid development of the specimens is that of the Horticultural Society of Rennes, to which a gold medal was awarded. The varieties that were the most striking were Beurré Diel, Glou Morceau, Doyenné du Comice, General Todtleben, Beurré Superfin, Duchesse d'Angoulême, Maréchal de Cour, and Beurré Hardy. Of the following culinary varieties there were very large specimens—Catillac, Uvedale's St. Germain (called Belle Angevine), Grosse Calebasse, Gille-ô-Gille Poire d'Hardenpont, Bonchretien de Vernois. A silver medal was awarded to a rather extensive collection exhibited by M. Jouanne, but there was nothing in it that called for special notice. M. Védie, a nurseryman at Boisguillaume, was awarded a large silver-gilt medal for a very excellent collection of 102 varieties of Pears, which consisted of the usual sorts with which we are already acquainted in this country. Indeed, one rarely meets with any varieties possessing any merit that are not already to be met with in our gardens. M. Varenne, Director of the public gardens of Rouen, exhibited a very large collection consisting of 234 varieties of Apples and 136 of Pears, but besides the quantity there was nothing in the quality of the fruit to call forth admiration. As might be expected, there were numerous other exhibitors whose names are quite unknown in this country, and to mention them would not be of any interest.

There were two very interesting exhibitions of Grapes, both of which were grown in the open air. The first that calls for attention is that of M. François Marc fils of Vaudrieul in the department of the Eure. It consisted of 100 varieties, among which we observed some of those grown in this country, but they consisted chiefly of the small dessert Grapes like the various varieties of Chasselas, the small Frontignans, and generally of the many varieties that are cultivated in the gardens in the south of France, and which, though not unknown to the initiated in this country, are not in general cultivation. They were very carefully and correctly named, and M. Marc deserves great credit for the attention he bestows on this branch of fruit culture; it was awarded a gold medal. There was another very good exhibition, though not so extensive as the former, from M. Charles Macaire of St. Pierre, near Elbeuf. It consisted of fifty-four varieties grown in the open air in the department of the Seine Inferieur. The bunches were not so large as those of M. Marc, but they were also well ripened and very correctly named. To these the large silver-gilt medal was awarded. In these collections we observed some of our own popular varieties, but of course they were very much inferior in quality to the manner in which they are produced in our vineries. There were bunches of Gros Colman wonderfully well developed to have been grown in the open air. Golden Champion was excellent and perfectly ripened, and the remark on the label was that it is of "1er qualité et très fertile." Black Hamburg was small, but well coloured. Calabrian Raisin quite small and disappointing, when we know to what a size it can be grown. Trentham Black also very small; Royal Ascot smaller still; Alicante not half a pound, and Mill Hill Hamburg also very indifferent.

Of miscellaneous fruits there was no great variety. The only

collection worth noticing was that of Mr. Audibert, nurseryman of La Cran (Var), which consisted of several varieties of Diospyros Kaki, a Japanese fruit, which has already made its appearance at some of our meetings at South Kensington. The names of the varieties were Toyama, Tsouroukaki, Torokoukaki, Kiarakaki, Ochirakaki, Tiodemon, Hatchiya, Matchimistan, Yakoumi, Marzeli, and Guiboki. None of them was ripe, consequently we could not form any opinion of their character as a dessert fruit. There were some specimens of Diospyros virginiana very well ripened and of excellent flavour. There are also several varieties of this, some better than others, and we have tasted them growing in the gardens of Tonelle, near Tarascon, so delicious, we have regretted that they are not cultivated in this country, which they might easily be in an orchard house, or in a house slightly heated.

It would serve no useful purpose to extend this report farther and to occupy our space with a mere list of exhibitors, the names of whom can be of no interest to our readers.

The exhibition of cider Apples, which was under the auspices of the Association Pomologique de l'Ouest, was extensive, and included, besides fruits, cider presses, pulping machines, and cider.

THE labours of the Congress of the Société Pomologique de France were much lighter than we have ever seen them, and consisted as usual in the examination of the merits of dessert fruits, and so rigid are their investigations there was not one which was adopted. At the close of the Congress the President presented Dr. Hogg with the gold medal of the Society in recognition of the services he has rendered to the study of pomology.

### THE POLITICS OF THE POTATO FUNGUS—A RETROSPECT.

[A Paper read by Worthington G. Smith, F.L.S., M.A.I., at the Meeting of the Essex Field Club, Oct. 4th, 1884.]

A FEW years ago a writer in *Punch* in reviewing some of my published work said that I had at that time extracted all the fun out of fungi. A week or two ago the editor of a horticultural paper said that I had exhausted every possible pleasantry from fungi, and he publicly challenged me to write another humorous fungoid essay. I do not consider myself quite played out, but it is not my intention this evening to aim at any pleasantry. If there is a species of laugh raised it will possibly be of the sardonic variety.

There is nothing laughable in politics—at least so some persons think—and it may sound strange to many that there should be any politics about the Potato fungus. Politics were at one time rife on the subject of the origin of species, on evolution, on the antiquity of man, and lately on what has been termed the "Schwendenerian hypothesis," and still more lately on corn mildew. The word "politics" means the contest of "parties" for power. Now there are two or three "parties" who wish to have the Potato fungus entirely in their own hands, and to further this end they leave no stone unturned and no shift untried. Feeling runs so high between the contending "parties," that in their published letters they frequently descend to personal abuse and even libel. Sometimes for a change the more lofty political grandees affect to ignore each other, and even to forget that their opponents are, or ever were, in existence. A talented, critical, and greatly respected young lecturer about a year ago strongly advised all his audience—after they had heard his lecture on the Potato disease—if they wished to know all and everything about the Potato fungus—to closely study the writings of Professor B and Mr. C. Professor B happened to be his former master and Mr. C was then his superior officer, and actually the chairman of the meeting. This was a case of unmitigated Potato politics, Mr. D and Professor E were quite overlooked.

The chief combatants are the professional professors and the continental "doctors," but besides these there are always several little skirmishers who try to aid the great professors and the doctors, thinking that by delivering a little blank cartridge and making a noise they may gain the approval of their masters, and some day perhaps get a testimonial.

There are different sorts of "professors" and "doctors" as we all know; it will therefore be well understood that when I refer to the "doctors" and "professional professors" (the sole aim in life of the latter being too often the mere making of professions) that I do not refer directly or indirectly to any of the genuine doctors and the *bonâ fide* professors whom we all have such very good reason to respect.

For my part, and I hope I am not envious, I have never yet been a professor, or a doctor, or a paid officer of any museum or institution. Politics, therefore, are not in my line. When I was examined in the House of Commons on the nature of the Potato murrain, I exhibited an original drawing of the Potato fungus, whereon a certain M.P. coolly asked me if I had copied it from one shown by a respected Professor from Kew a few days previously. My reply, of course, was that the Professor had more likely copied mine. Thereon I was asked (as the printed blue book will show) if I "belonged to the British Museum." "No," I replied. "I consider the British Museum partly belongs to me." These simple unsophisticated answers show that politics are not in my line. Notwithstanding this, I have unfortunately been mixed up with the Potato fungus perhaps more than any other person, and it is because I, an inoffensive outsider, once ventured to look at the Potato fungus and modestly express an unbiassed opinion, that the more dangerous form of politics came into existence. I have never blindly sided with any "party," and this indeed has been my misfortune, for a Potato conflict never arises but I am bound to receive shots from both sides, as well as a



great deal of blank cartridge and smoke from the little skirmishers who are on the look out for testimonials and little lectureships.

The idea has long been present to my mind to some day explain, in the pleasantest manner possible, how the political feeling was first evolved and how I was one of its innocent causes. As the opportunity has now presented itself, I will endeavour, without the expression of any bad or jealous feeling, to recount the political facts of the case. I will mention no names unpleasantly; if there are any unpleasant persons mixed up with the Potato business we will let them remain as possible myths. Being a "free-lance," and not having yet been purchased or disposed of by any "party," I am able not only to take very good care of myself, but can dispense with any attempt to please or displease anyone, from the loftiest professional Professor down to his pupils, the very smallest of the *£ s. d.* skirmishers.

Politics, then, were first introduced to the Potato fungus (quite unwittingly, it must be acknowledged) by a lord. In the year 1873 this guileless lord was sufficiently ill-advised to offer a prize of £100, under the auspices of the Imperial Corn-growing Society, for the best essay on the Potato disease. This offer was much disapproved by men of science, and for the first time unpleasant feelings were aroused. There were at the time several eminent fungologists alive in this country, and amongst them the noble old botanist Berkeley, who had already done far more than any other living man to throw light on the nature of the Potato disease. I need hardly say that no single man of science in Europe (and the advertisements were published in France and Germany as well as Britain) responded to the offer; but, on the other hand, nearly a hundred writers, termed "ignorant crochet-mongers" by the opposition "party," were the sole competitors. All the essays were of course so feeble or atrociously bad that the prize was necessarily altogether withheld. By the action of withholding the grand "prize" a full hundred dismal, dissatisfied, and irritated ignorami were evolved from chaos to discuss Potato politics. A reference to the horticultural, agricultural, and botanical journals for 1874 will show what unparliamentary (or, perhaps, I should say parliamentary) language began to be used in the discussion of the nature of the Potato disease and its accompanying fungus.

The startling action of the Imperial Corn-growing Society in the same year imported further bad feeling and more harsh words into the discussion of the nature of the Potato disease, for in that year the Society offered three prizes of £100 each for Potatoes that would resist disease for three years in succession. The Secretary of the Society obligingly informed the public that "several writers" of the feeble and scandalously ignorant essays had positively averred that "the only way to prevent the disease was to plant certain sorts." It is to be hoped that the writers had no pecuniary interest in these "sorts." However, the feeble and bad essay writers were to be appeased in some way, so the three prizes of £100 each were duly advertised. Some persons said that this action was little better than offering premiums for quackery, feeble-mindedness, and impudence, and the violent letters that were published in the papers became more marked, intensified, and political than before. The "crochet-mongers" themselves remained exceedingly wild, for these feeble fanatics were requested to forward no less than a ton each of "disease-proof" Potatoes for trial in different parts of the three kingdoms. The competition certainly turned out rather flat, for only 6 tons of Potatoes were received by the Society, and of these 3 tons belonged to one competitor, so there were really only four competitors for the three prizes. It is hardly necessary to inform the members of a society like the Essex Field Club that this second competition ended like the first in an abortive and very irritating way. Again no awards were made, because it was, of course, found that no variety of Potato would resist the disease in all places for even one year. Two years had now been wasted, together with a great deal of labour and money. The published letters belonging to this period of the dispute are saddening to refer to, as they are full of painful personalities. Some of the writers were officers of the Imperial Corn-growing Society and the Imperial Apple-growing Society. In one of these published letters the purely scientific aspect of the subject was clearly brought forward by a Professor, who directed attention to the work already done in the investigation of the nature of the Potato disease by Berkeley. He also exposed the futility of offering prizes to "crochet-mongers" and the proprietors of "disease-proof" Potatoes. A few anonymous skirmishers joined in the fray, and at the end of 1874 and in 1875 two writers, who signed their names, and an anonymous nobody, tried in a marked but abortive manner to tear Berkeley's justly won honours away from him, but the Professor who defended Berkeley lashed out so vigorously in the pages of *Nature* and the *Gardeners' Chronicle*, that he completely collapsed his opponents. The Imperial Corn-growing Society now began to instruct its members in print on the nature of the Potato fungus and what Professor De Bary of Strasbourg had done. These articles were marred by amusing misprints. Professor De Bary's conidia were termed "jonidia," and the fungus, it was said, at last got into the Potatoe's "tubes." The mystery of the "tubes" has never been solved, perhaps "tubers" rather than bronchial tubes was meant. These misprints were of course reprinted and held up to public scorn and ridicule by the opposite "party." No English mycologist took any part in the dispute. For my part I was simply amused; it was Christmas time, and the proceedings pleasantly reminded me of the playful exploits of Christmas clowns. I little thought at that time how soon and how cruelly I was doomed to become involved as a combatant. Although at this time the politics of the Potato disease had taken a dangerous form, the Imperial Corn-growing Society had not yet completed its work of confusion. Another potent ingredient had yet to be added to the

dangerous broth in the enchanted Potato chaldron. It was determined to get rid of the £100 "prize" in some manner, so the judges of the feeble and ignorant essays "invoked foreign aid," as an opposition Professor wrote and proposed that the £100 should be sent over to Professor De Bary of Strasbourg with a request that he would investigate the nature of the Potato fungus for, I suppose, the wooden-headed Englishmen. Professor De Bary, of course, quickly accepted the sudden windfall, and "entered," as we are told by one of the other party, "cordially into the Society's plans." The sending of the money to France, or rather Germany, for "Napoleon the Little" had abdicated and was then an ex-emperor in Britain, piled more coals on to the political fire. The printed personalities of the rival parties now became quite shocking; still no fungologists took part in the dispute, they held themselves above the unseemly squabble. It is to be hoped they did not envy the Professor his £100 windfall, but however that may be, the fungologists of Britain made no sign, but went quietly on with their own regular work.

It must be explained at this point that in 1874 there was a "missing link" in the life-history of the Potato fungus. No one was quite certain as to its mode of hybernation through the winter. Berkeley, however, had long before expressed an opinion that the fungus produced resting-spores, and that these resting-spores hybernated all through the winter months in a sort of chrysalis state, and woke up again each summer to invade Potatoes. In fact so certain was Berkeley of this mode of hybernation that he figured nearly thirty years previous to the time of which I am speaking, the actual resting spores of the Potato fungus from examples seen by Dr. Rayer and Dr. Montagne. For thirty years, however, no one had seen these resting spores again; but as a proof that there was no mistake about the existence of the bodies Berkeley had in his herbarium (preserved between slices of mica) Montagne's original examples. The Imperial Corn-growing Society was now very anxious that the Continental Professor should rediscover these resting spores, the Society had risked its £100, and they were naturally desirous that the Professor should look alive and be "up in time," as pugilists say. The Professor sent in some preliminary observations, which were reported. In this report it was stated that the Professor "had at last discovered the certain nids, or resting places of the oospores or active primary germs of the disease." From that day to this no one has ventured on an explanation of what was meant by the Professor's wondrous discovery of the "nids"—I do not wish to be sarcastic, but I confess I have never yet seen a genuine "nid." They are not mentioned in "Sach's Text Book" or "Hefrey's Elementary Course." The wooden-headed English botanists also wondered why the Professor had termed the oospores or resting spores—active primary germs. Bodies that hybernate for eleven months out of twelve are usually considered "passive" rather than "active." Whether it is correct or incorrect to describe an oospore as a "primary germ" I will leave for the decision of the skirmishers who are on the look out for testimonials. I need not say that this report was again held up to odium by the opposite "party," and still more fuel added to the political fire. Up to this time I had taken no special interest in the Potato discussions. I was only a spectator, amused by the sparring and buffeting. My time had not yet come.

Now, in the summer of 1875, whilst all the political wrangling was going on, and at the very time when Professor De Bary was at work on the elucidation of his mystic "nids," the Editor of the *Journal of Horticulture* sent me examples of Potatoes badly diseased. He said the disease appeared to him to be somewhat different from the common form familiar to gardeners, and he requested me to microscope the examples forwarded. I did so; it was night, and the examination was made under a strong argand burner. As soon as I placed the plants under my quarter-inch objective I saw not only the ordinary fungus of the Potato disease, but also attached to it Berkeley's long-lost oospores, the resting spores of Rayer and Montagne.

Having many other subjects in hand, I paid no extraordinary attention to these resting spores. I quietly drew and measured the bodies, looked up the literature of the subject, and at the next meeting of the Imperial Apple-growing Society exhibited the actual things, with the drawings, and read the notes. To show how little I esteemed the whole job I that day gave away my original drawing to an officer of the Royal Gardens, Kew, and it has not been in my possession since.

I was quite innocent. I did not know that I had done anything very wrong; but before my paper was printed I received a letter from Berkeley telling me to prepare myself for the worst, for, considering the state of political feeling, I should probably soon have "a nest of hornets round my ears." Being always of a timid and retiring disposition, this letter frightened me a good deal; but I was frightened still more on the evening of the same day, for whilst dining at a friend's house my friend suddenly told me in confidence that a certain luminary of the opposition had dined there the day before and had said that he would, at the next meeting of a certain scientific society of which I was and still am a fellow, "skin me and kick me into a cocked hat." Another gentleman said he would be able to "sit on me easily." It now became painfully apparent that I was midway between two fires. I had the Continental professors and doctors on one side (they had already bagged the prize, and probably spent the money) and the opposition on this side. I no sooner received a shot in the front than I felt another from behind, till at last there was no help for it; and, although I have never been of a disagreeable or pugnacious disposition, I was obliged in self-defence to strike out right and left.

Fortune aided me a little, for the Imperial Corn-growing Society gave me a commission for some small engravings, and a second Society did better by awarding me a large medal of gold. I was now greatly amused by the contentions and disputations of the learned professors



and the doctors about my discovery, or rather re-discovery. Most of the gentlemen differed from me (that was to be expected), but they differed much more seriously amongst themselves. Several of these parties said my resting-spores did not belong to the Potato fungus; and on being asked what they did belong to, the different doctors mentioned in reply no less than nine other fungi. One professor said it was evident that I did not know the Potato fungus at all. I hope I am not a conceited person, but I think I can say without boasting that I so effectually knocked down all the nine tottering nine-pins that were set up by the different little professors, that not one has ever been heard of since I bowled them over and smashed them. The professors showed too much haste in attacking me, for they commenced as soon as or before my paper was in print. It is true I had no dark and secret "nids" to show, I only had the resting spores of the Potato fungus, and my resting spores were unfortunately not "active," like the ones discovered by Professor De Bary, for they hybernated for nearly a year before germination took place; they were decidedly "passive" for a long time. When they germinated they reproduced the fungus of the Potato disease, and the cycle was complete.

Whilst my resting spores of the fungus of the Potato disease were still hybernating Professor De Bary's paper was unwisely published by the Imperial Corn-growing Society, and I can truly say, without intending the slightest affront, that there was not a new idea in it, except perhaps the suggestion that the name of the fungus should at once be changed from *Peronospora* to *Phytophthora*, a suggestion that has never been taken kindly to. The essay was hastily written, premature, and again defaced by remarkable misprints; for instance, the "coating of cellulose" belonging to oospores was described as a "cellular membrane." No reference was made to the much-looked-for "nids;" oospores were certainly mentioned, but they were not described as before as "active primary germs." There is internal evidence that the paper was never written as printed, and some of the new (?) illustrations were twelve years old, and were already the too familiar old friends of British botanists.

Owing to political opposition my hands were quite full from June, 1875 to July, 1876. I was obliged to keep a large number of spores alive for an entire year under different conditions of moisture, dryness, &c., beneath bellglasses. Botanists and other observers applied to me for examples from all parts of the world. I was compelled in my own defence to have a large number of microscopic preparations made by mounters at (of course) my own cost, and these were dispatched in different directions by post. I also had photography and a large amount of engraving and printing executed at my own cost to simply maintain my just position against political cliques. After being handicapped in this way for more than a year, and, moreover, getting the sack through delaying illustrations from a journal that I had illustrated for many years, I added up my accounts of expenditure and found myself out of pocket more than four hundred pounds. This loss was pleasant to the politicians. Aid, of course, might have been held out to me in various ways, but in whichever direction assistance was looked for it was quickly and uniformly withheld. Urgent whips, three times underlined, were issued, first by one "professor" and then the other, and the consequence was that between the two fires I had to bear the whole brunt of the Potato business on my own shoulders. I do not complain; I hope I am not dissatisfied, and I am sure I have no grievance against any single person. If I have had some hard blows, I well know that I now hold the victor's place. The professors and the little skirmishers have every one been silenced; the authorities of the British Museum have bought a large number of my drawings and examples, and the authorities at Kew have kindly accepted others as gifts. My scars are honourable, and none have been received for pay.

Politics are, unfortunately, still so rampant in reference to the subject of the Potato disease that when a publisher recently had something of mine in the press I was afraid for it to be announced until the work was actually printed. Had it been announced some Potato politician would probably have interfered, and written to the publisher to say that I was heterodox, that his (the writer's) "dox" was the only ortho-dox, and that my views and all other views which differed from the writer's views, were "heterodox" and dangerous, and now had, and always would have, a very bad moral influence. I do not make this statement without reason, for I once had my MS. and unpublished engravings temporarily returned from a publisher on account of a letter of this class. By an inadvertence a clue to the writer was included in the returned MS., and I have kept this written clue as a curiosity (rarely exhibited—I am never unkind) amongst the implements of barbarians in my museum of stone and bronze antiquities. The subjects belonging to the "Origin of Species" and the "Antiquity of Man" were treated in the same manner once. The Schwen-denerian hypothesis and the subject of Corn Mildew, as well as of the Potato fungus, are all so now. The professional political priesthood keep a strict *index expurgatorius*, which is supposed to be held in reverence by very young beginners. The works of Darwin and Lubbock are not allowed in Russia to this day. The Czar gets dynamite instead.

For ten years—from 1874 to 1884—I have sent nearly all my notes for publication either to the *Gardener's Chronicle*, or to some other horticultural or agricultural journal where Potato politics are ignored. This has more than one advantage, for one gets paid for one's work on the horticultural and agricultural press; one is not expected to work for nothing and pay for the paper and printing. The scientific politicians certainly sometimes threaten to ignore me, to forget me, to refuse to quote me or pat me on the back; the Royal Society even declines to catalogue writings from such journals among their scientific papers, but I well know that when sound contributions are once preserved in the safe custody of print

they will not be lost. I do not forget whence Charles Darwin derived a vast number of his facts, for he has duly acknowledged every source. I prefer, therefore, at present to stick to the bridges that have carried me over, and to nail my colours to common sense rather than to metaphysical or "metœcious mycology," as the professors say. If any gentleman wishes to become a supernaturally learned Potato politician, and to know all about "jonidia," the "tubes" of the Potato (not bronchial), the mystic "nids," and the "active" germs called "resting spores," each possessed of a "cellular membrane," they must consult the works produced by Potato politicians, for politics are not, and never have been, in my line.

### LAPAGERIAS.

THERE are two plants (*L. alba* and *L. rubra*) of these beautiful greenhouse climbers in the conservatory at Oakbrook, Sheffield, that are especially attractive at the present time on account of the large number of flowers they are bearing and the fine healthy foliage in which they are clothed. The white variety is the most floriferous; the numerous large clusters of beautiful flowers amidst the dark green glossy leaves give it a fine effect. I counted one of the largest clusters, and it contained seventeen blooms. Such bunches as these are not often seen. The red variety is not so full of bloom; being a little later than the white, many of its buds are not open, so its full beauty is not yet apparent. Each plant occupies a corner at one end of the house in a box adapted to the angles; the longest sides next the glass being about 3 feet; the inner sides, by the path, about 18 inches in length, 1 foot deep, and 15 inches wide. The white variety was placed when quite a small plant in its present position about four years ago, and now covers a roof space of about 120 square feet. A fortnight ago it was bearing nearly 1000 expanded blooms, being an average of eight to the square foot. Many gardeners have called to see it, and say that they have never before seen a plant so floriferous.

The red variety is an older plant and occupies about the same space as the white one. It is also very vigorous, but does not make quite such robust growths as the latter, which appears to be naturally more vigorous than the varieties of rosea, and only requires providing with a suitable position and proper treatment to produce most excellent and satisfactory results. These plants are grown without the aid of artificial heat, except in winter. The pipes run just under the boxes and keep the roots of the plants slightly warm during the cold weather. About March they were pruned, when the weak growths were either thinned out or layered, and during the season a top-dressing, consisting of peat two parts, loam one part, charcoal in small lumps, and sand one part, with a small quantity of Beeson's bone manure. The compost did not contain much of the latter, only what is called a "dash" in gardeners' parlance. The boxes being well drained, copious supplies of water are given every day during the summer months and about twice a week in winter.

The health, vigour, and beauty of the plants speak for themselves, and testify that Mr. Woodcock's treatment has admirably suited their requirements and brought them into a state of cultivation seldom, if ever, seen in this neighbourhood.—J. H. S.

### SEASONABLE WORK—SPRING DIGGING.

THE present is a time of comparative quiet in the kitchen garden, and presents a good opportunity of bringing forward work that may have been left in arrears during the busier season just past. The old advice would have been, Get all vacant land dug or trenched—advice good enough on some soils no doubt, but so long as I have to deal with a heavy soil autumn digging will never be practised. I had all our land dug last autumn, and shall never forget the labour required to fit it for the reception of the seeds in spring. I am confident that we could have dug and prepared it twice over, if it had been left undug, in the time we spent getting it into anything like condition. Last winter was without doubt exceptional in its mildness, but even in a severe winter I believe that the land is as well if not dug. I was talking recently with a very observant amateur, one who has been for a long time the most successful exhibitor of vegetables in this district, and he said he had always grown his Celery and Onions for exhibition side by side. The Onion ground was of course made very firm, and that for Celery the reverse. The land was never dug till March, and whether the winter had been mild or severe the firmer ground always turned up the sweetest. This is in accordance with my own experience, but I have practised autumn digging because for me it has always been most convenient; it will, however, be discontinued, and we must do all we can to relieve the pressure that will be occasioned in spring by allowing the digging to stand over. On all vacant land the hoe will be set to work and thus cause the seeds of weeds to vegetate that would otherwise remain dormant till spring, and we shall thus be able to destroy them before they have the chance of seeding. The dead canes have been removed from our Raspberries, and as soon as the leaves fall next year fruiters will be secured to the stakes or wires. All wall trees will be pruned and nailed as the leaves fall; what little pruning our larger fruit trees, other than those on walls require, will also be done as soon as



possible. Currants and Gooseberries must be left over till we see what buds the small birds have left us. Manure will be wheeled in as opportunity offers, and be stacked up in heaps along with all kinds of vegetable refuse and such weeds as are not in a state of seed and have not perennial roots. As soon as it is known that the heap has commenced to ferment the whole will be covered with soil to prevent rain washing away the most valuable part of the manure.

We are at present busy transplanting and re-arranging evergreen shrubs, which is best done during the present month when possible. After the extremely dry summer all deciduous trees will cast their leaves earlier perhaps than usual, which will allow the digging of shrubbery borders to be accomplished in good time, and the planting of deciduous trees and shrubs at the time most favourable for it. We are also preparing ground for Roses, which will be planted by the middle of October, should the weather not be too dry. Last year we planted 100 about the time mentioned, and they hardly seemed to feel the operation; they were, however, raised at home, and were not out of the ground very long, not more than a dozen being lifted at once. As might be expected they have grown and flowered well, having now the appearance of plants several years old. When plants have to be purchased and carried any distance the middle of November is quite early enough to plant them. Good Roses can now be purchased so cheaply that it is not worth while to propagate them at home, but I am compelled to propagate them or not have them; and as I am suffering from an acute form of Rose mania, I prefer the little trouble of propagating a few yearly. Any turf that requires relaying will also be done shortly. A supply of pea-sticks will also be provided, in short many things that have usually been left until the digging has been done will be seen to as soon as convenient, so that when the cropping season comes round there will be nothing to interrupt the progress of that all-important duty.—T. A. B.



INTERNATIONAL EXHIBITION FOR 1885 AT THE ALEXANDRA PALACE.—According to a prospectus just issued, "An International Exhibition of Arts, Manufactures, Scientific, Agricultural and Industrial Products, Mechanical Processes, and New Inventions, will be opened at the Alexandra Palace, Muswell Hill, about March 31st, 1885, and will be kept open for at least six months." The scheme is said to be under distinguished patronage, and one-tenth of the entire receipts at the gates will be distributed amongst the various hospitals of London. A special "World's Forestry Exhibition," under the management of Mr. J. Forsyth Johnson, is also announced as one of the most interesting portions of the plan. This will comprise classes for examples of practical forestry, forest produce, scientific and ornamental forestry, literature, views, photographs, &c., and every means will be adopted to render the whole Exhibition as attractive as possible. Diplomas of honour, gold, silver, and bronze medals will be awarded to the exhibitors according to the respective merits of their contributions. The Executive Commissioner is Mr. G. Collins Levey; the Chairman of Committee for Charitable Purposes and of Juries, Col. Sir Herbert Sandford, R.A.; and the Secretary is Mr. Edgar Ray.

PRESENTATION.—On the 3rd inst., at the close of the Congress of the Pomological Society of France, held at Rouen, the gold medal of the Society was presented to Dr. Robert Hogg of London as a recognition of the services he has rendered to the study of pomology.

A WHITE "CACTUS" DAHLIA.—"B." writes:—"From the 'Home of Flowers' a Dahlia with an unfamiliar name was sent us in May, and during the past few weeks this stranger has caused quite a sensation. The flowers are large, and in general appearance reflexed, this arising from the scoop-like shape of the florets. They are pure white and very pretty, and so much admired that in a cut state they rank among the best flowers we have. It was surmised that this might be a 'white Cactus,' and the other day an autumn list of flowers came to hand from Swanley, and in it the intelligence that it is a 'white Cactus;' the true one, too. Its name is Mr. Tait, and I can only recommend it as one of the best varieties to grow for next autumn. I intend to have a large stock of it."

HOME-GROWN BULBS OF LILIUM AURATUM.—Messrs. Collins Bros. & Gabriel, 39, Waterloo Road, S.E., have submitted to our inspection four wonderfully fine bulbs of *Lilium auratum* as samples of home-grown produce. In size, weight, and solidity they were superior to any we have seen this season, and fully equal to those sent by the same firm last year.

The weight of the bulbs sent varied from 1 lb. 5 ozs. to 1 lb. 8½ ozs., and the girth from 15¼ to 16 inches.

DETACHED GREENHOUSES.—A decision has been given by Mr. Hosack in the Worship Street Police Court, which will interest the owners of suburban villas. The District Surveyor for East Hackney (North) summoned a gentleman for a fee in respect of a detached greenhouse, 16 feet long and 9 feet wide, which had been erected in a back garden. The Magistrate said that he would allow that a greenhouse attached to a building was not exempt, but thought one which was detached, as in this case was exempt, and therefore dismissed the summons. District surveyors will not approve of this opinion, but from an occupier's point of view it is satisfactory. The small greenhouses which are found in the gardens of London houses are often so simple that they hardly deserve to be called structures; but, like fowl-houses, they have been brought within the terms of the Building Act. We know of a case where the flue in a small greenhouse, entirely constructed by an amateur, was treated by a surveyor as if it were a factory chimney, and many similar cases could be related.—(Architect.)

THE TEMPLE CHRYSANTHEMUMS.—It is scarcely necessary to explain that the plants referred to are those grown in the Inner and Middle Temple Gardens, London, near the Thames Embankment, the annual displays of which attract more visitors than do any other flower shows in the kingdom. This year the collections promise to be of more than usual excellence, judging by the healthy appearance of the plants and the fine buds that are swelling to expansion. The plants have just been arranged in their temporary glass structures, so as to form sloping banks of flowers about 90 feet long by 7 feet wide. The plants grown at the Inner Temple by Mr. Newton are dwarfer than usual, and certainly not less vigorous, and are beautifully arranged. In the Middle Temple Mr. Wright has grown his plants stronger, and we have not seen any to equal them in that garden. Both collections are in the highest degree creditable to the cultivators, and they admirably show what may be done with skill and attention in town gardens. These collections will be well worth a visit towards the end of the month, and the more so since all the new and the best of the old varieties are represented.

CHRYSANTHEMUM ORPHEE.—So strikingly beautiful is this Japanese variety, as seen in the last-named collection, that it worthily merits a special note of admiration. The flowers are large, with reflexing strap-shaped florets, which gracefully recurve at the tips. The colour is reddish-crimson, many of the florets suffused with orange. The richness of colour and distinctly early-flowering character of this variety, with the good habit of the plant, must render it an acquisition for conservatory decoration, and those who produce blooms equal to those grown by Mr. Wright will not be dissatisfied with them.

THE ESSEX FIELD CLUB CRYPTOGAMIC MEETING.—On Friday and Saturday last a very successful meeting of naturalists took place in Epping Forest, the occasion being the fifth annual Fungus Foray of the rapidly increasing Essex Field Club. There was a good attendance on the first day, but on Saturday over 100 assembled to explore the Forest depths, and were favoured by bright warm weather—a very agreeable contrast to that of the last year's gathering. A large number of species of Fungi were found, some being new to Britain or to the district, and an extensive exhibition of these was arranged in the ball-room attached to the Roebuck at Buckhurst Hill. Many of the members also brought dried collections of plants, and a number of microscopes were exhibited. After the tea Dr. Cooke referred to the discoveries of the two days, and Mr. Worthington G. Smith read a paper upon the politics of the Potato disease, which appears in another column.

METEOROLOGICAL OBSERVATIONS.—The following is a summary of meteorological observations at Hodsock Priory, Worksop, Notts, for August and September sent by Mr. J. Mallender:—"In August we had 205.6 hours of sunshine, or 46 per cent. of possible duration, a considerable increase on the last three years; there were two sunless days. Total rainfall, 2.09 inches, of which 0.84 fell on the 31st; rain fell on eight days. Mean temperature of month, 61.5°. Maximum on the 11th, 85.0°; minimum on the 5th, 40.4°. Maximum in the sun on the 8th, 134.8°; minimum on grass on the 26th, 30.4°. The warmest day was the 11th, the coldest day was the 26th. Mean temperature of air at 9 A.M., 63.4°. Mean temperature of soil 1 foot deep, 62.6°. Wind principally from S. and S.W.; average velocity, 5.3 miles per hour. This has been a splendid month for the harvest, which was practically finished by the end of the month. In September, total duration of sunshine, 117.1 hours, or



31 per cent. of possible duration; there were two sunless days. Total rainfall, 0.53 inch; the heaviest fall in twenty-four hours was on the 8th, when 0.24 inch fell. Rain fell on twelve days; the rainfall is less than half of any of the previous eight Septembers, and only one-sixth of what fell last year. Mean temperature of the month, 57.5°. Maximum on the 17th, 78.2°; minimum on the 30th, 32.3°. Maximum in sun on the 17th, 126.0°; minimum on grass on the 30th, 27.0°. The warmest day, 15th, mean temperature, 66.0°. Coldest day, the 30th, mean temperature, 46.0°. Mean temperature of air at 9 A.M., 57.4°. Mean temperature of soil 1 foot deep, 58.1°. The temperature, both mean and maximum, higher than in any of the previous eight years, except in 1880. The wind principally from westerly points, the average velocity 8.1 miles per hour; it exceeded 400 miles on one day."

### THE LONDON PARKS.

FOLLOWING the route previously pointed out, less than half an hour will convey the visitor from the Victoria Park station on the North London Railway to

#### FINSBURY PARK.

For many years this Park has taken a prominent place amongst those containing the best examples of bedding in the metropolitan district, and the present season has fully maintained its credit in this respect. Every care is taken to vary the display as much as possible and with no mean degree of success, for all the different styles of bedding are represented by effective and beautiful combinations of plants. The greatest attention is also paid to the general condition of the Park, the turf, borders, and paths being all thoroughly well kept, and in this respect alone Finsbury Park would bear comparison with the best places of public resort in London or elsewhere. The elevated position, somewhat out of the smoke range, also appears to give everything a fresh and pleasing appearance, which is exactly what is needed in an establishment of this kind. In regard to prospects, too, the Park surpasses all in London, and though one of the views is now being sadly marred by industrious builders, there still remains a pretty and extensive view to the north-east. Upon a fine open piece of lawn commanding this prospect a liberal allowance of comfortable seats are placed, a consideration which is duly appreciated by visitors. During the summer months there is always a refreshing breeze at this point, but in the winter it is too bleak for any except the most robust.

It has been previously remarked that the majority of the paths are composed of asphalt, and through this has to some extent a dull and ungarden-like appearance, there is ample compensation for such defects in its cleanliness, good wearing qualities, and the fact that a few minutes after a heavy rain the paths can be walked upon without discomfort. Some experiments are, however, being tried to brighten its colour, and one of these is likely to prove successful. It consists in applying a dressing of fine burnt gravel to the surface before the substance has dried, and by this means the dark colour and real nature of the paths are effectually concealed.

The principal display of bedding is in a much-frequented portion of the Park near the lake and refreshment house—an elevated position, but which has been judiciously sheltered by a surrounding band of shrubs. The space is of circular form, and the beds are cut in the turf, an equal number on each side of a broad walk which passes through the centre. At the back on each side are three large circular beds of *Cannas Annei* with yellow flowers, and *Hookeri* with dark red flowers, being the principal varieties, and having a very beautiful effect owing to their luxuriant growth and abundant blooms. These were edged with *Swanley Gem Ageratum* and *Omen Lobelia*, the former very compact and free, and the latter of the peculiar reddish-purple tint, so distinct from other forms of *Lobelia*. Next to these on one side are two beds filled with *Verbena venosa* and *Centaurea ragusina* mixed, with a margin of *Tropæolum Vesuvius*, while on the other side are four similar beds, except that *Cineraria candidissima* is employed in the place of the *Centaurea*. Next these are several angular beds, having as a centre *Pelargoniums Henry Jacoby*, extremely rich in colour, on one side, and *John Gibbons*, a most brilliant scarlet and effective variety, on the other. These are margined with rows of the variegated *Flower of Spring Pelargonium*, and *Lobelia Finsbury Park*, blue, dwarf, compact and floriferous. Then on each side are four very fine circular beds of *Coleus Verschaffeltii* edged with *Robert Fish Pelargonium* and *Echeverias*. The *Coleuses* were carefully planted and allowed to develop freely, and as a result formed a semi-globular bed even and well raised in the centre. Near the path are some oblong beds devoted to *Pelargoniums Princess Alexandra*, *Marshal MacMahon*, and *Lady Cullum*, margined with *Mesembryanthemum cordifolium* variegatum and *Echeverias*. Ten carpet beds have been tastefully designed, well planted, and neatly kept, consisting chiefly of *Leucophyton Browni* in the centre, *Alternanthera paronychioides major*, *Mesembryanthemum cordifolium* variegatum, and *Echeverias*. Several examples of pretty carpet beds are to be seen in other portions of the park, especially near the entrance by the Superintendent's house.

Subtropical bedding is not attempted on a large scale, but in several suitable positions, and especially in a sheltered walk leading to the principal flower garden already noted, there are numbers of small beds which during the summer have been very attractive. *Abutilon niveum aureum marmoratum* is a particular favourite, and the leaves having developed their rich golden marbling very well this season, they have

been much admired. *Eucalyptus globulus* is similarly largely planted, mostly small specimens 3 to 4 feet high, but their silvery glaucous colour afforded a pretty contrast with the golden *Abutilons*. *Acacia lophantha* and *Cannas* were the chief of the other subtropical plants, each bed having a suitable margin of variegated or Zonal *Pelargoniums*, the principal of the first-named being *Mont Blanc* and *Madame Salcray*, the latter having a somewhat glaucous appearance and a narrow white margin of the neat round leaves. Of general herbaceous plants a large number is grown, and many of the shrubbery and ribbon borders are most effectively planted. Single *Dahlias* have been, and still are, very bright and profuse in flowering, one long border of seedlings raised in the Park including some very striking and distinct shades of colour.

Preparations are now being made for the annual exhibition of *Chrysanthemums*, and the plants are in such fine and promising condition that they will, no doubt, maintain the fame which has been gained by previous shows.

#### REGENT'S PARK.

A few notes must suffice to dispose of the leading features in the Regent's Park bedding. It is unquestionably at all times the least satisfactory of the London parks, nor can the best possible management ever render it otherwise. The position is enclosed and too much sheltered, the whole of the flower garden being densely overshadowed by rows of trees, causing the plants to become drawn, weakly, and comparatively flowerless. Carpet bedding is the most suitable, but even in this the best or proper colouring cannot be obtained without a certain degree of exposure. The Superintendent, therefore, has many difficulties to contend with in more favoured positions are not known or cause no trouble, and in consequence it is most creditable that so good an effect is produced.

Several pretty carpet beds have been noteworthy this season, the favourite plants as a foundation or general ground carpet being *Mesembryanthemum cordifolium* and *Mentha Pulegium gibraltarium*, with panels or scrolls of *Alternantheras*. One of the best was an oval bed of *Mesembryanthemum* with neat scrolls of *A. aurea*, *A. paronychioides*, *A. amœna*, and *A. amabilis*, with a central *Chamæpeuce diacantha*, and a margin of *Echeverias*. Another bed of similar shape had a ground of *Mentha* with long scrolls of *A. amœna* and *A. amabilis*, but this was not so bright in appearance as the one previously mentioned. Around some of the bases were circles of *Herniaria glabra*, panels of *Echeverias* edged with *A. amœna*, and outside that further panels of *A. aurea* and *A. amabilis*. A circular carpet bed had *Mesembryanthemum* as the groundwork, with a centre cross of *A. amabilis*, ellipse-like panels of *A. amœna*, and irregular-shaped blocks of *A. paronychioides major*. This was pleasing, and the two most effective plants for the groundwork of carpet beds have undoubtedly been the *Mesembryanthemum* and the *Herniaria*. The *Mentha* has been employed too freely in many places, and the result is a corresponding dullness not at all consistent with the character of such beds.

The oblique parallel beds at Regent's Park are usually planted in the mixed style, and this season have been very attractive. The central blocks have been formed of *Iresine Lindenii*, *Abutilon marmoratum*, *Grevillea robusta*, and *Abutilon Boule de Neige*. Beneath these the beds have been covered with *Mentha*, *Mesembryanthemum*, or *Gazania*s, with a margin of pink or scarlet Zonal *Pelargoniums*. Mixed beds of *Grevilleas*, *Iresine Lindenii*, *Abutilons*, *Cannas*, and similar plants are also employed in a few positions.

### NATIONAL CHRYSANTHEMUM SOCIETY.

THE first meeting of the Floral Committee of the above Society was held on Thursday evening last at the Old Four Swans Hotel, Bishopsgate Street, City. Several very interesting exhibits of cut flowers of *Chrysanthemums* were staged, and the following awards were made:—A first-class certificate to Colonel J. R. Mallock of Pinewood, Bagshot, for Japanese *Chrysanthemum Margot*; a first-class certificate to Mr. Davis, Camberwell, for Japanese *Chrysanthemum Mademoiselle Lecroix*; and a vote of thanks to Mr. Davis for a collection of early-flowering *Chrysanthemums*, including several new and rare varieties.

This specially appointed Committee, consisting of the following gentlemen:—Messrs. Berry, Roehampton; Butcher, Barnet; Davis, Camberwell; Kemp, Clapton; Lowry, Mill Hill, N.W.; Payne, Stamford Hill; Townsend, Putney; and Springbet, Waltham; with E. Sanderson, Esq., and R. Ballantine, Esq., as Chairman and Vice-Chairman respectively, and Mr. Holmes as Hon. Secretary, will meet at the Old Four Swans, Bishopsgate Street, City, at seven o'clock on the evenings of October 16th and 30th, November 27th, and December 11th, specially to consider the merits of any new or rare varieties of *Chrysanthemums* that may be submitted.

### BEGONIA CARRIEREI.

SEVERAL improved forms have in the past two or three years been added to the list of winter-flowering *Begonias*, and one of the best and most recent of these is *B. Carrieri*, represented in the woodcut, fig. 56, for which we are indebted to Messrs. H. Cannell & Sons, Swanley. This plant is the result of a cross between the well-known useful *B. semperflorens* and the dwarfier *B. Schmidtii*, or *Smithii*, as it is termed in some gardens. It partakes of the habit of both parents, being dwarfier than *B. semperflorens* but taller than *B. Schmidtii*, the flowers being intermediate in size, pure white, and most abundantly produced. This floriferous character is a most valuable one, and at the season when it is in its best condition—namely, February and March, flowers are always



appreciated. It is quick in growth, and will succeed under the most ordinary treatment, being well adapted for small pots.

Messrs. Cannell & Sons were awarded a first-class certificate for the plant at the Royal Horticultural Society's Meeting, March 11th of this year.

#### TASTE IN FLOWER GARDENING.

Your correspondent "Sylvanus," having assumed the office of reviewer of the different styles of flower garden arrangement, under the above

to express an opinion thereon, whether adversely or otherwise. On this point, then, your correspondent has failed to make himself qualified to review impartially the merits of the different styles of flower garden decoration. He does not appear to have had much experience with hardy plant culture, or he would not have gone into such ecstasies over "ordinary bedding plants," and written so disparagingly about what he is pleased to term "wild gardening," in which are employed the "few hardy plants" he considers "worth growing." So far from there being only a "few hardy plants worth growing," we can state from experience that their name is legion, and, with a few exceptions, worthy of a place in every garden.



Fig. 56.—*BEGONIA CARRIERI*.

heading, in the Journal of the 21st ult., has written somewhat disparagingly about the value of hardy plants for decorating the flower garden. Agreeing on this point with your correspondent that now is the proper season to discuss this important subject, we need offer no apology for criticising his statements.

Your able critic commences his review of the subject in a most impartial manner, and leads his readers to expect a thorough analysis of the various styles of flower garden embellishment; but after a few sentences we have the subject treated from a one-sided view. Surely if anyone assumes to review such a comprehensive subject, the merits and demerits of each class of plants should be thoroughly appreciated before venturing

The love for hardy plant culture is rapidly spreading, and not without good reason, for of all classes of plants used in the adornment of the beds and borders of the flower garden, none will afford so much pleasure to the cultivators for the skill and expense bestowed on them. Hardy plants can be put to as good a purpose in the decoration of beds and borders as their more tender confidés. Let us for a moment inquire into their respective merits, and see how far your correspondent is justified in despising hardy plants for bedding purposes.

The ordinary bedding plants embrace a large number of exotics, which for nearly six months of the year have to be grown in heat, as well as others less tender in cool houses and pits. The propaga-



tion and growing of hundreds of thousands of these plants in early spring ready for the bedding season is a task involving great labour and a heavy expenditure. In many establishments, where such a vast amount of carpet and other geometrical bedding is carried out, the labour power necessary to accomplish all this is absorbed in the annual preparation of the plants, to the detriment of other work in the garden at such a period. Then comes the bedding-out of large borders in lines or masses of yellow, scarlet, white, blue, &c. and flower beds in some fanciful design. When the long and wide borders are thus filled you at once grasp whatever beauty there may chance to exist at the first glance, and ever afterwards this design becomes monotonous. It is, in fact, a mere repetition of the same colours which have been employed ever since ornamental bedding became fashionable, the only change year after year being the adoption of a different design, hence oftentimes the design itself becomes the real source of attraction for the time being. The same may be said of "carpet" bedding, though it is true some really tasteful designs are to be met with. Far better would it be if gardeners attempted less of this so-called artistic bedding, and employed more of hardy plants. The immense amount of labour as well as space employed for six months out of the twelve in preparing thousands of tender bedding plants for a few months' display could then be more profitably utilised. It is not our purpose to utter a sweeping condemnation of the modern so-called artistic bedding. We should indeed be sorry to see the many beautiful tender bedding plants dispensed with. What we justly complain of is, that they are employed to a greater extent than their merits justify, and to the improper exclusion of hardy plants. Ornamental bedding can only be enjoyed for a few months in summer. What becomes of the beds and borders after these tender plants are cleared away? They are left empty and bare, until the season for bedding comes round again. True, in a few instances a little spring bedding is practised. Let us sum up the advantages and disadvantages of this system before entering more fully upon the value of hardy plants. What are the advantages? Intricate designs of lines and masses of colour displayed for a little over three months in the year, beautiful to look upon at first, as all new designs in carpets and tapestry are for a time. The disadvantages, large amount of labour required in propagating and growing the plants, as well as space for housing them for nearly nine months, all involving a very heavy expenditure of money and labour. It can be plainly seen, then, that the advantages gained by this system are not commensurate with the heavy expenditure incurred for so short a time.

So much for tender bedding plants. Now a few words on behalf of the "few rubbishy plants" which your correspondent has written so disparagingly about. He scornfully alludes to the beds of Carnations and other old-fashioned bedding plants which our forefathers used to justly admire, as well as lumpy Dahlias, Hollyhocks, and other first-class hardy plants. No one possessing an intimate acquaintance with the value of hardy flowers would write so indiscriminately. Notwithstanding this, however, hardy plants will find their way into popular favour, and will hold their own against their tender opponents. We maintain if a border or bed is judiciously planted with a good selection of hardy plants it will continue full of interest all the year round, and more especially at a time of year when the borders occupied with tender plants in summer are bare. In the course of a few weeks tender bedding plants will be over, indeed the beds are already beginning to look unsightly. The hardy plant beds and borders, on the other hand, are in full beauty, and will continue so more or less all the year. The formal lines of tender bedding plants are not for a moment to be compared in beauty with a border containing groups of lovely single Dahlias, such as White Queen, Lutea grandiflora, and others, Rudbeckias, Gaillardias, Delphiniums, Polemoniums, Campanulas, Lobelia cardinalis, Pentstemons, Senecios, Helianthus, Echinaceas, Leucanthemums, Tiger Lilies, and a vast quantity of hardy annuals too numerous to mention here.

Again, in early spring what is of such interest to the real lover of gardening as a walk round his old-fashioned treasures daily, where some lovely plant or bulb is bursting into life with leaf and blossoms? What a contrast are beds and borders of hardy flowers, rockeries of alpine plants and noble trees, to the formal bedding-out, naturally tame and devoid of beauty. Compare the labour and expenditure necessary to maintain the two styles, and it will be found that hardy flowers will afford the greatest amount of enjoyment and pleasure in return for a considerably less outlay.

A great revolution is needed in flower garden decoration before this department becomes satisfactory. Both in formation and general arrangements many beds have the appearance of being turned out of one mould. We want more originality, more taste shown in our ideas of flower garden embellishments. We want no garish parterres, mighty terraces, and squirting fountains formed where Nature can dispense with these artificialities. We want an ideal garden—a real pleasure—where Nature and Art work harmoniously together; in fact a series of floral pictures, skilfully conceived and wrought, devoid of repetition. The smallest as well as the largest garden can thus be made beautiful. Every step should lead us to something original—be it a sequestered spot, with a background of noble trees and a foreground of choice hardy shrubs and flowers, or a tastefully and naturally arranged rockery of Ferns, alpine plants, and so on. Trees, shrubs, and hardy flowers should always be associated with each other. Margins of shrubberies or groups of shrubs are not complete unless terminating in a border of hardy flowers. We might go on citing instances of this kind, but it is not necessary to do so.

As regards the employment of colours in masses in the flower gardens, we agree with "Sylvanus" that if used at all it is best employed in simple instead of compound combinations. It is the improper association of

colour which has weakened the tender plant cause in the eyes of persons of taste. We advocate the employment of such plants as Zonal Pelargoniums, Calceolarias, Lobelias, &c., not for decorating a block of beds in the middle of a lawn, but for a better and more useful purpose—namely, planting in masses at the foot of some dull margin of the shrubberies or other object needing a bright mass to enliven it. Groups of Ageratums, Calceolarias, Lobelias, and others too, we employ similarly for enlivening dull portions of the rockwork. It would be interesting to know how far gardeners have entered into the subject of hardy plant culture, as it is a matter which, sooner or later, must engross their attention. But few, we hope, entertain similar ideas to those of your correspondent "Sylvanus." We trust he will condescend to give them a more impartial trial than he appears to have hitherto done, and instead of referring to them as "rubbish," admire their good qualities like—ADAM.

[Our correspondent has sent us flowers of thirty-six species and varieties of herbaceous plants which we believe are only a few of the many forms of flowers that render the garden in his charge so delightful. We think "Sylvanus" once sent us at the least an equal number of similar flowers, and we are under the impression that he has grown a very fine collection of hardy border flowers for several years.]

### SINGLE DAHLIAS.

As to the usefulness of single Dahlias, whether as decorative plants or grown to supply cut flowers, there can only be one opinion, though, as Mr. Murphy remarks, the flowers do not last long. Some of our finest flowers are only of short duration, but that is no reason why we should discard them. As decorative plants few double varieties equal and none surpass these single Dahlias. They are in nearly all shades and colours, from nearly black to white, and the free-flowering of most of them may be seen if we strip the plant of all flowers to-day, for in forty-eight hours it will be as gay as ever. It is not so with the doubles, for they take as many days as the singles take hours to perfect their flowers.

For room-decoration, the flowers placed in glasses with their own foliage or with fern are very beautiful; indeed, scarcely any other flowers at the present time can equal them. Nineteen ladies out of twenty would prefer them to vases of double flowers, and we must allow ladies in this matter to be the best judges.

How long single Dahlias will continue to maintain their popularity it would be difficult to guess, but judging from the splendid recruits that are being added to their ranks we may safely venture to think they will be favourite flowers for a very long time.—C. WARING.

### A LANCASHIRE ONION SHOW.

A CORRESPONDENT of the *Manchester City News* contributed the following notes on an Onion Show in the north:—

"I wandered on the road to Oldham a few days ago in a district surrounded by factories and railway and machine works, with their almost innumerable tall chimneys transmitting dense volumes of smoke, where the trees were leafless and vegetation at a standstill, excepting a few Sun-flowers and Ten-week Stocks, which apparently had had a severe struggle to throw forth their bloom. While regretting such an unpicturesque landscape, my eyes were diverted to a pole suspended from a window belonging to a well-known hostelry, on which were hanging copper kettles and Onions of enormous size. My curiosity being awakened, I was led to inquire of a passer-by the meaning of this quaint and curious display, quaint and curious because neither could be associated with Bacchus. My listener informed me it was "Th' Onion Show." I must confess I doubted the man's answer, and inquired if I had understood him correctly. He assured me it was so, and I was puzzled to understand how such things could possibly be—where houses are almost back to back, and the existing open space monopolised by brickworks, and where the air was filled with poisonous gases.

"After a little hesitation I made up my mind to pay a visit to the Onion Show. Entering the public-house, and making my desire known to one of the inmates, evidently a member of this Onion Growers' Society, I was ushered upstairs to a large room where the Onions were staged on a table. A strange scene presented itself to my sight, and one not easily forgotten. Seated at a table were three men, officers of the Society, making an entry of the members bringing produce for exhibition. There were scales and weights, the latter consisting of some of scarcely feather-weight. The sides of the room were covered with blankets, quilts, and sheets, which, with the copper kettles before mentioned and sundry money prizes, were intended for the winners. All the available seats were occupied by the exhibitors, who were in turn called upon to produce his Onions. A record was made of them, and they were then sent down to the Judges, of which there were five, whose duty it was to see that each Onion was sound—those unsound were stripped until they were found to be good—to cut them to their regulation size—namely, 6 inches in height, and to wash them free from all soil. The green-eyed monster reigns supreme, and the duty of the Judges is no sinecure. After passing the Judges, the Onions are brought to the staging room, numbers given to them, and not until the last lot is disposed of by the Judges do the weighers begin their labours. Excitement is then the order of the day, and "Jumbo," the largest Onion in the Show, is placed in the scale and draws over 2 lbs. It was a monster, but in all points—skin, colour, and symmetry—a perfect specimen of this invaluable culinary vegetable. The weighing still goes on and the climax at last is reached; the result is given out, "Jumbo" of course being awarded the premier prize, while others still of mammoth size secured minor prizes.



"The manner in which these Onions are cultivated is hardly ever divulged, and even if all the secrets were published and read, the unceasing care and attention requisite to produce these monsters would hardly be devoted to such an object. We all have our hobbies. The hobby of the colliers and mill-hands in the district described is growing Onions, and in no part of England is their cultivation carried on so successfully as here. Size and quality are what they have in view. 'They will melt in your mouth like marrow,' one of the enthusiasts informed me. Their gardens (?) in some cases are formed in the yards, and in all cases are of the most limited size. The quantity, therefore, is small, many growing no more than a dozen, and in these twelve plants from early January until late in September do these good folk keep watch with unceasing care. Each blade is tied to prevent it breaking, and cotton wool is packed in all places where rain can possibly find its way, in order to prevent rotting. They are continually being fed with manure in liquid form, and altogether the growers bestow as much attention upon them as the wives do on their children. Without exception they are good-natured, for as a well-known novelist describes those fond of gardening, 'The heart that is still open to the softening influences of man's first occupation, and takes delight in the pleasures of gardening, is never hardened.'

"Thus ended a most interesting visit to a Lancashire Onion Show, and although I have attended scores of horticultural shows in various parts of the country, I must confess I never saw such a sight before. I am at a loss to understand how this vegetable can be grown to such perfection (far finer than those imported from Portugal) in a district where the air is impregnated with gases and vapours from the numerous factory chimneys, almost entirely destructive to vegetable life, by using a certain amount of care and attention."

### CACTACEOUS PLANTS.

(Continued from page 313.)

RHIPSALIS, Gaertner.

(The Mistletoe Cactus).

ABOUT thirty species of plants are assigned to the genus *Rhipsalis* as now constituted, the majority being natives of Tropical America, though one is found in South Africa and the Mauritius. They are epiphytal in habit, like the two preceding genera, have much-branched, slender, round, angular, or flat leafless stems, small flowers from a quarter of an inch to an inch in diameter, with oblong spreading white or yellow petals and greenish sepals, and a small white globular berry-like fruit resembling the Mistletoe. Under these characters are now included what have been regarded as four distinct genera—namely, the true *Rhipsalis* (*Eurhipsalis*), *Lepismium*, *Hariota*, and *Pfeiffera*, the three last being little known in gardens. In fact, the whole of the species are interesting chiefly for their structure and distinctness from other *Cactææ*, as they are of little horticultural value.

They all need a light sandy soil, and being of drooping habit several of them appear best when suspended in pots or small baskets, and some of the slender species are pretty when grown in this manner. A warm dry position is required either in the stove or intermediate house, but the best known Mistletoe Cactus, *R. Cassytha*, can be grown under a glass case in a room, where it will produce its little white berries freely. The dwarf *R. mesembryanthemoides* and the yellow-flowered *R. salicornioides* can be grown in the same way.

*R. CASSYTHA*, Gaertner.—This is the true Mistletoe Cactus, and as such has been known for considerably over one hundred years, as it was introduced by Phillip Miller in 1758 from the West Indies, and some old writers have even mentioned the plant as a *Viscum*. In Miller's "Gardeners' Dictionary" (Martyn's edition) it is described under the title *Cactus pendulus*, a name which was also adopted by several other writers (Swartz, Brown, and Aiton), though a few have probably referred to the same plant under the name of *Cactus parasiticus*. The stems are cylindrical and pipe-like, producing their branches in whorls of three to six, upon the sides of which the small white flowers are produced, and are followed by the white semi-transparent berries that have gained the plant its popular name. These certainly bear a remarkable resemblance to Mistletoe berries in form, colour, and substance, and it appears to be one of those peculiar cases of mimicry that occur in certain families of plants, some of which have been so interestingly described by Mr. Leo H. Grindon in his "Echoes of Plant Life." It is strange, however, that though many plants assume a more or less striking resemblance to the *Cactææ* there are comparatively few of the latter that mimic other plants. Yet amongst the *Rhipsalises* we have four or five remarkable examples of this kind in addition to the one already noted; for instance, *R. salicornioides*, which, as its name implies, is much like our British Glasswort, *Salicornia herbacea*; *R. mesembryanthemoides*, which resembles some of the Figwort family; while several species, as *R. crispata*, *R. pachyptera*, and *R. Swartziana*, have flattened crenated leaf-like stems exactly of the *Phyllocactus* form. On the other side *Euphorbia mauritanica* has cylindrical pipe-like branches precisely similar to *Rhipsalis funalis*.

*R. MESEMBRYANTHEMOIDES*, Decandolle.—A dwarf much-branched plant with trailing stems, bearing small cylindrical branches, covered with tufts of fine hair. The flowers are about half an inch in diameter, with five or six greenish white semi-transparent tapering sepals and petals, and are borne singly near the apex of the short branchlets. The fruit is similar to that of *R. Cassytha*, but smaller. This plant was described by Haworth as a variety of *R. salicornioides*, from which, however, it is quite distinct, and it was first flowered by W. Christy, Esq., Clapham, in 1831.

*R. (HARIOTA) SALICORNIODES*, Haworth.—The division or genus *Hariota* was founded by Endlicher upon this species, the chief distinguishing characters relied upon being the position of the flowers—namely, at the points of the branches, instead of being produced at the sides as in the other

*Rhipsalises*, and in their colour being yellow instead of white. Though very distinct it is not considered sufficiently so to be separated as a genus, and is easily recognised as one of the Mistletoe Cactuses. It has slender stems alternately swollen and contracted like the Glasswort, as already noted. The flowers are orange yellow, wax-like, and shining, half an inch long, with twelve or more oblong sepals and petals which do not expand fully. A variety is grown at Kew named *stricta*, more upright than the species and almost fastigiate or bunched, while in some collections a form is grown named *ramosior*, which is rather more freely branched than the type.

*R. SARMENTACEA*, Otto.—In 1858 Mr. W. Christy sent this very distinct and pretty species to Kew, which was probably its first appearance in England, though it had been known on the Continent for some years. It has slender cylindrical stems, densely covered with small black spines not unlike *Cereus flagelliformis*. The flowers are large, over an inch in diameter, star-like in form, with eight petals, and creamy white in colour. It is a native of Buenos Ayres and South Brazil.

Many other species could be named, but the following are the most



Fig. 57.—1, *Rhipsalis salicornioides*; 2, *R. penduliflora*; 3, *R. Cassytha*.

remarkable:—*R. grandiflorus*, a strong-growing form introduced to Kew by Bowie and Allan Cunningham in 1816, has greenish white flowers more than 1 inch across. *R. funalis* has cylindrical pipe-like stems a quarter inch in diameter, long, and much-branched. *R. paradoxa* is a strange Brazilian plant, with long pendulous three-angled branches, jointed, the space between the joints being 1 to 2 inches long, and the stem is half twisted at each juncture, giving a most peculiar appearance to the plant. A specimen at Kew is trained up the roof of the succulent house, and its branches hang in a dense cluster 2 feet or more in length. *R. penduliflora* laxa is a slender drooping plant, very graceful, and suitable for a suspended pot. *R. pentaptera* has trailing five-angled stems nearly half inch in diameter, very distinct from its relatives. The principal flattened and *Phyllocactus*-like species are—*R. crispata*, *R. rhombea*, *R. pachyptera*, and *R. Swartziana*.

*LEPISMIUM*, Endlicher.—The few species arranged under this head are chiefly botanical curiosities, and are denoted by slender triangular or quadrangular stems, with flowers produced from the sides of the branches in fascicles of five spines, the petals being erect, and not spreading as in *Rhipsalis*. *L. myosurus* [also known as *Cereus tenuispinus* and *Cactus tenuis*] is a Brazilian plant with small weak stems, which reach the length of several feet, and produce yellowish flowers 1 to 1½ inch across. A pretty graceful variety named *Knighti* has pretty reddish-tinted stems. *L. commune* [*Cereus squamulosus* and *C. elegans*] also from Brazil, has triangular jointed stems half to 2 inches in diameter and 1 to 2 feet long, the flowers small, white, tinted with purple.

*PFEIFFERA*, Salm-Dyck.—This was founded as a genus to honour a celebrated German botanist, Pfeiffer, who has written several works upon *Cactææ*, and whose name is mentioned as an authority for the titles of many



of the plants noted in the preceding genera. It only contains one species *P. cereiformis*, a Mexican plant, somewhat resembling a *Cereus* with triangular or quadrangular stems, and white or rose-tinted flowers. The fruits are globular, half inch in diameter, semi-transparent, and of a violet hue. It is interesting botanically, but is seldom seen in collections.—L. CASTLE.

### ORCHARD HOUSES.

I AM regularly taking in the *Journal of Horticulture*, and I cut out of the issue of September 25th Mr. Abbey's letter on orchard houses, sending it to my brother. Many years since he was induced, at my instigation, to have a large house built, which he still maintains, more for his amusement than profit, and I am doing the same here, although I am obliged to subscribe to his criticisms. It seemed to me that his letter in reply to me, and in reference to the whole subject, was worthy of a place in your columns, and therefore I enclose it herewith.—J. T. H.

"I have to thank you for sending me that interesting extract from the *Journal of Horticulture*. You and I cannot wonder at the fact implied in Mr. G. Abbey's letter that orchard houses soon, like croquet, went out of fashion; that the mania, unlike that of canine rabies, required none of M. Pasteur's vaccination for a conquest over a hitherto invincible disease, but quickly died out of itself. A bubble will burst. In my enthusiastic days I have written to that same *Journal* panegyrics on orchard house culture, but like a lady, I elaim the privilege of altering my mind, or at least of modifying my early impressions in some degree. I have no doubt that the original brochures from the pens of such men as Rivers and Bréhaud were unconsciously dipped in ink of a too rubrical hue, misleading amateurs to form sanguine expectations hardly justified by the event. They only regarded the bubble's iridescent colours before its collapse, the blaze of the meteor while it lasted, and so took optimist views, and far be it from me to take pessimist views. Having had abundance of fruit from July until now I have no reason to go into the opposite extreme, only I know that without the patience and perseverance, which are not granted to all amateurs, failure will indubitably ensue. Have you not remarked that gardeners, as a rule, hate orchard houses? And why? Because they are alive to the trouble they involve all the year round, which they consider incommensurate with its results. You have left the management of your orchard house pretty much to your man Friday, and he, being as I know a painstaking and intelligent man, has succeeded on the whole better than most; and yet he, if admitted to the franchise, which he deserves, would, I have not the least doubt, register his vote against orchard houses and all toy trees. He would do so, as counting the cost of success, not so much as regards money, for that comes out of your pocket, but as regards the value of his own labour, and the unremitting care occasioned by a whole host of drawbacks. I, on the other hand, have kept the management of my orchard house entirely in my own hands; and although I am, I believe, looked upon in these parts as a successful cultivator, yet I do not scruple to say that after full twenty years' experience, apart from the personal pleasure derived from the pastime, the game is not worth the candle, and that to any friend of mine intending to invest in this enterprise, I should be inclined to give the advice so emphatically given to a man about to marry—Don't! at least think twice about it; profit by my experience who know how many pitfalls beset your unwary steps, and have threaded myself some of the avenues which lead to a fiasco.

"The pros are outnumbered by the cons, for first of all the soil you select may prove of the wrong kind; you may, if you don't mind, ram it into the pot too hard, and so fill it with a substance impervious to moisture, in which no tree can flourish; or you may fall into the same error by operating on the soil when it is wet, or else you may not press the soil in hard enough. In your selection, too, of trees at the nursery, without the advice of a well-experienced friend, you may lay up in store for yourself a fund of future disappointment, either getting trees infested with insects, or late varieties, whose Clingstone fruits may be as large, yes, and as hard too, as Turnips; or you may get mildewed trees or misshapen oddities, or some which very likely will never grow freely; no, not even with the most loving care. Pruning and summer pinching, according to the directions given in books of authority, may be *secundum artem*, but the amateur who follows those directions is soon made aware of the ugly fact that he is committed to a persistent struggle against Nature, and the question occurs, Can that be right? Nature generally wins in the long run. It is best to follow Nature as a guide.

"The best produce I have ever seen, both as regards the size and quality of the fruit, was this year in an orchard house in Herts, wherein the wall trees were trained in the old way (not cordons, I mean) and the others having their roots outside, were trained on a table sufficiently low to allow the light getting to

the trees on the back wall. There were not many trees, but those that were there were full grown, and covered a good deal of space. Like Britons, they seemed to like liberty, to have free course, and not to be perpetually pinched in, which to sensitive plants, I should think, must be the reverse of pleasant. And oh! for the warfare entomological against aphides appearing with the blossoms and first green leaves. Would Lord B. have taxed "baccy" to such an extent had he known the amount of fumigation necessary for the elimination of the fly; the battle against thrips which eat the shoot's tender tips; against ants which ensconce themselves in your very pots, which love to inject their acid venom into your punctured cuticle, and not content with personal violence, add insult to injury by the careful redistribution of aphidian seats, bearing their milch kine from tree to tree, and thereby helping to propagate those sweet morsels *ad infinitum*, and which also make a raid on your fruits when ripe, and spoil them for your own eating or for exhibition purposes; against scale and mealy bug, which extract the vital fluid of your trees, spoil the bark, and blacken and foul the fruit; against red spider, that tiny but almost ineradicable pest, destructive of the flavour of your fruit, weaving entangling webs among your branches, populating the under surface of your leaves, and stripping off your withered foliage before Midsummer day has dawned; and warfare finally against earwigs, wasps, and bluebottle flies? The battle of Tel-el-Kebir was nothing to it.

"Then in a large house (130 feet by 14) replete with pots, only 'the servants who draw the water' know the number of gallons requisite each day for either watering or syringing the trees, and the labour those necessary operations involve. And one more grumble and I have done. Should the master chance to leave his house for a few weeks for a well-earned holiday, what will he find on his return? All things gone to the bad, damage done not to be remedied; ruin rife everywhere. 'I thinks as 'ow this 'ere tree must have been struck by the lightning,' says my man George to me when I had returned from only a three-weeks absence. I need hardly say what was really the matter with it. I had left my trees very free from 'rubra cura,' but the ventilating shutter had become closed where this tree was, and its top was as much injured by red spider as if it had been stricken by lightning. I am partial to orchard house culture myself. It has been to me a great resource, and I like the lounge the spacious glass structure affords in wet and cold weather. I would not give up my occupation while I have strength to carry it on; but I would not go so far as to make my own proclivity an argument for inducing a friend to undertake the same care, my own candid opinion being that the nurserymen who sell the infant trees are the greatest gainers, that the books of growers of nursling trees must be regarded as advertisements of their profitable business; honest men they are, no doubt, but it is 'human' to know on which side one's bread is buttered. The best people in the world are like bowls, following the bias of self-interest. Demetrius, perchance, was a sincere devotee of the great goddess Diana, but did he not let the cat out of the bag when he said, 'Sirs, ye know that by this craft we have our wealth?'—H. W. H.

### A DAY AT BEXLEY HEATH AND SWANLEY.

#### MR. LADDS' ESTABLISHMENTS.

I STATED last week that Mr. Ladds' enterprise does not end at Bexley Heath, but that he has another large establishment at Dartford Heath. Here we found a large area of span-roofed houses of similar dimensions to those at Bexley Heath, devoted principally to Tomato-growing. Four, however, of these houses were planted with fine healthy trees of Royal George Peach. Each house contains about twenty-four trees, and these, I was informed, had borne about four dozen fruits each, or something like 400 dozen in the aggregate. The trees appeared to be grown on the extension system, as they bore scarcely any evidence of having been manipulated with the pruning knife. An immense quantity of Tomatoes are grown out of doors here, and they were, despite the drought, carrying a heavy crop of fruit. The success of the operations at Bexley Heath and Dartford Heath has induced Mr. Ladds to start another establishment, which he intends shall be of still greater magnitude.

This last venture is at Swanley, adjoining the Swanley Junction station of the London, Chatham, and Dover Railway, and the far-famed "Home of Flowers." Mr. Ladds only acquired the site towards the close of last year, but with his characteristic energy a block of fifteen houses, each 200 feet by 17 feet, and a large span-roof house 686 feet long by 25 feet wide, was soon built and occupied. The whole of these houses are intended for vineries. The situation is high, and the subsoil a sandy gravel, thus affording plenty of drainage for the Vine borders. A heavy dressing of stable manure was well trenched into the soil, and the young Vines planted therein early in the present year. In order to make the most profitable use of these houses until the Vines are ready for fruiting, the borders are planted with Tomatoes grown and trained similarly to those at Bexley Heath. The large house had the appearance of a forest



of Tomatoes. Mr. Ladds has adopted rather novel purlines for supporting the roofs of his houses here. The purlines consist of inch iron pipes, and these are made to serve a double purpose—viz., support the roof and be the means of conveying the water for irrigation. Valves occur every few feet for the purpose of attaching a hose for watering. Strawberries will be forced here this coming season to the extent of 100,000 plants. On the date of our visit preparations were being made for building several more blocks of houses for Grape-growing, and it is proposed to extend the glass erections annually until the whole of the field, some acres in extent, is covered. A siding will be made from the adjoining railway into the head-quarters for the convenience of receiving manure, fuel, and transporting the produce to the metropolis. Thus ends our inspection of Mr. Ladds' gigantic fruit and flower-forcing establishments, a task of much pleasure and a source of great interest, affording us an insight into the manner in which the London markets are supplied with garden produce.

#### MESSRS. CANNELL & SONS' ESTABLISHMENT.

Having an hour to spare, and being so close to the Home of Flowers, we decided to pay Messrs. Cannell a visit. Though our visit was a hurried one we made the most of our time, and were enabled to get a glimpse of the principal novelties to be seen just now. The Pelargonium houses are always attractive with the many sterling novelties in bloom. Particularly noticeable among the singles were Ferdinand Kauffer, a grand deep magenta-purple; Edith Little, one of the oculated type, a fine variety; Omphale, a lovely salmon, with large flowers; Madame Colson, another salmon, producing immense trusses; Eurydice, a good dwarf purple-pink, very showy; Kate Greenaway, a very fine pink, with well-formed flowers; Edith George, another striking pink variety, with large trusses; and Snowball, a charming pure white. The preceding are the most striking of the round-flowered section. In the Nosegay section *Aurore Boreale* may be described as a great step in advance of other varieties in size of foliage and flower, and is destined to become the parent of a race of very large Zonals; flowers light scarlet, tinged with salmon. Among others worthy of note in this section are *Ida Walter*, a rich crimson; *Mrs. Lord*, intense deep crimson; *Nelly Thomas*, bright scarlet; and *Dr. Orton*, a rich dark crimson, these being distinguishable on account of robust habit and floriferousness. A capital salmon bedding variety is to be found in *Bayswater Burley*. Amongst doubles *Paul Charbonnier*, a bright orange-scarlet, and *Ludwig Ferebe*, rich scarlet, are very fine, as also are *Paul de St. Victor*, a beautiful pink, with large flowers; *Clara Pfitzer*, rose-pink, and a good free-flowering dwarf variety; *The Lord Mayor*, pink, suffused with purple, also dwarf; *Althæa*, rich cerise-scarlet; *Général Campeon*, deep crimson, dwarf habit; *Fritz Lucas*, a soft magenta, with salmon centre, very fine; *Edouard Jiponlon*, a very free-flowering salmon of dwarf habit; *La Cygne*, a very fine new double white; and *Madame Léon Dalloy*, another charming white. Ivy-leaved varieties, too, are to be seen in excellent variety, especially the doubles. *Abel Carrière* is a beautiful soft magenta; *La Rosière*, rose-coloured; and *Jeanne d'Arc* and *Comte Horace de Choiseul* are also fine varieties.

Begonias next claim attention. Messrs. Cannell seem determined not to be behind in the race in improving this popular class of plants. A very fine collection is now being got together, and next year the floral world will be surprised with some of the improvements effected in colour and habit. Some of Messrs. Cannell's new single varieties are grand, notably *King of Kings*, one of the highest-coloured flowers that has appeared, an intense crimson, darker than *Zonal Pelargonium Henry Jacoby*; *Total Eclipse*, one of the most vivid crimsons we have seen; *Rosea magnifica*, rosy pink, very fine; *City of London*, crimson, flowers measuring 6 inches across; *Mr. Baines*, broad petals of great substance, intense glowing scarlet; *City of Vienna*, bright red, with an immense flower of fine shape, free; *Mr. Airde*, deep glowing crimson, and large bold flowers. Among other varieties of last year's introduction are *Paul Masurel*, orange-scarlet; *Royal Standard*, a deep crimson, capital for baskets; *Wonder*, a deep yellow-buff; *Rêve d'Or*, a very fine yellow, of dwarf habit; *Mrs. Coppin*, a beautiful clear yellow, one of the finest of its class; *Salmonia Magna*, bright salmon; *Mlle. Personneau*, a fine blush; *Albert Cronan* and *Le Géant*, charming reds; and *Alba floribunda*, a fine white, of vigorous and free-flowering habit. Some of the doubles, too, are very fine, especially the new varieties. *Ruhm Von Erfurt*, a splendid scarlet variety; *Virginalis*, a splendid white; and *Madame Arnault*, deep blush-pink, with round flowers, very pretty and distinct. The older varieties are very fine, notably *Rosamonde*, a beautiful rosy-pink, producing immense flowers; *Blanche Jeanpierre*, pure white; *Le Grand Citoyen*, a lovely cerise; and *Duchesse de Galliera*, a large-flowered scarlet of free and vigorous habit.

Gloxinias are specially attractive, hundreds of all the finest types were staged side by side for seed-saving purposes. Among other novelties in the houses worthy of note is the new double *Abutilon Thompsoni plena*. This is a great acquisition, as the flower is perfectly double. It remains now for some skilful hybridist to secure a double white form, a feat which will perhaps soon be accomplished.

New Fuchsias are represented in such fine varieties as *Dr. Sankey*, a splendid dark variety of robust habit, with long pendulous flowers; and *Mr. King*, a rich crimson-scarlet of fine habit. *Mrs. Rundle* is also a capital variety. *Magnum Bonum* and *Enoch Arden* among dark varieties are very fine. *Le Cygne* and *Madame Jules Chrétien*, whites, are good among doubles.

*Heliotrope Swanley Giant* is very effective by its rosy heads of blooms nearly a foot in diameter. The Show *Verbenas* were very

charming, nearly every shade of colour being represented. It is a pity those showy plants are not more grown than they are. As seen at Swanley they are most effective pot plants.

The outdoor department teems with all sorts of good things, but time would not permit us to give these more than a cursory glance. Roses are grown in large quantities, and the standards carrying a fine lot of bloom. Dahlias of all kinds find a generous home at Swanley. The collection of double and single varieties embraces nearly or all of the best kinds in cultivation. Hardy perennials, too, in choice variety, including Phloxes, Pentstemons, Hollyhocks, and many others which are grown in quantity. To particularise in detail the many novelties to be found here would require well-nigh a whole number of the Journal; hence only a few of the most striking are described in these notes. All who have failed to give the Home of Flowers a call should not defer doing so any longer, for they may depend upon a hearty welcome from Mr. Cannell, and a rich floral treat will sure to be in store for them. It is evening, and in a long ride across country we reflect on the pleasant day we spent in inspecting Messrs. Ladds' and Cannell's interesting establishments.—T. W. S.

#### TUBEROUS BEGONIAS.

I THINK it a pity that these delightful flowers are not more largely grown, and I beg to send you my experience with a view to show that they are not nearly so difficult to grow as some seem to imagine.

I procured a packet of seed from Messrs. Carter & Co. early in the year, and in February I sowed the seed in an early vinery. It germinated very well, and as soon as the plants were large enough I pricked them out in thumb pots, using as compost two parts turfy loam to one part of leaf soil, and added as much sand as would keep it open. I then placed them in heat for a short time, and afterwards in a cool greenhouse. As soon as they had fairly rooted I transferred them to 5-inch pots, employing the same compost as before, with the addition of a small sprinkling of Clay's fertiliser. They were then returned to the greenhouse, kept close for a few days, and after that were fully exposed to the light and air; care being taken that they should never suffer from insufficient water. They grew splendidly, forming bushy plants about a foot in diameter and about the same height. They began to bloom about the beginning of August, and have been in flower ever since. They are still in good condition and are likely to be for some time, thus proving very useful for conservatory decoration at this time of the year. The flowers were generally large and of good substance. The colours varied from the deepest yellow to the palest primrose, and from pure white to the deepest crimson. I hope these few lines may encourage others to grow such charming plants.—J. H.

[The flowers received are very fine—excellent in form, diversified in colour, and stout in substance; they represent good varieties well cultivated.]

#### CRYSTAL PALACE HARDY FRUIT SHOW.

OCTOBER 7TH TO 11TH.

THOUGH only a small schedule of a dozen classes was provided for this Exhibition, the sixth held at the Crystal Palace during the present season, the prizes were of such a liberal character that a good number of competitors were induced to send their produce, and an excellent display is the result. The principal prizes ranged from £10 to £3, the first-mentioned sum being offered in three classes—namely, for the best collection of Apples, Pears, and agricultural produce, while in other classes the prizes were from £2 to 10s. Apples are very largely represented, and form the greater portion of the Exhibition; Pears are also for the season well represented, though less numerously than the Apples. A very great and novel attraction are the collections of Pumpkins and Gourds, for it is doubtful if so large a number of distinct and handsome-coloured varieties have ever been shown in London before. The Nova Scotian Apples are similarly admired, owing to their bright and varied colours, the vegetables and miscellaneous collection of fruits possessing more than ordinary interest. The exhibits are arranged upon tables in the transept near the orchestra, the spaces between the collections in the centre of the tables being suitably filled with graceful Palms, Ferns, and other fine-foliage plants. One table in particular—namely, that upon which the Gourds are arranged, is exceedingly pretty, the centre being occupied by Palms, between which are smaller plants of Messrs. Laing & Co.'s Tuberous Begonias, edged with *Adiantums* on both sides. The effect of this arrangement, in contrast with the brightly or strangely coloured Gourds, is highly satisfactory.

#### APPLES.

About 1250 dishes of Apples are exhibited, including those not in competition, and it may be readily imagined that so large a number constitutes an important feature in the Show. It has been a cause of surprise to many persons that Apples should be exhibited so well this season when the crop was in most districts a failure; but some parts of Kent and Sussex appear to have escaped the general bad fortune, and in other cases the size of the individual fruits is in a great measure due to the smallness of the crop. As at Kensington recently the samples from Mr. Haycock, gardener to Roger Leigh, Esq., Barham Court, Maidstone, were marvellously fine, and attracted the admiration of visitors generally, but especially of horticulturists, who could fully appreciate their merits. Any gardener would have good reason to be proud of such a collection as that which has gained Mr. Haycock the premier prize in the open class, for apart altogether from advantages of position, considerable cultural skill is required to produce such handsome fruits. The prizes were offered for the best collection of kitchen and dessert Apples, six fruits in each dish, but the number of varieties was not stipulated, the object being to obtain



a large representative display. Mr. Haycock contributed 100 dishes of nearly as many varieties, the fruits even, clean, well coloured, and in the majority of cases of great size. Amongst so many that are good it is difficult to make a selection, but the following are some of the best:—Calville Malingre, New Hawthornden, Worcester Pearmain, Bess Pool, Reinette Grise, King of the Pippins, Golden Spire, Washington, Beauty of Kent, Brabant Bellefleur, very fine; Tower of Glamis, Cornish Aromatic, Bedfordshire Foundling, Ribston Pippin, Lord Derby, Melon Apple, Summer Golden Pippin, Belle Josephine, Peasgood's Nonesuch, Warner's King, Lord Suffield, Mère de Ménage, Reinette du Canada, Cox's Pomona, Fearn's Pippin, Dumelow's Seedling, Ashmead's Kernel, Manks Codlin, and Ecklinville. Following closely for the second place Messrs. T. Rivers & Son, Sawbridgeworth, have 110 dishes, the fruits not quite so large as the Maidstone samples, but even and good. Very notable were Lord Derby, Lady Henniker, Melon Apple, Emperor Alexander, Bailey's Sweet, Bedfordshire Foundling, Sops in Wine, Stirling Castle, Nelson Codlin, Mère de Ménage, Cellini, Dumelow's Seedling, Winter Pearmain, Blenheim Pippin, Warner's King, King of Tomkins County, King of the Pippins, Fearn's Pippin, Old Winter Russet, Cockle Pippin, and the little known Amasia and Pigeonnet. Mr. H. Waterman, gardener to H. A. Brassey, Esq., M.P., Preston Hall, Aylesford, Kent, is third with sixty dishes, including good fruits of most of the leading culinary varieties; Mr. J. H. Goodacre, Elvaston Castle Gardens, Derby, being fourth with ninety-nine dishes, somewhat irregular and smaller fruits than in the preceding.

In the amateurs' class for twenty-four dishes of kitchen and dessert Apples, distinct varieties, Mr. Haycock is again the most successful of the six exhibitors, winning the premier prize with magnificent specimens of the following:—Reinette du Canada, Cox's Orange, Reinette Flandre, Reinette du Caux, Margil, Mère de Ménage, Golden Knob, Peasgood's Nonesuch, King of the Pippins, Belle du Bois, Annie Elizabeth, Cornish Aromatic, Stone's Apple, Ribston Pippin, White Nonpareil, Lord Derby, Lord Suffield, Mother Apple, Golden Noble, Dumelow's Seedling, Blenheim Pippin, Claygate Pearmain, and Reinette Van Mons. Mr. S. Ford, gardener to W. E. Hubbard, Esq., Leonardslee, Horsham, has secured the second position with a close even collection, very few points behind the preceding, and Mr. H. Waterman is third with nearly equally good fruits. For twelve dishes of Apples Mr. Goldsmith, The Gardens, Hollenden, Tonbridge, was adjudged first honours, his fruits being distinguished by good size and handsome appearance, equal to some of the best of those from Barham Court. The varieties are Blenheim Pippin, Golden Noble, Colonel Vaughan, Hall Door, Ribston Pippin, King of the Pippins, Warner's King, Reinette du Canada, Lord Derby, Beauty of Kent, Fearn's Pippin, and Cox's Orange. Mr. C. Langley, Crabble House, Dover, and Mr. J. Sharpe, gardener to F. Hutchett, Esq., Parkfield, Grove Park, are second and third respectively with praiseworthy collections.

*Nova Scotian Apples.*—Quite recently it was announced in our advertisement column that an additional class had been provided for American and Nova Scotian Apples, Messrs. Northard & Co., 20, Tooley Street, London, having offered a cup for the best collection, and to this the Crystal Palace Company added £3 as first prize, £5 as a second, and £2 as the third prize. About eight collections were entered, and by a subsequent arrangement these were placed in two classes—namely, for large and small collections. The majority of these Apples were distinguished by their bright clear colours, and in many cases by their great size, but the really fine fruits are confined to comparatively few varieties, amongst which were Emperor Alexander, Gloria Mundi, and Chebucto Beauty, the richest coloured being Red Astrachan, Williams' Favourite, a deep uniform red; Red Doctor, and Five o'Clock Tea, very much like Hoary Morning. The cup and first prize in the large collection class was awarded to Dr. H. O. McLatchy, Wolfville, Nova Scotia, who had ninety dishes of finely coloured Apples of moderate size, but more even and clean than the others. The best varieties are Red Doctor, Gravenstein, Five o'Clock Tea, Twenty-Ounce Pippin, Gloria Mundi, Snow Apple, Pound Sweet, Emperor Alexander, Summer Bellefleur, Williams' Favourite, Cat's Head, King of Tomkins County, and Red Astrachan. The Fruit Growers' Association have 100 dishes, but are placed second owing to their fruits being rather less regular and not quite so highly coloured as Dr. McLatchy's. They included, however, good examples of King of Tomkins County, White Astrachan, Evangeline, Golden Russet, Gravenstein, Emperor Alexander, Dutch Codlin, Red Astrachan, Duchess of Oldenburgh, Maiden's Blush, and Marquis of Lorne. The third prize was awarded to Mr. H. O. Duncanson, Falmouth, Hants, Nova Scotia, for ninety dishes, most of the fruits being of fair quality. In the small collection class Mr. R. W. Starr, Starr's Point, Port Williams, Nova Scotia, is first with sixty dishes, the Apples being of moderate size, but highly coloured. Messrs. E. & O. Chase, Cornwallis, Nova Scotia, are second with twelve dishes of much larger samples, Emperor Alexander being especially fine, and Mr. E. E. Dickie is third with the same number of dishes, the fruits being nearly as well coloured, Chebucto Beauty being particularly notable for its rich red hue.

*Collections not in Competition.*—Two large and interesting collections are contributed by Messrs. J. Veitch & Sons, Chelsea, and Messrs. J. Cheal and Sons, Crawley, both of which include a number of useful and well-proved varieties. From Chelsea 100 dishes are sent, the majority of the fruits being good examples of their respective varieties, which include all the most reliable of these in general cultivation. Worthy of special attention are the following:—Red German, a handsome variety, rather above medium size, solid, dark red, with a few white dots, and said to be very prolific and of excellent quality for cooking; The Sandringham is represented by fine heavy fruits, well maintaining the good opinion already formed of it; Webb's Kitchen Russet, an excellent culinary Apple; and Reine des Beautés, a good late keeping variety. Of other better known varieties the best are Cox's Orange, Worcester Pearmain, Tom Putt, Warner's King, Peck's Pleasant, said to be equal to Newtown Pippin; Fearn's, Ribston, and Blenheim Pippins, Mère de Ménage, Yorkshire Greening, Cellini, and Lord Suffield. The Crawley collection includes ninety dishes, principally Apples, but with a few Pears. Both are good, but the former are especially fine, clear, and well coloured. All the leading varieties are shown, and handsome fruits of the following are observable:—Loddington, Cellini, Catshead, Fearn's Pippin, Minchall Crab, Yorkshire Greening, Warner's King, Golden Noble, Egremont Russet, Emperor Alexander, Forge Apple, Bess Pool, Gloria Mundi, Alfriston, Colonel Vaughan, Yellow Ingestrie, Duchess of Gloucester,

and Worcester Pearmain. The Pears comprise fine fruits of Beurré Clairgeau, Beurre Diel, Duchesse d'Angoulême, Uvedale's St. Germain, Grosse Calebasse, and Pitmaston Duchess.

#### PEARS.

Similar classes were provided for these as for the Apples, but the entries are not so numerous, and the exhibits are, of course, wanting in colour and attractiveness compared with the Apples. In a few cases some very handsomely ripened fruits are staged, and some of the best of these are the examples of Pitmaston Duchess shown (not for competition) by Mr. James Butler, Orchard Lane Gardens, Sittingbourne. These are large, handsome, finely ripened fruits, chiefly from diagonal cordon trees about twelve years old, but a few were from standards. In the best collection of Pears class Mr. Haycock, following up his success in other classes, has secured the leading position in this with seventy-five dishes of large specimens, the finest being of the following varieties:—Beurré Diel, Gansel's Bergamot, Conseiller du Cour, Ne Plus Meuris, General Todleben, Brown Beurré, Nouveau Poiteau, Triomphe de Jodoigne, Easter Beurré, Louise Bonne of Jersey, Vicar of Winkfield, Marie Benoist, Pitmaston Duchess, Beurré Superfin, Duchesse d'Angoulême, Reine des Tardives, Catillac, Uvedale's St. Germain, Beurré Hardy, Fondante de Cuerné, Zéphirin Grégoire, Beurré Bachelier, Beurré de Capiaumont very handsome, Doyenné du Comice, Glou Morceau, Passe Crasanne, Baronne de Mello, and Williams' Victoria. Mr. Goldsmith has the second-prize collection of sixty dishes, his samples being not quite so large as Mr. Haycock's, but all are good, and some are very handsome. Mr. Waterman also has several fine dishes in the third lot; those from Messrs. T. Rivers & Son, who were fourth, being smaller. Four competitors have entered the amateurs' class for twelve dishes of Pears, and Mr. Haycock has secured the first prize, that being the fourth awarded to him in the Exhibition. His fruits are similar to those in the preceding class, comprising Conseiller du Cour, Passe Crasanne, Durondeau, Beurré Hardy, Nouveau Poiteau, Pitmaston Duchess, Easter Beurré, Louise Bonne of Jersey, Duchesse d'Angoulême, Doyenné du Comice, and Beurré Superfin. Mr. Goldsmith and Mr. W. Dance, gardener to Col. Lowe, Gosfield House, Halstead, are the other prizetakers with slightly smaller fruits.

#### PUMPKINS AND GOURDS.

The strangely formed and often richly coloured or handsomely streaked varieties of the Gourd family are not often seen at exhibitions, and the display of these fruits at the Palace is therefore especially interesting. Apart from those in competition a large collection is exhibited from the Royal Horticultural Society's Gardens, Chiswick, which comprises an extraordinary number of beautiful forms, and all under names. These vary in size and form from the red and yellow Mammoth, 60 to 80 lbs. each, to the miniature Coloquinte, only 2 or 3 inches long, and in colour from the darkest green, almost black, to yellow, orange, and dark red, including also many strange diversities of shape, upon which appropriate titles are bestowed. In the two classes for collections of Pumpkins and Gourds and for Ornamental Gourds the exhibits are good, but their great defect is that the varieties are unnamed. In the first-named class Mr. C. Osman, South Metropolitan Schools, Sutton, Surrey, took the lead, followed by Mr. J. Sturges, Moat House, Chipstead, Redhill, the chief difference between the two being that the former has the greatest number of fruits. With Ornamental Gourds Mr. T. Glen, gardener to Mrs. Montefiore, Worth Park, Crawley, was awarded premier honours for the only collection, which comprise some exceedingly handsome and brilliantly coloured fruits. The heaviest Gourd is shown by Mr. Sturges and weighs 80 lbs.; the second and third from Messrs. J. Squire, 37, Weston Hill, Upper Norwood; and Mr. J. Sharpe, gardener to F. Hatchett, Esq., Parkfield, Grove Park, Lee, being but little inferior in weight, Mr. Osman having an extra prize for one weighing 58 lbs.

#### VEGETABLES.

Several classes were devoted to vegetables, and in the principal one—that for the "best exhibition of vegetables arranged for effect"—some exceedingly fine collections are entered. Mr. H. Waterman has secured first honours with one of the most tastefully arranged exhibits we have seen, and the general quality of the vegetables is also highly satisfactory. It includes a great number of varieties, such as Brussels Sprouts, Savoys, Red and Green Cabbages, Beet, Parsnips, Turnips, Spinach, Peas, Beans, Endive, Artichokes, Cucumbers, Tomatoes, and small Salads. They are all arranged in Parsley, and tastefully garnished with red and orange Capsicums, producing a very pretty effect. Mr. J. Neighbour, Bickley Park Gardens, Kent, who is second, also has a tasteful and praiseworthy collection, Mr. Goodacre being a close third. For twelve dishes of vegetables Mr. J. Neighbour is the principal exhibitor, followed by Mr. C. J. Waite, Glenhurst, Esher; and for six dishes of vegetables Mr. T. Beckett, Cole Hatch Farm, Amersham, Bucks, is first, Mr. Leonard Harris, High Wycombe, Bucks, taking the second place. Messrs. Sutton & Sons' prizes for ten dishes bringing good competition. Mr. W. Meads, gardener to Viscount Barrington, Beckett Park, Shrivernham, won the premier position with fine examples of Major Clarke's Red Celery, Henderson's Prolific Potato, President Garfield Tomato, Veitch's Autumn Giant Cauliflower, Tender and True Cucumbers, Hollow-crowned Parsnip, Early Nantes Carrots, White Globe Turnips, Veitch's Exhibition Sprouts, and good Onions. Mr. J. Waite and Mr. Osman are the other prizetakers, each showing well.

*Miscellaneous Exhibits.*—Messrs. T. Rivers & Son, Sawbridgeworth, show bunches of heavily fruited yellow and red Crabs, with dishes of Monarch Plums, also Lord Palmerston and Golden Eagle Peaches. A. V. Box, Esq., Brentford, has a number of fully expanded Pear blossoms and young leaves from a tree of the Louise Bonne variety. Mrs. Joliffe, Yafford House, Sherwell, Isle of Wight, has eight dishes of Apples, including some fine Blenheim Pippins; and Mr. J. Deverill, Banbury, has a large collection of Onions Romsham Park Hero being the principal.

#### INTERNATIONAL POTATO SHOW.

OCTOBER 8TH TO 10TH.

The annual Exhibition of Potatoes at the Crystal Palace has become firmly established as one of the chief horticultural events of the year, and



each season it is looked forward to with increasing interest. There is no lack of financial support from the numerous friends of the scheme, and the result is that the Exhibition well maintains the high position that was speedily taken when the objects were fully recognised. In several respects there has also been a considerable advance, and in one particular this is especially notable at the present Show—namely, in the even symmetrical form of the exhibits. At one time there was an undue preponderance of the rough course character, which it is especially desirable should be avoided in the Potato, and huge specimens rather than clean useful tubers appeared to be the chief aim of the exhibitors. Now, however, there is a rapidly increasing partiality for tubers of moderate size but of handsome appearance, and free from the deep eyes and general roughness which usually disfigure large Potatoes. At the Exhibition, which continues open until Friday afternoon, the medium size Potatoes predominate, and there is a most satisfactory scarcity of course samples, an improvement which is undoubtedly entirely due to the encouragement given by the Judges to exhibitors of the neater tubers.

In point of numbers this Exhibition is not quite so extensive as some that have preceded it, as there are about 1200 dishes in competition, and several hundreds of dishes were exhibited by seedsmen, bringing the total to about 1800 dishes. These contain from nine to twelve tubers each, and the number of these would therefore be about 16,000, as compared with 20,000 which were exhibited last year. They were arranged on short cross tables in the transept, which, though convenient for exhibitors and visitors, did not produce such a good effect as when placed on larger tables in the nave. The staging was not quite so speedily and satisfactorily performed as usual, and great delay occurred in the judging, consequently we can only briefly note the winners of the prizes and the principal varieties represented.

Shortly after 1 P.M. the Exhibition was opened by the Lord Mayor, who, accompanied by a large company of ladies and gentlemen, were conducted round the Show, and the Lord Mayor afterwards presided at the luncheon.

Class A, twenty-four dishes of Potatoes.—The first prize given by Messrs. Carter & Co.; the second by Alderman de Keyser; the third by James McIntosh, Esq., Weybridge; the fourth by P. McKinlay, Esq., Headley Lodge, Anerley; the fifth by C. Fawell, Esq., 4, St. Paul's Churchyard; and the sixth by W. Holloway, Esq., St. Paul's Churchyard. There were twelve exhibitors, all showing remarkably well, the collections being close in merit, and all distinguished by an even handsome appearance. The premier position was gained by Mr. J. Hughes, gardener to Col. Cartwright, Eydon Hall, Byfield, Notts, who had fine dishes of the following:—Schoolmaster, Edgcote Purple, Myatt's Prolific, Prizetaker, Snowdrop, Red Emperor, Prime Minister, Cardinal, Fidler's Success, American Purple, Lady Truscott, Mr. Breese, Woodstock Kidney, Reading Russet, Early Regent, Blanchard, First and Best, Adirondack, International, Queen of the Valley, Porter's Excelsior, Vicar of Laleham, Favourite, and Beauty of Hebron. Mr. W. Ellington, West Row Gardens, Mildenhall, was awarded the second prize for a meritorious collection in which Vicar of Laleham, Early King, International Kidney, Snowdrop, and Mr. Breese were very notable. Mr. W. Kerr, Dangarvel, was third; Mr. G. Allen, gardener to Sir F. Burdett, Bart., Rainsbury Manor, Hungerford, was fourth; Mr. E. S. Wiles, gardener to R. A. Cartwright, Esq., Edgcote Park, Banbury, was fifth; and Mr. T. Pickworth, Loughborough, sixth.

Class B, eighteen dishes, open to gardeners only, and the awards to be made by gardeners. All the prizes are given by Messrs. Sutton & Sons. There were eleven competitors. First honours were adjudged to Mr. Hughes for a most praiseworthy collection, the tubers all of moderate size, but even and free from spot or other defects. The varieties were Mr. Breese, Porter's Excelsior, Edgcote Purple, Edgcote Seedling, Cardinal, Snowdrop, Prizetaker, Schoolmaster, Adirondack, Fidler's Prolific, The Dean, Early Regent, Reading Russet, Fidler's Success, Red Emperor, Woodstock Kidney, Radstock Beauty, and Myatt's Prolific. The second place was gained by Mr. C. Ilott, gardener to Major Allfrey, Wakefield Park, Mortimer, his best dishes being Reading Hero, Adirondack, Woodstock Kidney, Prizetaker, and First and Best. Mr. E. S. Wiles was third, Mr. G. Allen fourth, and Mr. J. Lye fifth.

Class C, twelve dishes.—The first prize is given by Mr. Alderman Evans; the second by Messrs. Daniels Bros.; the third by George Ure, Esq., Wheatlands, Bonnybridge, N.B.; the fourth by R. Russell, Esq., Derby; and the fifth by Messrs. Brinkworth & Sons. There were eight exhibitors, Mr. J. Hughes winning the premier prize with even tubers of Reading Russet, Favourite, Queen of the Valley, Porter's Excelsior, Edgcote Purple, Snowdrop, The Queen, Schoolmaster, Blanchard, Fidler's Prolific, Mr. Breese, and Woodstock Kidney. Mr. E. Ellington was a close second with Magnum Bonum, Lord Beaconsfield, Reading Russet, and Vermont Champion, very good. Mr. T. Pickworth was third, Mr. R. Lye fourth, and Mr. R. West, gardener to J. R. Wigan, Esq., Northland, Salisbury fifth.

Class D, nine dishes.—All the prizes are given by Mr. C. Fidler. Eleven lots were staged. The premier prize was gained by Mr. J. Hughes, who had an admirable even collection, comprising Blanchard, Woodstock Kidney, Porter's Excelsior, Prime Minister, Mr. Breese, Snowdrop, The Dean, Schoolmaster, and Reading Russet. Mr. Tom Tooley, Newlands, Banbury, was accorded the second prize for fine examples of Mr. Breese, International, Reading Russet, and Schoolmaster amongst others. Mr. Dean was third, Mr. W. Kerr fourth, and Mr. R. Ironside, Keith Hall, Inverurie, fifth.

Class E, six dishes.—The first prize is given by Messrs. Webb & Sons, the second by Messrs. Barr & Sons, the third by Shirley Hibbert, Esq., Kew, and the fourth by Mr. W. Earley, Ilford. Fourteen collections were entered. Mr. R. Dean was the most successful in this class, leading with beautiful examples of Mr. Breese, Snowflake, The Dean, Cosmopolitan, Vicar of Laleham, and Sunrise. Mr. J. Hughes secured the second place with Reading Russet, Woodstock Kidney, Edgcote Purple, Early Regent, Mr. Breese, and Sutton's Favourite; only a few points behind the first. Mr. L. Stanton, Towcester, was third, Mr. Tom Tooley fourth, and Mr. G. Allen fifth.

Class F, three dishes of white round Potatoes.—The first prize is given by Messrs. Thomas Gibbs & Co., the second and third by James Wright, Esq., Falkirk, N.B. There were four competitors. Mr. W. Ellington won first honours with medium-size even, clear tubers of Iroquois, Schoolmaster, and Vermont Champion. Mr. J. Hughes was second, having Early Regent and First-and-Best, excellent. Mr. W. Kerr was third, and Mr. T. Pickworth fourth.

Class G, three dishes of coloured round Potatoes.—The first prize is given by Mr. Richard Dean; the second by H. M. Pollett, Esq., Fernside, Bickley; the third and fourth by Mr. Shirley Hibbert. There were nine competitors. Mr. R. Dean, Ealing, was first with handsome even tubers of Reading Russet, Vicar of Laleham, and Matchless. Mr. E. S. Wiles, gardener to R. H. Cartwright, Esq., Edgcote Park, Banbury, took the second place with good dishes of Reading Russet and Adirondack, being especially good. Mr. W. Ellington was third, and Mr. J. Hughes was fourth.

Class H, three dishes of white kidney Potatoes.—All the prizes are given by Messrs. Hooper & Co. Six competitors staged in this class. Mr. W. Kerr took the lead with Early King Offa, Myatt's Kidney, and Pride of America, clean and good. Mr. W. Ellington followed closely with Lord Beaconsfield, International, and Magnum Bonum. Mr. T. Creed, Kemsdale, Faversham, and Mr. G. Bloxham, gardener to P. D. P. Duncombe, Esq., Brickhill Manor, Bletchley, were third and fourth.

Class J, three dishes of coloured kidney Potatoes.—The first prize is given by Alfred Lyon, Esq., Stone Villas, Tottenham; the second by Mr. J. T. Douglas, Eastlake Road, Camberwell; the third by Mr. W. B. Buer, 57, Knightbridge Street, London; and the fourth by Messrs. Brinkworth & Sons. Seven entries. Mr. J. Hughes was placed in the leading position with Mr. Breese, Edgcote Purple, and Prizetaker, beautiful even tubers. Mr. W. Kerr secured the second prize with Early Vermont, Sir Garnet Wolseley, and Defiance. Mr. W. Ellington and Mr. E. S. Wiles were third and fourth respectively.

Class K, best dish of any white round Potato of English origin, twelve tubers of each. All the prizes are given by Messrs. Sutton & Sons, who also give the prizes in the three following classes, the exhibits in each case to be of English origin. There were twenty-two competitors. Mr. C. W. Howard, Bridge, Canterbury, was first with excellent tubers of Schoolmaster, large and even. Mr. J. Lye was second with Porter's Excelsior, even, handsome, and of good size. Mr. R. Ironside was third with Donaldson's Victoria alba, and Mr. Scotchbrook, Northside, Whittlesea, fourth with Schoolmaster of good appearance. Class L, best dish of any coloured round Potato.—Twenty-four dishes were entered, Mr. C. W. Howard being first with Vicar of Laleham, particularly handsome. Mr. R. Dean was second with the same variety, not quite so good. Mr. G. Kirkland was third with the same, rather rougher; Mr. Hughes being fourth with Reading Russet, large and fine, but somewhat spotted. Class M, best dish of any white kidney Potato.—Twenty-one entries.—Mr. Scotchbrook was placed first with International Kidney, very even and handsome. Mr. E. S. Wiles was second with Edgcote Seedling of moderate size but very clean. Mr. G. Allen was third with Cosmopolitan, and Mr. Ironside fourth with Woodstock Kidney. Class N, the best dish of any coloured kidney Potato. Sixteen entries.—Mr. S. Ford, gardener to W. E. Hubbard, Esq., Horsham, led with Prizetaker, Mr. Kerr following with Defiance; Mr. E. S. Wiles with Edgcote Purple, and Mr. C. Ross with Sim's Lifeguard.

Class O, the best dish of any white-skinned Potato, new variety in commerce not offered to the public before 1884. All the prizes are given by Messrs. J. Carter & Co. Sixteen entries.—The chief prize was adjudged to Mr. P. McKinlay, Headley Lodge, Croydon Road, Penge, for an excellent dish of Chancellor (Dean) large even tubers. Mr. C. Ross, Welford Park, Newbury, was placed second with Welford Park of admirable quality. Mr. R. Dean was third with Chancellor, and Mr. J. Hughes fourth with Fidler's Prolific. Other varieties shown in this class were Clyffe Hall, Prime Minister, Recorder, Telephone, and President Garfield.

Class P, best dish of any coloured Potato, new variety in commerce not offered to the public before 1884. All the prizes are given by Mr. C. Fidler. Nine entries.—Mr. R. Dean took the lead with good specimens of The Dean. Mr. J. Hughes was second with the same, and Mr. Ross third, also with the same variety; Mr. Wiles being fourth with Edgcote Purple.

Class Q, three dishes of White round Potatoes, open to exhibitors who have not taken a first prize at any international exhibition. First and second prizes are given by Messrs. Harrison & Sons, the third by Messrs. Brinkwater, and the fourth by James Syme, Esq., Stathearn House, Beckenham. Eleven entries. The first place was gained by Mr. E. Chopping, Milton, Sittingbourne, with Early Household, Giant King, and Reading Hero, Mr. Allen following closely with first and best Schoolmaster and Porter's Excelsior, Mr. James Lye and Mr. Skarratt being third and fourth.

Class R, three dishes of any coloured round Potatoes, open to exhibitors who have not taken a first prize at any international show. The first prize is given by J. T. Clark, Esq., 31, Moorgate Street, the second by Samuel East, Esq., Portsoken Ward, London, and the third by Thomas Price, Esq., Lymore, Beckenham. Fourteen entries. Mr. G. Kirkland, Beddington, was first with Vicar of Laleham, Adirondack, and Reading Russet, very even and clean. Mr. James Lye, Devizes, was second with Vicar of Laleham, Beauty of Kent, and Blanchard, about the same size. Mr. W. Skarratt, gardener to Miss Harrison, Maidenhead Thicket, was third with Sutton's Reading Russet, Adirondack, and Vicar of Laleham; and Mr. G. Allen was fourth.

Class S, three dishes of white kidney Potatoes, open to exhibitors who have not taken a first prize before. The first prize is given by Mr. C. Turner, the second, third, and fourth by Mr. Wm. Kerr, Durgavel. Twelve entries. Mr. W. Skarratt was first with Cosmopolitan Kidney, International Kidney, and Magnum Bonum; Mr. G. Allen, following with Snowdrop and Woodstock Kidney very fine; Mr. E. Chopping was third, and Mr. R. West fourth.

Class T, three dishes of coloured kidney Potatoes. The first prize is given by Messrs. Brinkworth & Sons; the second by Henry Ridgewell, Esq., Cambridge; and the third by J. J. Hanks, Esq., Salsette, Beckenham. Nine entries. Mr. R. West secured first honours for Mr. Breese, American Purple, and Sutton's Prizetaker, extremely fine, especially the first-named. Mr. S. Rogers, Syer House, Whittlesea, followed with Beauty of Hebron and Trophy very good. Mr. G. Allen and Mr. W. Skarratt were the other prizetakers in that order.

Class U.—In this class Messrs. Sutton & Sons offered four prizes for the best four dishes of Potatoes, selected from varieties put in commerce by them, for gardeners only. Mr. J. Hughes was the most successful of the exhibitors, taking the first place with remarkably fine tubers of Reading Russet, Woodstock Kidney, Prizetaker, and First and Best. Mr. C. Osman, Sutton, Surrey, followed with Reading Hero, Fillbasket, Early Regent, and Reading Russet, rather rougher. Mr. G. Allen was third, and Mr. W. Layzell, gardener to R. Hartland, Esq., of Phipps Bridge, Merton, was fourth.



## NEW VARIETIES.

Four classes were provided for seedling varieties not in commerce—namely, for coloured and white kidneys and for coloured and white round varieties. Numerous seedlings were entered, and the following were awarded first-class certificates.

*Miss Fowler* (Ross).—A white kidney, seedling from Sutton's Woodstock Kidney, very even and of moderate size. This had been previously named Aspirant.

*Bride of Eydon* (Hughes).—A white kidney. A seedling from Beauty of Hebron and Myatt's Prolific, a handsome heavy clean variety.

*Ellingtonia* (Ellington).—A coloured kidney. A cross between American Purple and Royal Ashleaf. It is a rather long tuber, pale red, with a few blotches of purple. Very prolific, and of excellent quality for table.

*M.P.* (Ross).—A seedling from Paterson's Victoria. A really excellent white round variety, with rather deep eyes, but very prolific, and of good quality.

*London Hero* (Dean).—A second early round white, from Advance crossed with Woodstock Kidney. A very heavy tuber of moderate size, with a rough skin.

*Chancellor* (Dean).—A white kidney, smooth, clean, solid, and broad; very handsome.

*Harvester* (Dean).—A white kidney, very neat and even, of medium size.

*Suketra* (Holmes).—A white kidney, described on another page.

*Miscellaneous Exhibits.*—From the Royal Horticultural Society's Gardens, Chiswick, came thirty dishes of seedlings which have been tried during the season for the exhibitors in the seedling classes. Very notable was *M.P.* (Ross), a solid round white variety, very prolific and of good quality. Messrs. Sutton & Sons, Reading, exhibited 150 varieties of Potatoes from an important and interesting exhibition. About thirty-five seedlings were also represented, many being of promising appearance. Large heaps of Reading Hero, Magnum Bonum, Reading Russet, Early Regent, Prizetaker, Lady Truscott, and others sent out by the firm were prominent in one portion of the Exhibition. Five bunches of Tomato Chiswick Red were also shown by the same firm.

Messrs. J. Carter & Co., High Holborn, exhibited some large heaps of standard varieties, including Rivers' Royal Ashleaf, Cosmopolitan, Schoolmaster, Carter's First Crop Ashleaf, Myatt's Ashleaf, White Elephant, Beauty of Hebron, a new white round seedling, very prolific, and the diminutive Potato before noticed. Mr. Thomas Laxton, Girtford, Sandy, exhibited twenty-six dishes of seedling Potatoes, representing crosses between many varieties, White-skinned Beauty of Hebron being the principal parent. Fine samples of Autumn Giant Runner Bean and "Open-air" Tomatoes were also included, the latter being a small-fruited but prolific and hardy variety.

Messrs. Harrison & Sons, Leicester, showed sixty dishes of Potatoes, mostly of great size, and representing a number of varieties. Very notable were Schoolmaster; Imperator, a new white round variety; Reading Hero, White Elephant, and International. Messrs. Hooper & Co., Covent Garden, had a heap of Dakota Red, Kidney Potato, weighing 372 lbs., the produce of one tuber grown by Mr. Burrance, Trent Valley. Mr. C. Fidler, Reading, exhibited a large number of dishes of Potatoes grown under ordinary field culture. Fidler's Prolific, a large white kidney certificated in 1883; White Elephant, of great size; and Fidler's Improved Ashleaf, a heavy cropping white kidney, were the most noteworthy.

## POINSETTIA PULCHERRIMA.

As this plant proves so very effective and useful at the dullest season of the year, and never having seen it planted out of doors advocated, the following note may prove useful. Some years ago, having some old stumps of Poinsettias doomed for the rubbish heap, I tried the experiment of placing them out with the other winter-flowering plants early in June. The plan proved very successful, as the old stumps threw out from seven to a dozen shoots, and when lifted in September they were plants measuring from 2 to 3 feet across, and from 18 to 24 inches in height, clothed with dark green foliage to the ground. They were carefully lifted, potted, placed in a pit, and kept close and shaded for a few days, and never lost a leaf. They were afterwards placed in a warm airy house, and in due time on every shoot appeared splendid scarlet bracts, the heads varying from 12 to 18 inches across. This year the same plan has proved equally successful, but as I employed younger plants they have not so many shoots; in other respects they are very promising.—CHARLES DENNING, *Holme Lacy Gardens, Hereford.*



## KITCHEN GARDEN.

AUTUMN has fairly commenced in this department, and we are now busy cleaning, storing, and preparing for winter. Whenever two or three dry days occur and the soil can be hoed and raked all weedy quarters should be thoroughly cleaned. Any quarters recently cropped but empty now may be dug up roughly or trenched and left well exposed to the weather. This is work we have always in hand in winter, and we find it very convenient, as the garden men can always have a turn at the trenching at any convenient time.

*Cabbages.*—Plants put into their bearing quarters some weeks ago have

grown well since, and they will now be benefited by having a little of the soil on each side drawn up to the stems with a drag hoc. Owing to the mildness of the weather our earliest-planted autumn Cabbage plants are unusually early. The first of them look as if they would head about the new year, and if they do of course they will be in use for spring; but we have plenty of later ones which will come in then, only everybody may not have such, and where there is any prospect of a deficiency at any time plant more out at once. These may not grow much this autumn, especially if frost comes soon, but they will stand the winter well and make rapid progress in spring.

*Tomatoes.*—We have never experienced a better season for outdoor Tomatoes. We have cut many ripe fruits weekly since the beginning of August, and there are still many to ripen; but the cold nights are against them now, and if care is not taken many of them may decay before ripening. When occasional frost or constant damp rests on them many of the fruits become black on the side, and then they decay quickly. When the plants are growing against a wall and do not exceed 4 feet in height it is a capital plan to place a frame light over them. This prevents frost or wet injuring them, and still they have plenty of air from the sides. Whenever any fruits begin to change colour cut them and put them in the fruit-room to ripen.

Lettuces and Endive have been making rapid progress during the last few weeks. So much is this the case that many winter plants will be ready for use in the autumn, and wherever this occurs plants still in the seed-beds and rows should be lifted and planted in sunny borders or in frames for late use. Wherever there are empty frames fill them at once with such, and a good batch of Cauliflowers may also be sown. Runner Beans are still fresh, and promise to be so for a considerable time; but where they are bearing a heavy crop of fully developed seed pods these will interfere with the swelling of the younger pods, and if the seed is not really valued gather all the old ones, and the young pods will soon show their appreciation of the operation.

French Beans in frames should have all the light and air available, and do not keep them close and moist, or the blooms just forming pods may decay prematurely. On fine days it is best to withdraw the lights and only put them on at night. Frame-sowing must now cease, but in heated pits seed may be sown for Christmas and New Year fruiting. Where good accommodation of this kind does not exist sow seeds and grow the plants in pots.

It is many years since we have been able to gather so many Mushroom rooms in the fields as we have done lately; but these are almost finished now, and none need be looked for in November; but beds formed in cool sheds in September and October will be bearing then, and as they are very acceptable in the kitchen during the winter continue to make up small beds fortnightly. Our first autumn bed was formed in the last week of August, and the surface of it is now white with the produce. Since then other three have been made up, and as we do this every other week we expect our Mushroom crop to be a constant one for some months to come.

## FRUIT FORCING.

*PINES.*—Fermenting material if not indispensable is an aid to economy in the cultivation of these plants. Tan is unquestionably the best as a heating medium for the roots of plants and where it can be procured at a reasonable price. Beds of this material occasionally require to be renewed about this time, and should be attended to at once, before the season is too far advanced. A layer of 12 or 18 inches of fresh tan mixed with the rest will afford adequate warmth to a bed for a considerable time. The present is a seasonable time to make up new tan beds, which in the first instance should be made from 3 to 4 feet deep; but before putting in the tan it is well to prepare it by laying it in a dry airy shed, where it can be turned over a few times, as by this process it becomes drier, and the risk of violent heating is, to a great extent, avoided. It must be borne in mind, however, that new beds demand daily attention in respect of the heat generated, or much mischief may happen at the roots of the plants plunged therein before it is discovered, when it is too late to be remedied.

Any re-arrangement in connection with Pine plants should, as far as practicable, be completed by the end of the present month, and also at the same time any renewals of the beds should be attended to. In arranging the plants together, give those which are fruiting or are expected to do so shortly a place where sufficient heat is attainable under any circumstances, and where the full force of sunshine and light will be efficacious. Successional plants should also have a place to themselves which is not likely to become extremely dry, and where a moderate temperature of about 60° and moisture is at all times present. For keeping young stock through the winter in the best condition of health we prefer light pits or low houses having beds of fermenting materials in them, as such places afford conditions more congenial to vegetation. It is, however, under these conditions necessary that the watering be done judiciously.

The season has now so far advanced that artificial heat will need to be steadily increased; and although we do not advocate a high night temperature we deprecate sudden transitions in temperature at any season. See, therefore, that the fires are fit for their work when there is a probability of an emergency; 55° to 60° at night is sufficient for rooted suckers, which are required to advance slowly in growth, 60° to 65° about successional plants, and 70° in the fruiting department, on all of which an advance of 5° by artificial means should be allowed, and 10° to 15° from sun heat.

*MELONS.*—To have flavour and colour in Melons ripening in October, it is necessary, in addition to the fine weather we have been favoured with



of late, to have at command a good supply of top and bottom heat. To attain colour and flavour the temperature during the ripening period of the fruit should be somewhat light, the air dry and airy, and these cannot be attained without recourse to fire heat. The temperature should be maintained at 70° to 75° by artificial means through the day, and it may fall 5° during the night. There will be enough moisture in the house without much, if indeed any need of damping, but it is essential to a full-flavoured Melon that the roots have sufficient moisture to maintain the foliage in good condition until the fruit is ripe, and it must be kept healthy by a proper degree of moisture in the atmosphere, available surfaces being occasionally damped in bright weather. A little ventilation should be given constantly so as to avoid a stagnant atmosphere, and the most should be made of sun heat by allowing an advance of temperature from it to 85° to 90°. Keep all laterals closely pinched, and remove them where they crowd or interfere with the free access of light and air to the principal foliage and fruit.

**CUCUMBERS.**—As we may expect any time to have a change in the weather the plants must be treated in accordance therewith. Then atmospheric moisture must be reduced to a minimum and air admitted very cautiously, otherwise mildew would be likely to attack the plants, in which case the affected parts should be at once dusted with flowers of sulphur while damp, after which the house must be kept rather dry and airy until the disease has been eradicated. During the next three or four months a somewhat dry atmosphere should be maintained. Damping available surfaces in the morning and afternoon must have attention in bright weather, and on bright sunny days the plants may be lightly syringed about one o'clock, closing at the same time. Keep the growths stopped at a joint beyond the show of fruit, and then cut where the growths are likely to become too crowded, and seek a continuance of bearing wood by cutting out exhausted growths and training others in their place. Maintain a night temperature of 65° to 70°, the higher on mild and lower on cold nights, in each case falling 5° through the night, 70° to 75° by day from fire heat, and 10° to 15° advance from sun heat. See that the roots have sufficient moisture, not, however, giving any water until it is required, then give a thorough soaking with tepid liquid manure, clear and weak. Cut the fruits as soon as they have attained a suitable size for table, and set them on the stem or neck ends in saucers in which there is a little over half an inch of water in a fruit-room or other suitable place where they will keep in good condition several days. The plants relieved in that way of the demand for nutriment in that direction will direct, or rather the flow of sap will be drawn into other channels, assisting in the swelling and finishing of the younger and smaller fruits, continuing this during the whole fruiting period of the plants.

#### PLANT HOUSES.

**Ferns.**—*Adiantums*, *Davallias*, and other Ferns grown on specially for supplying fronds for cutting, should be exposed to every ray of light that they will bear. They should be elevated as close to the glass as possible and given a good circulation of air. The fronds of Ferns grown in a close, moist, shaded atmosphere are useless for purposes of cutting, for they commence shrivelling almost as soon as they are severed from the plants; but when grown in a moderately cool temperature under the influence of light and air they last much longer. Plants that have been grown for this purpose in cool structures will now need a little fire heat at night, so that the temperature will not fall below 50°. Unless this can be maintained the plants will go back rapidly instead of remaining in a fresh healthy condition. Less shade generally will be required by these plants than previously, also less syringing and moisture in the house after this date, so that the plants will have every opportunity of ripening before the winter. Plants that have had nearly the whole of the fronds removed and have been rested will soon start again if introduced into heat until they are in active growth, when a little cooler and more airy structure should be given to ripen and harden the fronds ready for the time when they are required for cutting.

***Selaginella Kraussiana (denticulata).***—This is very useful for purposes of decoration, especially for furnishing the surface of pots, and for many other positions in dwelling rooms as well as out. Where quantities are used in such positions during the winter a good stock should be prepared without delay. Shallow pans, boxes, and even small pots, should be planted with it, so that it will have ample time to become thoroughly established. It will grow freely in any light sandy soil; and if the pots, boxes, or pans are placed in the stove, or any moist heated structure after they have been thinly planted, it will commence active growth at once. If started now the surface of the boxes or pans will very soon be covered, but if the pans are not made up until later in the season growth will be very slow. The more shallow the boxes and pans planted with this moss the better, for it will last much longer in rooms, when it can be lifted out of them and used with the soil attached to its roots, than it will when planted in a greater depth of soil, which must be shaken from it before it is suitable for using in many positions. When well established the pans and boxes should be removed to a cool structure, which materially adds to its lasting properties for room-decoration.

***Panicum variegatum.***—This is a useful plant for associating *Selaginella* for room-decoration. A good number of cuttings, according to the demand, should be inserted thickly together in pans and boxes in any light sandy soil. A good watering should be given after insertion, and the cuttings placed in a frame in a heated structure kept close and shaded until they are rooted. Little plants in small balls of moss and soil are very useful for decoration, and last twice the time that they would do if lifted out of pans and boxes and placed directly in dwelling rooms. They are very useful in small pots, but in many positions they cannot be used in the pots in which they are grown.

***Tradescantias.***—The variegated forms of these plants are also invaluable for the above purpose, and last very much longer in rooms than *Panicum*. They root quickly and readily on a shelf in a warm structure, and grow rapidly at all seasons of the year. These should be rooted from time to time in quantity as they are required, and may be used straight from pans and boxes in which they are rooted, for they do not appear to suffer in the least by being disturbed at their roots. Small bunches tied in moss and intermixed with small Ferns, where the surface is covered with *Selaginella*, have a charming appearance both by day and gaslight. In such positions they last longer than the majority of plants provided they are well supplied with water.

***Petunias.***—A batch of strong healthy cuttings of dwarf double varieties should now be selected and rooted, if useful decorative plants are required, in 5 and 6-inch pots early in the season. As soon as they are rooted they should be established in 2½-inch pots, in which they will pass the winter safer than if larger were employed. After they are rooted and potted they should be kept close until they are rooting freely, when they must be gradually hardened, and grown close to the glass in a temperature that will not fall below 45°. The only attention needed afterwards is to water them carefully and pinch the points out of the shoots to induce a dwarf compact growth. To keep these young plants in good condition for starting away vigorously early in the year they should be kept growing slowly. Use for a compost good loam, one-third leaf mould and sand; the soil should be pressed moderately firm into the small pots.

***Heliotropes.***—A batch of the cuttings of these plants should also be rooted for early spring flowering. They may be potted in the same size pots and grown under exactly the same conditions during the winter. Plants that have been standing outside and intended for autumn and winter flowering must now be housed without delay. The pots in which the plants are growing should be full of roots, and before taking them indoors they should be top-dressed with a little rich soil. This will induce root-action and keep the plants growing and, in consequence, flowering for a long time. They should be divided into at least two batches, the one placed where the temperature at night will not fall below 50°, and if freely ventilated during the day will, by the end of the month, flower abundantly. The other batch, for at least a month, should be given as much air as possible when favourable during the day, and at night when mild; they need only be protected from frost. These plants should be liberally supplied with stimulants at their roots, or artificial manure occasionally supplied to the surface.

***Mignonette.***—Tree varieties trained upon trellises must have all the flowers removed for some time yet directly they make their appearance. The shoots, as they extend, should be distributed as evenly as possible, so that when allowed to come into flower the plants will have an even neat appearance. Abundance of light and air must be given daily to encourage a strong sturdy growth, which, in return, is sure to produce large spikes of bloom. Keep the roots active by careful watering and light applications of artificial manure to the surface of the soil. Clear soot water given occasionally is very beneficial. Plants in 5 and 6-inch pots that have been standing outside up to the present time, and are intended for flowering in about two months, should now have the protection of a cold frame. The plants must be kept as near the glass as possible, and when favourable the lights can be removed during the day, and a little ventilation afforded at night. Succession batches should also be under cover. A frame should be placed over the bed of plants growing outside, and sown for the purpose of supplying spikes for cutting until late in the autumn. The lights need be placed over this batch only when there is fear of frost or heavy rains. In another batch of 5-inch pots seed may now be sown to afford plants for late spring flowering.



#### MANIPULATION OF QUEENLESS HIVES.

THE "Laird o' Luggiehead," after descanting on the enthusiasm and silliness of lovers, pointing out the evils to be avoided, follows with the advice, "Wait till yer banes are hardened, till yer baird taks a grup of the razar, and yer purse can stan its lane before you attempt to catch a quean." The advice is good, and is analogous to many bee-keepers, who start apiculture with a very indifferent knowledge of the bee, derived from often as indifferent teaching. They act as if manipulation was the key to success, yet worry the bees to death, courting disease and disappointment by spreading the brood, and attempting to catch queens. Such a proceeding should not be attempted unless when she is to be deposed, neither should queens be marked or mutilated. Bees are very particular. Any so marked are sooner or later doomed to destruction, and it may be at a time when the loss is irreparable. I have been induced to make these remarks on reading "Y. B. A. Z.'s" letter (see pages 251 and 252).

Speaking of finding queens being as difficult as looking "for a needle in a bundle of hay," "Y. B. A. Z." will find in previous issues what I recommend when the bee-keeper cannot distinguish her by the motion of the bees, which to a practised eye is plain. I advise, like the "Laird of Luggiehead," wait until you have



had some experience before attempting that. The most clever attempt I ever made in capturing a queen bee occupied exactly one week, from about eight o'clock A.M. till four o'clock P.M. each day. I was quite familiar with this queen's appearance, having witnessed her a number of times leaving, then re-entering the hive after being in search of the drone. Her appearance, unless in the legs, was similar to the workers, and after she was caught distinguished bee-keepers pronounced her a small worker. A post-mortem examination proved her quite a normal queen in other respects. To find such a queen would have puzzled many, and not a few of the experts who compete in driving and catching the queen at bee shows.

To be successful in catching queens the bee-keeper must know first the appearance of queens, then experience must teach the rest. To assist, however, in the art of catching queens I may be allowed to explain that queens in common straw hives will, when the bees are being driven, drop to the top of the hive, the bottom when inverted; then when frame hives are manipulated the queen drops from the comb to the side of the hive or floor, and will not unfrequently fly out. If her wings are not mutilated and the day warm she may return, but if they are injured she will probably be lost. The mutilating of queen's wings incite the bees to raise young ones, which hastens her deposition; then the better a queen can fly the abler will she be to follow the swarm, which I never knew one fail to do. When the queen is unable to fly, or is caught in the act of swarming, the bees neither settle nor swarm satisfactorily.

When hives are properly managed there should not be any manipulation required after September until the month of April or May (suspected cases excepted), unless in the cleaning of floorboards, which can also be dispensed with if perforated zinc is used. All inspections of hives during winter, to ascertain whether food is required or anything else, is but the work of ignorance, and hastens that which eminent bee-keepers seek to avoid—viz., the wearing out and the loss of bees; but here again must the novice be puzzled, because the individuals who seek to do away with the brimstone pit by saving the condemned bees through driving tell us that bees living now are of no use in a hive in spring. If such teachers would explain how these conflicting statements can be reconciled it would benefit beginners.

Having disposed in a partial way of the impropriety of handling queens and manipulating the hive, I will endeavour to show some of the causes of queenless hives and how to detect them. Any manipulation that induces bees to gorge themselves and exposure of the combs excites robbers that often set upon the queen and kill her, when the bees through their surfeit do not attempt defence. Injudicious feeding, exposure of honey or syrup, gives the bees in all apiaries for miles around the fever to rob, when many queens may be expected to be killed.

Then there is the deposition of queens through stimulative feeding and irregular combs, such as is sure to be found in the hives of those who spread the brood, or in those containing much drone comb, perhaps made if the queen was removed, when the gathering of honey takes place. Here again is information wanted. Do bees hatch quicker or begin to work at a younger age when queen is removed than when they are allowed to remain, as they should be? I will pause for an answer to this, and explain to "Y. B. A. Z." that what he describes as "the bees were in a state of great excitement, dashing wildly about in the front of the hive, as if robbing was going on," &c., is exactly as he describes the first signs of the want of a queen, which almost but not always takes place. When the excitement had subsided it is a proof that a successor is being raised, and he may find his hive not queenless, but with a confirmed drone-breeder. To know a queenless hive by the disconsolate hum it is necessary to listen for some time. If a steady hum is continued then all is right, but if the noise is spasmodic then it is queenless. In queenless hives the bees at the entrance seem more languid, and do not rush out and in with the same activity as do the bees with a queen; their antennæ are more drooping, and they do not seek water, nor feed as bees having a queen. In manipulating an experienced bee-keeper can tell at a glance by their movements as well as the sound. The easiest way to detect the presence or non-presence of a queen is to examine the combs. If there are eggs and worker brood, all is right; if not, something is wrong. The feeding back supers or frames of honey in the body of the hive if cautiously done is very good, but neither so good nor safe as when done from above, and if done on the principle of interposing an empty super between the hive and the full one the bees will soon clean the honey down, as they often do with filled supers, to the bee-keeper's chagrin.

If "Y. B. A. Z." will turn back to some of the earlier issues of this Journal he will find that the system of feeding back is not

a suggestion of Abbott's, and if he searches farther he will find "R. S." suggested carbolic acid as a quieter, preventer of robbing, and disinfectant as well. The reasons it was not generally adopted and fell into abeyance I could easily explain, but it is a fact that carbolic acid has been used in some apiaries for at least a dozen years, and an Ayrshire bee-keeper with whom I am acquainted had at that time a supply of two gallons to fight the fell destroyer. From the many experiments I have made, microscopically and by the application of carbolic acid, I can endorse much of what Mr. Cheshire says, which every bee-keeper ought to be proud, and trust Mr. Cheshire will reap reward for his labours, notwithstanding the fact so many are trying to forestall him. I have some combs that were treated in a diseased state two years ago perfectly free from disease, and two of my best hives at this moment were much diseased last autumn, but being treated with carbolic acid are now free from disease. Notwithstanding these assuring experiments I look upon carbolic acid more as a preventive than a cure, and always regard diseased hives as unprofitable.—A LANARKSHIRE BEE-KEEPER.

#### THE BEST ASPECT FOR WINTERING BEES.

IN reply to "R. S. V. P.," I may state that my halcyon days in bee-keeping were for nearly twenty years, when all my hives faced north during both summer and winter. The apiary was, however, within an enclosure where the winds from north-west, north, and east never touched the hives, and not the slightest eddy at any time could be felt. When the sun shone its rays penetrated the enclosure, so that when the bees ventured out they had every advantage; and as I took especial care to have all the alighting boards protected from damp, the bees were never chilled, enabling them to reach their entrance with safety. The hives standing in complete shelter, the bees were never seduced to leave their hives at an improper time, the result being always good and well-advanced hives.

Another aspect with the hives facing north would not be so favourable—viz., if the hives were placed on the north side of a high wall or other fence without shelter from north-west, north, and east, many bees would be lost when out, besides those in the hive would be more contracted, and the hive colder, so that breeding would not go on so briskly, early, and profitable. At all seasons hives should have a position free from winds. Where that is wanting artificial means to attain it should be adopted. Doubtless the less bees fly during winter the less food is consumed. Another important matter is that hives should afford ready access to the bees; tunnels detain them, and during chilly weather many are lost.

Bees leaving their hives prematurely can only be remedied after the fact, if they are not lost. On capturing the swarm they should be put into dry combs, if these can be had; if not, the hive they left should be thoroughly heated and dried before returning them. Then feed to encourage breeding, as after that is commenced in earnest bees do not leave prematurely so readily.—A LANARKSHIRE BEE-KEEPER.

#### TRADE CATALOGUES RECEIVED.

William Barron, Sketty Nursery Farm, Swansea.—*Catalogue of Ornamental Trees, Shrubs, Fruit Trees, &c.*

George Bunyard & Co., The Old Nurseries, Maidstone.—*Catalogue of Roses, Bulbs, &c.*

Dammann & Co., Portici, Naples.—*General Seed Catalogue.*



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Making Stokehole Watertight (T. R.).**—If you consult a practical builder on the subject we think he will have no difficulty in erecting a divisional wall that will resist the action of the heat; the greatest diffi-



culty we should fear would be in keeping out the water. This, however, may be accomplished with a good clay backing and a properly built supporting wall. In very wet places some persons heat their structures with boilers fixed above the pipes, the water being forced from the boiler into a chamber considerably above it, from whence it flows into the pipes below. We are obliged by your commendatory letter. We are always ready to impart information when we are able to do so.

**Caterpillars (E. L. L.).**—We know of no means by which the chrysalids can be destroyed by any ready means. It does not follow that you will have a similar plague another year, as the weather may not be favourable for the moths that are the parents of the caterpillars. Had you employed a man to have dusted the plants heavily with soot when the leaves were wet with dew many of the caterpillars would have been destroyed and the crops benefited, soot being an excellent manure. We are not aware that caterpillars on Cabbages, &c., constitute the food of any particular birds, but perhaps some of our ornithological readers can supply information on this point.

**Boards for Chrysanthemum Blooms (A. B.).**—Boards are easily made of three-quarter-inch deal, planed smoothly, and painted a rather light green. All the boards are of an uniform width of 18 inches, and are raised by legs screwed into the cross battens near each end, 6 inches high at the back and 2 inches at the front. For six blooms the boards are 1 foot long, for twelve 2 feet long, and two of these can be used for twenty-four blooms, and so on. As we have not received the schedule of the York Chrysanthemum Society we are unable to inform you of the name and address of the Secretary.

**Pit for Grapes (A. B.).**—We have seen excellent Grapes grown in pits similar to the one figured last week, where the subsoil is dry; but where it is wet houses should be built above ground. We should not have the roof much flatter, as this would simply shorten it and have no corresponding advantage. No doubt the pit could be heated with sufficient piping arranged down the path, but it would be more economical to have at least one pipe along the sides of the house, and we fail to see anything to prevent such an arrangement. With top ventilation alone lids should open the whole length of the house.

**Tca Roses for Exhibition (Idem).**—Catherine Mermet, Maréchal Niel, Souvenir d'un Ami, Marie Van Houtte, Souvenir d'Elise, Devoniensis, Madame Lambard, Niphetos, Madame Bravy, Jean Ducher, Perle des Jardins, and Rubens.

**Grapes in Greenhouse (Clifton).**—After Black Hamburgs have been ripe for some time they lose much of their dark colour and assume a reddish hue, but do not turn sour unless the footstalks become affected with gangrene, which is known as shanking. This, however, usually affects Grapes just as they are ripening. It is mainly the cause of defective root-action or ungenial soil, and is aggravated by overcropping and general mismanagement of the foliage in permitting the growths to be overcrowded. If the Grapes are quite ripe and the house shaded we should cut the bunches with a considerable portion of the laterals attached. Insert these in wine bottles of water, and suspend them in a room having a temperature of about 45°, of course cutting out all imperfect berries. Your Buckland Sweetwater does not bear probably because the wood, if it is strong enough, is not well matured. A free grower, and more certain white Grape, is Foster's Seedling. If you cut the fruit you would probably find it advantageous to allow your house rather brisk artificial heat, giving at the same time abundance of air for a fortnight for ripening the wood.

**Grubs in Begonia Tubers (G. S.).**—As the tubers get old they are liable to the attacks of underground enemies, the same as the corms of Cyclamens are. The latter, if free from maggots when potted in soil that has been made hot over a fire, will, we think, remain free; and soil so heated is improved in fertility. We should shake the Begonias out of the soil and dip the tubers in a mixture of softsoap and tobacco water, then dry them and store in previously heated and dried soil. It is always a good plan to keep raising young tubers, as the old are ever liable to "go wrong" in some way.

**Heat in Outdoor Mushroom Bed (Amateur).**—Heat rises in the beds or ought to rise, after they are made up ready for spawning, and it is very important that the spawn is not inserted until the heat has attained its maximum and commenced falling. When it is about 90° 2 or 3 inches below the surface the spawning may be done, and if the heat is maintained about 80°—a degree or two above or below not being material—the mycelium will spread if the manure is in good condition and the spawn also good. The amount of covering applied must obviously depend on the heat of the bed or the weather. If the temperature rises above 85° reduce the covering; if it falls below 75° increase it—that is, the heat below the casing. If a thermometer laid on the bed under the straw registers 60° that will suffice for the spread of the mycelium, and when Mushrooms appear the temperature may be about 55°. A waterproof covering may be used over the straw if the bed is not too warm, or when the surface is not above 60°. If warmer than that either the covering must be removed or the litter underneath it reduced in thickness.

**Cucumber-Root Disease (W. Raynor).**—The roots you have sent are seriously affected with the disease that has been microscopically examined and described as follows by Mr. Worthington G. Smith:—"The root nodules are generally assumed to have a fungus origin, but the Rev. M. J. Berkeley long ago described the disease, and showed it to be caused by a parasite of another nature. The description he illustrated with the utmost accuracy. It would seem that the pest which causes the mischief is not always readily seen, or maybe it escapes into the surrounding soil, or, after working the mischief, perishes; but that it is sometimes difficult or even impossible to detect Mr. Berkeley himself confesses. For our part we have frequently seen the interior of the nodules just in the condition described by Mr. Berkeley, with the parasites in all stages of growth, from the egg condition upwards. Mr. Berkeley refers these parasites to vibrios, which belongs to the infusoria (properly confervoid Algæ), common in foetid water, &c., and always, we believe, extremely minute in size; but the animals are just over one one-hundredth of an inch long, whilst vibrios are ten times smaller, and do not arise from eggs, but increase by the formation of new joints and separation

at the articulations. The parasite appears to us to belong rather to the oviparous section of the genus Anguillula, which includes the 'vinegar eel,' and except that it is only about one-half the size, it is very similar in all stages of growth to A. Tritici, an eel found infesting blighted Wheat. It is often complained that men of science cannot specify cures for the diseases they describe, but it should always be remembered that in regard to cures pathological botanists considerably resemble doctors of medicine. It does not follow that, because a doctor can tell by certain symptoms his patient may have Asiatic cholera or cancer, that he can therefore cure the disease; or because a fireman sees your house is being destroyed by fire, he can from that mere fact extinguish the blaze. Physic and water sometimes do wonderful things, and in the case of worms in the roots of Cucumbers, the best remedy is to destroy the plants and look to the compost, which probably harbours the parasites."

**Names of Fruit (J. P.).**—The Grapes you have sent are good examples of 1, Buckland Sweetwater; 2, Foster's Seedling. (E. Price).—1 and 2, Ribston Pippin; 3, Cellini. (J. H. N.).—1, Lord Grosvenor; 3, Fearn's Pippin; 4, Cox's Orange Pippin; 5, decayed; 6, Beurré Diel. (W. D.).—1, Bess Pool; 2, Gloria Mundi; 4, Costard; 1 Pear, Flemish Beauty; 2, Nouveau Poiteau; 3, Catillac. (D. Mackie).—1, decayed; 2, Vicar of Winkfield; 3, Warner's King; 4, Gravenstein. (G. Southcott).—1, Brown Beurré; 2, Devonshire Buckland; 3, Devonshire Queen; 4, not known. (A. C.).—Borsdorfer. (Charles Stocking).—Striped Beefing. (J. S.).—The large Apple Hollandbury, the small Cellini. (T. Stephens).—Red Autumn Calville. (J. S.).—1, Cellini; 2, Cox's Orange Pippin; 3, Barton's Incomparable; 4, Golden Russet; 5, not known; 6, Winter Marigold.

**Names of Plants (Tin Box).**—Though you write complainingly we do not think you have much cause for complaint. If you have not read the full reply we gave on page 275 in our issue of September the 18th, that is scarcely our fault, but rather your own omission. (H. K.).—Oncidium flexuosum. (H. A. W.).—Cratægus coccinea.

**Errata.**—In the "Notes on Dahlias" on page 305, their "three great wants" are stated to be, "plenty of air, plenty of loam, and plenty of water." The word "loam" should have been printed "room;" but if they have plenty of loam as well they will be none the worse for the addition. The word "we" in the third line from top of page 317 should have been "who," and "Senex" thatches his bee-houses with Heather. The printer perhaps thought "leather" would be more durable, but we hope in future he will "follow copy."

#### COVENT GARDEN MARKET.—OCTOBER 8TH.

BUSINESS quiet. Large supplies of home-grown Apples reaching us, prices falling.

##### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. .. .	½ sieve	2 6 to 3 6	Oranges .. .. .	100	8 0 to 12 0
Chestnuts .. .. .	bushel	0 0 0 0	Peaches .. .. .	per doz.	3 0 8 0
Cobs, Kent .. ..	per 100 lbs.	50 0 55 0	Pears, kitchen ..	dozen	0 0 0 0
Currants, Red ..	½ sieve	0 0 0 0	„ dessert .. ..	dozen	1 0 3 0
„ Black .. .. .	½ sieve	0 0 0 0	Pine Apples English ..	lb.	4 0 6 0
Figs .. .. .	dozen	0 6 1 0	Plums .. .. .	½ sieve	0 0 0 0
Grapes .. .. .	lb.	0 6 4 0	Strawberries .. ..	lb.	0 0 0 0
Lemons .. .. .	case	15 0 21 0	St. Michael Pines ..	each	4 0 7 0

##### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes .. ..	dozen	2 0 to 4 0	Lettuce .. .. .	dozen	1 0 to 1 6
Beans, Kidney ..	lb.	0 3 0 0	Mushrooms .. ..	punnet	0 0 1 6
Beet, Red .. .. .	dozen	1 0 2 0	Mustard and Cress ..	punnet	0 2 0 0
Broccoli .. .. .	bundle	0 9 1 0	Onions .. .. .	bunch	0 3 0 4
Brussels Sprouts ..	½ sieve	0 0 0 0	Parsley .. .. .	dozen bunches	2 0 3 0
Cabbage .. .. .	dozen	0 0 1 0	Parsnips .. .. .	dozen	1 0 2 0
Capsicums .. .. .	100	1 6 2 0	Potatoes .. .. .	cwt.	4 0 5 0
Carrots .. .. .	bunch	0 3 0 4	„ Kidney .. .. .	cwt.	4 0 5 0
Cauliflowers .. ..	dozen	2 0 3 0	Rhubarb .. .. .	bundle	0 4 0 0
Celery .. .. .	bundle	1 6 2 0	Salsafy .. .. .	bundle	1 0 0 6
Coleworts .. .. .	dcz. bunches	2 0 4 0	Scorzoneria .. ..	bundle	1 6 0 0
Cucumbers .. .. .	each	0 2 0 4	Shallots .. .. .	lb.	0 3 0 0
Endive .. .. .	dozen	1 0 2 0	Spinach .. .. .	bushel	2 0 4 0
Herbs .. .. .	bunch	0 2 0 0	Tomatoes .. .. .	lb.	0 6 0 0
Leeks .. .. .	bunch	0 3 0 4	Turnips .. .. .	bunch	0 4 0 6



#### AUTUMN CORN SOWING.

ONCE more the time has arrived for coming to a decision about the division of the land for the crops of next year. Local circumstances must exercise considerable influence upon our arrangements; the nature and condition of the soil, the means at our disposal for its cultivation, implements, motive power, manures, all must be passed in review, for although we may be fully sensible of the best way of cropping the land, yet the means at our disposal may be insufficient, and then we must do the best we can. That high farming pays there can be no doubt, and we are strongly of opinion that it answers best to take a small farm and apply £20 per acre to its culture rather than a large one with only the proverbial £10 per acre. By high farming we do not mean extravagant farming; rather do we aim at strict economy, but it is economy tempered by discretion. A neighbour of ours sowed Wheat last autumn upon a piece of poor land



foul with twitch. The straw of this crop was not more than 2 feet high, and the ears and grain were both equally undersized. Another neighbour sowed his Wheat upon heavy undrained land into which a heavy dressing of manure, quite a third more than the usual quantity, had been ploughed, but the crop was in every way below par. Both these cases were examples of extravagant farming, the first slovenly piece of practice being a mere waste of seed and labour, and the other a wasteful and useless expenditure of manure simply from the absence of drains and of mechanical division in the soil. High farming, in the sense in which it is used here, implies drainage and mechanical division of the soil, a clean seed bed, the correct and economical application of manure, carefully selected seed, timely sowing in the best way. These are all simple but most important matters of detail, but how seldom do we meet with an intelligent careful application of them in practice! Said a sensible landowner to a would-be tenant: "Give me proof that you possess sufficient knowledge and capital to farm my land in the best way, and I will take care that the drainage and buildings are sound and complete." This is the spirit that should animate such contracts, and it will doubtless be so eventually.

The proportion of land for Wheat culture has hitherto on many home farms been about one-third of the arable land, but the growing importance of green crops for spring folding may lead to some reduction of that proportion. Rye, Winter Oats, and Barley will be sown more extensively as the knowledge of the real value of such crops spreads. Rye is especially valuable both for folding and for an early supply of green fodder both for cattle and horses in the yards. Take the spring of the present year for example. A mild winter and an early growth upon the pastures led us to expect an early clearance of the cattle yards, but a sudden change to colder weather retarded the turning-out several weeks, rendering the earliest cut of Rye of especial value. So, too, with the Winter Oats and Barley. There is always the option of turning sheep upon both these crops, and then if our land is sound and fertile the corn may be let grow again with the assurance of a fair crop of grain, or these crops and Winter Tares are all available for the silo. We regard Winter Oats as an especially desirable crop for the grain alone. The plant is usually abundant and strong, and the crop of grain good, ripening at a time when fine weather may generally be reckoned upon; and the land is available in good time for a crop of roots, which is usually a good one, owing in some measure to the fact that the nitrates brought to the soil during winter by atmospheric agency are taken up and preserved by the roots of the green crop, without which there would have been a considerable loss of fertility in the soil.

White Wheat, either Rough Chaff or Champion, is undoubtedly the most profitable under good culture in the mild climate of the southern counties; and for less favoured parts those well-known sorts of Red Wheat, Lammas and Golden Drop, are generally considered best; yet we have certainly reason to speak well of Square-head Red Wheat with its stout sturdy straw, fine ears, and large heavy grain.

Winter Beans are worthy of more general attention, thriving as they do in so many kinds of soil. Sown far enough apart for the horse hoe the crop is a profitable and easily managed one. The seed should be sown by the middle of October. Winter Tares are often sown much too early. If sown in September they frequently grow so fast before cold weather sets in that the plants become long and tender, and are liable to suffer so much from extreme cold that the crop becomes worthless. Sown now we get a nice short sturdy growth, which passes well through severe winters, and starts into a quick strong growth in spring.

A stale furrow is frequently recommended for Wheat-sowing, but we prefer to follow the ploughing closely with the sowing, and by using the press drill the grain is buried sufficiently deep to enable the roots of the young plants to lay well hold of the soil, which is an important matter both to prevent the plant becoming frost-drawn and the straw from becoming lodged, which latter most desirable thing it will not always ensure, we regret to say; for after the extraordinary manner in which so much Wheat was levelled to the ground just as though a roller had passed over it this year, it would be nonsensical to say that any method of culture would or could prevent it; but deep-sown seed undoubtedly contributes to the plant laying well hold of the soil. It will be obvious to practical men that our object for following the ploughing closely is to ensure early sowing, the delay of a day often causing an interval of several weeks between the ploughing and sowing, for when the weather once becomes broken at this season of the year it is apt to continue so.

#### WORK ON THE HOME FARM.

*Horse and Hand Labour.*—Ploughing for the autumn seed corn is now the most important work for steam tackle and for horses. When steam power is available the work is got through with economy and dispatch, the horses following the ploughing closely with the drill, the rows being set 10 inches apart, the harrows passing over once after the drill, then come the men with the manure sown broadcast, followed by

the harrows again. The autumn sowing of artificial manure is a quarter cwt. nitrate of potash, three-quarters cwt. nitrate of soda, quarter cwt. steamed bone flour, quarter cwt. superphosphate, quarter cwt. coprolite, or  $1\frac{3}{4}$  cwt. per acre. Procure the manures separately from a reliable firm, and have them mixed at the farm under careful supervision. More money has been squandered upon worthless artificial manures of late years than upon anything else in farming. Of the quantities of seed to be sown per acre opinions, and in fact requirements, are different. In soil in a high state of cultivation every good seed may be expected to germinate and produce a plant, and the lesser quantity will suffice; but in badly cultivated or freshly broken-up soil so much seed is spoilt that there must be a proportionate increase in the quantity sown. Of Wheat sow two to two and a half bushels, Oats four to six bushels, Barley three to four bushels, Beans two to three bushels, and Rye three to four bushels. See that the seed beds are harrowed thoroughly, and finished in a neat and workmanlike manner. On land of a heavy or close texture that is liable to be beaten down to a hard surface by heavy rain, make enough open furrows or drains to carry off surface water quickly; and upon long sloping fields have a few diagonal drains to check an excessive flow of water along any of the open drains. Remember that the plough cannot finish such drains at the ends, where hedges prevent the horses drawing the plough quite through the headlands, and that a man is required to go round each field with a spade to finish them.

The weather has continued so fine that land-cleaning can hardly be said to be at an end till heavy rain sets in; so much good work has been done in this direction that our land is unusually clean, and autumn cleaning is infinitely preferable to spring cleaning. As the different implements of the farm can be spared see that they are well cleaned, oiled, painted, and put into thorough repair. It is by far too common to see tools left in the fields after work is done, or if brought to the buildings just crowded together, and left without any attention being given to cleaning or repairs. One should remember that costly implements represent just so much property entrusted to our care, and it is undoubtedly a point of duty to keep everything in the best order. Repeatedly have we been to farm auction sales at the season of the year, and very seldom indeed have we found the implements in good order.

#### FARM LITERATURE FOR EMIGRANTS.

I AM going to Tasmania with the intention of farming, and should like to take with me a good set of books on the science of agriculture, the dairy, cheese-making, cattle-breeding, &c., &c. If the writer of your "Home Farm" articles would make up a list of such books I should be greatly obliged.—TWENTY-YEARS SUBSCRIBER.

["Dairy Farming," Cassell, Petter, Galpin & Co., Belle Sauvage Yard, Ludgate Hill; "The Book of the Horse," and "The Book of Poultry," by the same firm. These works are the best and latest upon the subjects of which they treat, each of them being thoroughly full and exhaustive. In addition take "Text Book of Veterinary Obstetrics," by George Fleming, F.R.C.V.S.; Ballière, Tindall & Co., King William Street, Strand. "Tropical Agriculture;" Spon, Charing Cross. "The Gardener's and Farmer's Reason Why;" Houlston & Wright, Paternoster Row. A set of the Journals of the Royal Agricultural Society of England, of which there are eighteen volumes; published by John Murray, Albemarle Street. "Agricultural Engineering, Farm Buildings, Motive Powers and Machinery of the Steading, Field Machines, and Implements;" by G. H. Andrews, C.E. "Clay Lands and Loamy Soils;" by Professor Donaldson. "Outlines of Modern Farming;" by R. Scott Burn. "The Drainage of Districts and Lands," by G. Drysdale Dempsey, C.E.; Crosby Lockwood & Co., 7, Stationers' Hall Court, Ludgate Hill, E.C. Two other works may be useful to you—"The Emigrant's Guide to Tasmania and New Zealand," "General Hints to Emigrants," both published by Crosby Lockwood & Co.]

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat.  $51^{\circ} 32' 40''$  N.; Long.  $0^{\circ} 8' 0''$  W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain
1884. September and October.	Barome- ter at 32° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	deg.	In.
Sunday ..... 28	30.477	61.6	57.0	S.E.	57.0	67.1	52.0	96.8	45.8	0.010
Monday ..... 29	30.097	61.9	58.4	Calm	58.0	63.4	55.4	72.5	50.1	0.010
Tuesday ..... 30	30.222	52.1	47.7	N.	57.0	61.8	40.6	81.1	33.6	0.019
Wednesday ... 1	30.082	55.9	54.4	S.W.	56.1	63.4	50.8	104.7	45.2	—
Thursday ... 2	30.107	50.2	47.7	Calm	55.5	61.2	39.9	62.5	33.4	0.025
Friday ..... 3	30.083	54.6	50.2	W.	55.4	62.3	47.4	105.8	41.9	—
Saturday .... 4	30.476	49.8	44.9	N.W.	54.2	60.3	37.8	103.0	29.9	—
	30.156	55.2	51.5		56.2	62.8	46.8	89.5	40.0	0.055

#### REMARKS.

28th.—Fair, but generally cloudy.

29th.—Dull drizzly day.

30th.—Fog most of morning; fine afternoon and evening.

1st.—Fine and bright; not so cold.

2nd.—Foggy early; dull day with showers.

3rd.—Fine, bright, and clear.

4th.—Cold morning, first grass frost; afterwards fine and bright.

The rainfall continues slight, and the barometer high, with almost precisely the average temperature for the time of year.—G. J. SYMONS.





## COMING EVENTS

16	TH	
17	F	
18	S	Sale of Bulbs by Messrs. Protheroe & Morris.
19	SUN	19TH SUNDAY AFTER TRINITY.
20	M	
21	TU	
22	W	Sale of Bulbs by Mr. Stevens, Covent Garden.

### FORCING FRENCH BEANS.

**T**O maintain a supply of this vegetable from the end of October until pods can be gathered from the open ground in summer entails considerable care and labour. The production of Beans during the winter months is not the easiest of the many difficult tasks gardeners have to perform. Some contend that the production of Beans under glass is comparatively easy provided the necessary heat and convenience are at command, and it certainly is not difficult from February until they are ready outside. During that period of the year they will fruit with as much certainty and freedom as they will naturally in the open borders. But the case is very different from November until February, for whether grown in pots or planted out in pits more than six times the number of plants would then be required to keep up the supply. In the depth of winter when the days are short and sunless it is difficult to induce the plants to grow strongly and fruit freely. If fifty pots at that season yield a good dish—and they will do very little more—it requires a large number to supply three or four good dishes every week. The supply of heat may be abundant for the purpose, but this is not so great a difficulty in many gardens as finding space in which to grow and fruit the plants. Four or five hundred pots of Beans require considerably more room than can be properly allowed for the production of one vegetable. Moreover, if French Beans are to be grown successfully they must occupy the best positions in the houses.

During the months indicated they can be grown in pots more successfully than by any other means. They are also more accommodating, as they can be more readily moved, which in many instances proves an advantage where space is limited. They are certainly as well in narrow shallow boxes as in pots provided the boxes are not too long or too heavy to be removed easily and quickly when required. Up to the present time we have found Beans anything but satisfactory when planted out to fruit during December and January.

The latest batch outside, if the necessary precaution has been taken to prolong the supply as long as possible, will be growing on a warm sheltered border protected with frames. To succeed these seed was sown in a heated pit, which is the most convenient place to grow them in for a supply during November. When in pits we usually spread a thin layer of manure upon the base, and upon this about 4 inches of soil composed of that in which Cucumbers and Melons have been grown, with about one-third of fresh loam and one-seventh of decayed manure. The Beans are placed in rows 9 inches apart, and the plants as soon as they show above the soil are thinned to 2 inches apart in the row. It is a great mistake to have the plants crowded thickly, for they draw up weakly, and only a small quantity of fruit is produced in comparison with those that have room to grow sturdily and branch naturally. More failures occur in forcing Beans during the winter months through crowding than from any other cause.

If the soil at sowing time is moist no water should be

given until the seed has germinated and the plants are showing above the soil, when they should never be allowed to suffer by an insufficient supply, neither should the soil during the winter be kept too wet. For the first supply under glass in autumn many cultivators sow early in pots or boxes and place them outside until the nights are cold and they are compelled to house them. This has been tried here many times, but never successfully, for the plants have not started freely after they were housed. It is a very much better practice to defer the sowing for a week later in the season and then grow them from the first in a warm atmosphere. By this means the return from the same number of plants or pots will be more than doubled.

Some cultivators practise a system of pinching, but here no beneficial results have ever been attained by so doing. On the contrary, it is not worth consideration, for the plants are longer before they fruit, and this disadvantage alone is sufficient to condemn the system where time is an object, room limited, and supply expected. Another system of growing Beans in pots is to sow the seed in 3-inch pots, and afterwards transfer the plants into the pots in which they are to fruit. This we practised years ago, and thought until very recently that a method which had no advantages to recommend it had become obsolete; but such is not the case, for it is still the rule in some establishments, and is carried out with as much persistence as if Beans could not be produced by any other means. I do not for a moment doubt that they can be as successfully grown by this method as any other, but here, as in hundreds of gardens at the present day, it is a question of labour, and therefore cannot be tolerated.

The system of half filling the pots with soil when the seed is sown, and then filling them to the rim or nearly so with rich material when the plants are established, is only a waste of labour, in addition to proving disadvantageous to the plants during the winter months. At that period of the year the plants under the most careful treatment are liable to "damp off" without assisting them to do so by placing a mass of soil about their stems. The soil is only wasted when placed in the pots after the plants have become established in half the quantity, for very seldom indeed do the roots come upwards to take possession of it; in fact, never during the winter months when growth is slow.

When grown in pots—those 6 inches in diameter are the best—or in boxes 5 or 6 inches deep and the same width, and about 15 inches in length—which is a very useful and serviceable size for the winter, and large enough to accommodate three rows of plants 3 or 4 inches apart from plant to plant in the row—the pots or boxes should be drained a little more liberally during the winter than is needed when the season has advanced. Those grown in pots to produce fruit after the month of February do not need drainage, for they do quite as well without it. A good layer of manure should be placed at the bottom of either the pots or boxes, and then filled within an inch of the rim with the compost already advised, and then the seed may be sown and covered about half an inch depth with the finest portion of the soil.

There can be no doubt that when the season has well advanced and the days are gradually lengthening that very much the best returns can be obtained with the least possible trouble in watering and other labour by growing them planted out in heated pits. Sowings or plantings can be made in one, two, or three lights at intervals of a week or fortnight, according to the demand, and they give very little trouble afterwards in watering or keeping them free from red spider. Very few plants give the gardener such trouble as Beans during the spring and early summer months, when he is compelled to grow them upon shelves at the back of vineries, Peach, and other houses. Such positions are very unsuitable; they are too dry and not sufficiently airy during bright hot weather, and it is next to an impossibility to keep them free from red spider. More than once I have had to grow them



in these positions from insufficient space elsewhere, and in return have had to sponge the whole of the Vines. All the late crops, or those grown to precede those planted on warm borders, succeed admirably if started by gentle heat such as that afforded by a hotbed made up in cold frames. The last batch to be grown under the protection of glass may be sown on a warm border and covered with a frame until the weather is sufficiently genial for them.

Those grown in pots during the winter need no staking if Osborn's Forcing is the variety grown, which is decidedly the best for winter and early spring. Later in the season, if grown in pots and these have to be removed, staking is necessary, or the stems break and are then worthless. Staking should not be deferred until the plants attain half their size, but must be attended to as soon as they commence making the third leaf. When sown and placed upon a shelf where they are intended to remain and fruit, a few stakes at intervals of a few yards along the row, and a cord run the whole length, is as good as staking and considerably less trouble. When grown planted out in pits no attempt is made at staking.

In the cultivation of Beans in pots and planted out I am inclined to think much unnecessary feeding is practised. During the past year or two I have been experimenting with this matter, and have found that the plants do not succeed so well nor fruit so abundantly when much liquid manure is poured into their pots as when one or two applications of Standen's or any other good artificial manure is applied to the surface. We have found two applications, whether grown in pots or planted out, if the soil is moderately rich when the seed is sown, to be ample for the production of a heavy crop of Beans.

It is important in the cultivation of Beans during the winter that the plants have a light position close to the glass, where a circulation of air can be maintained daily, or whenever the weather is favourable. The most suitable temperature is that ranging from 65° to 70° at night, according to external conditions, with a rise of 5° or 10° by day, the latter from sun heat.—WM. BARDNEY.

#### ORCHARD HOUSES.

"*Tout bon chevalier croit que son armure est plus brillante que l'armure de son adversaire.*" No one can dispute the truth of this old French saying. The letter of "H. W. H." on the subject of orchard houses is apparently intended as a thoroughly calm and judicial opinion, on the whole damning the system with faint praise. But there is perhaps another side. I, too, also have an orchard house—a legacy from the promoter of orchard houses, built according to his original plan in 1855; size, 100 feet by 24 feet, span-roofed. When the house was built, large trees enough to stock it and to bear fruit without delay were in existence. Since the year 1857 the house has given a continuous supply of fruit from July to October of not less than 4000 annually. The trees have suffered, as all trees will, from attacks of the Peach aphid, but not from red spider. The first pest has always been promptly destroyed—not a difficult operation. The second pest has probably not made his appearance from the climate not being agreeable. This orchard house has, like Grape vineries, greenhouses, conservatories, Peach houses, Orange houses, Orchid houses, &c., required the attention of a man. It has also wanted, like the other houses, water and air; and the trees, like others, have wanted change of soil. But, unlike the other houses, from October to March it has required scarcely any attention. Now, what is there in this method of cultivation that presents the extreme difficulty suggested by your correspondent? It is true that the absence of the owner may cause some anxiety on his part as to the caretaker, but does he not share this feeling of anxiety with regard to his dwelling house, his horses, poultry, or any other living plant or animal which he may possess? Neither wealth, talent, nor provision can render any man independent of his fellow creatures. I fail, therefore, to see that this objection is a weighty one.

The objections raised as to the difficulty of knowing the exact process of potting, &c., are incidental to all processes of gardening. Difficulties will arise in Vine-growing, Peach growing, Pear-growing, rearing poultry, bees, stock, and of everything

living; but surely these difficulties are to be overcome. Into the selection of trees I cannot enter, as it does not seem to have anything to do with the system—it is a matter between the purchaser and vendor; but I suppose that no man on starting a stud farm would commence by buying unsound animals. This appeal to Nature seems to me to be a fallacy. If Nature is left to herself our fields would soon produce unprofitable weeds, and our fruit trees would probably be Crabs and Sloes. Nature cannot be followed as a guide. The natural instincts of man are inveighed against by thousands of pulpits at least once a week. The natural instincts of animals are by no means calculated to increase the comfort of man. The natural instincts of the land, if I may use the term, would afford a very lean sustenance to its masters; therefore I think that Nature must be left out. The doleful picture of the state of an untended orchard house may equally be drawn of a neglected farm, a neglected family, a neglected vineyard, greenhouse, or garden; but because these cases exist are we to give up farms, families, or gardens? For my part, during thirty years' experience of orchard houses, I have never seen the evils which your correspondent has painted with so much pathos and power.

The pathetic complaint of the misery endured by the drawers of water may, I think, be applied to many other affairs of life. Do not servants complain of the toil of carrying water to upper rooms, and cannot all this be remedied by the exercise of a little ingenuity? Most places possess a water supply, and what is easier to conduct than water? The theory of your correspondent's gardener in ascribing injury to lightning was ingenious, but as glass is a non-conductor his statement will hardly bear criticism.

The vendors of infant trees are scarcely likely to pay their labourers for unprofitable labour; but this I can say, that the vendors of Orchids will probably reap more profit from the sale of a small houseful of these plants than the vendors of orchard-house plants have received during the years the orchard house has been in existence! Ah, but the profit on the books—sixteen editions of the "Orchard House!" Your correspondent quotes Scripture. I will follow his example. The sorely tried Job, after all his experience, could think of no greater trial than authorship. Witness his heartfelt outburst, "Oh, that mine enemy would write a book!"—T. FRANCIS RIVERS.

#### SHRUB-GROUPING.

HIGH rank among shrubs does the common Holly take throughout the year, its dark glossy green foliage always being ornamental, and although its habit of growth is somewhat rigid, yet it is so symmetrical that the elegant tapering form of a well-grown specimen is unsurpassed in beauty by any other shrub either in a state of nature or art. In winter the rich red berries clustering so thickly upon the branches in charming contrast to the dark-hued foliage, impart such an air of regal beauty to it that we gladly hail it queen of winter shrubs, just as we do the Rhododendron in spring and early summer. It is indigenous to the soil here, and if one word were necessary in proof of its hardiness I could point to a hundred magnificent wild specimens growing out on Ashdown Forest in bleak situations exposed to every wind that blows. Why are not more of it planted? It is undoubtedly true that its growth is somewhat slow in a poor thin soil, but we have only to prepare stations of rich soil for it just as we do for a fruit tree, and it well rewards our care by growth that is positively rampant. In mixed groups for screens or hedges, or as specimens out on turf it is alike useful and ornamental. *Ilex aquifolium flavum* (yellow-berried), *I. a. tortuosum*, Golden Queen, and Silver Queen are the best varieties, and are all worthy of one or many places, according to the size of the shrubbery.

In elevated sheltered situations the *Laurustinus* (*Viburnum Tinus*) is in full bloom when there are hardly any others to be seen, and its pretty white flowers, though small, are by no means inconspicuous. Last winter it was very beautiful, with such a mass of flowers as to quite brighten the shrubbery from Christmas till spring. At an elevation of 400 feet above the sea it passes unscathed through our most severe winters, flowerless or comparatively so, it is true, but a little mild weather soon brings it into bloom. The magnificent specimens of *Viburnum lucidum* which I saw at Tehidy on the north coast of Cornwall a few years ago induced me to plant some. They have grown, it is true, but judging from the result of three years' growth it is doubtful if they will ever approach the size of the Cornish specimens.

Although the *Arbutus* suffers so much from exposure that there is always a risk of losing it, yet if a warm sunny nook can be spared for it by all means have one or more of it, for then it does not suffer so much from a hard frost as it does if exposed to cold cutting blasts from the north-east. Occasionally the sheltered shrubs have a good crop of the pretty pendant crimson berries, which are so useful for



decorative purpose that they are seldom left hanging long upon the branches. I have planted *A. Unedo*, *A. Rollissonii*, *A. rubra*, *A. procera*, and *A. Croomii*, and find the two first fairly vigorous and hardy, but I am doubtful as to the utility of the remainder.

Since the introduction of the male *Aucuba* the grand old variegated *A. japonica* has sprung into the front rank of winter ornamental-berried shrubs. No artificial impregnation is required. A little plant of the green-leaved male variety barely 2 feet high planted near several large female specimens had the pollen of its flowers so well distributed by insects that they were all gay with bright red berry clusters in the following winter. In no shrub is the effect of a rich soil more remarkable than the *Aucuba*. Shoots of wonderful substance and vigour come clothed with foliage quite double the ordinary size, and there is such a depth, richness, and brilliancy of colour in the leaf-marking as to draw exclamations of approval from those whom I have heard declare variegation to be a disease and the reverse of ornamental. Like the Holly, it bears shade, drip, and smoke with impunity; but neither of these valuable shrubs are seen at the best under such trying conditions. They exist and are fairly healthy, and are therefore regarded with a friendly eye and placed altogether above criticism by those who with praiseworthy perseverance strive to surround their town homes with as much of plant life as possible.

*Crataegus Crus-galli*, the Cockspur Thorn, with its large deep scarlet fruit, is so ornamental that one wonders it is not more common both in gardens and woods. It grows slowly in a poor thin soil, but in a deep loam it soon attains the proportions of a small tree with a round yet spreading head, and is then very attractive. The common Hawthorn, too, should be planted in all large shrubberies both for its fragrant flowers and its abundant crop of scarlet "haws" in winter. The great beauty of the berries of the common Guelder Rose has been mentioned. It may be included among winter berry shrubs, for its berries frequently hang till late in the year.

*Cotoneaster Simmonsii* has its long branches laden with bright scarlet berries in winter. It requires careful pruning every winter after the berries fall, or, as is but too often the case, are eaten by the birds. If left unpruned its branches become long, spreading, and thin, imparting a loose ragged appearance to the shrub that is the reverse of ornamental, but with due care pretty compact specimens may soon be had, and they are quite worth having, for they impart much brightness to the shrubbery for a month or two.

For planting near the front of a group *Skimmia japonica* is invaluable. Its large, deep, rich crimson berries come so abundantly that, though a dwarf shrub, it is conspicuous, and is quite our best front rank shrub throughout winter. *S. oblata* is more vigorous and compact in its habit of growth than *japonica*, forming nice little specimens of a handsome globular outline. Both answer perfectly in our poor thin silicious soil, growing with an amount of freedom and vigour as would induce one to suppose they were in rich soil. Both the old and new varieties of *Pernettya* are useful marginal shrubs, and the large handsome berries of the new kinds should bring them quickly into favour.

I have heard it laid down by no mean authority that Pampas Grass and Reeds should not be planted among shrubs, but should either be out upon the turf singly or upon slopes and in dells. Without attempting to criticise this dictum, I am bound to point to the bright cheerful effect of the silvery plumes of the Pampas Grass among the shrubs late in autumn and onwards into winter. How much we should miss them, and how comparatively dull-looking the shrubbery would be without them. I have tried the Pampas Grass in various situations, and have good specimens on turf, on gravel, and in shrubbery borders; but of several planted in a valley only one poor plant is alive. It must be owned that the soil of the valley is cold and wet, and early and late frosts are prevalent. Under such adverse conditions this noble Grass will not thrive.

*Arundo conspicua*, the New Zealand Reed, had its plumes fully developed in July this year, but they are not so fine as usual, owing probably to drought. *Arundo donax* has its plumes nearly full grown now, and the Pampas Grass gives promise of soon being in full beauty once more. *Phormium tenax Veitchii* has made some strong growth this summer; so, too, has *Cordyline indivisa*; and *Eucalyptus globulus* has made a wonderful growth of about 7 feet this summer.—EDWARD LUCKHURST.

(To be continued.)

### LARGE ONIONS.

It is a common desire to have Onions as large as possible. I never knew anybody who cultivated them that was not anxious to excel all their previous attainments in size. If every one of the bulbs could be grown to measure 18 inches in circumference or more the cultivator's delight would be complete; but I think his joy would end there, as, speaking from experience dating back many years, I must say that I invariably find large Onions the most worthless in the kitchen, and they are certainly of no use as long keepers. This latter disqualification is one of their worst

points, and it ought to stand at the top of the list in considering how best to keep up the all-important supply of Onions. In July and August and until November the large ones may not fail, but in January and February and on to Easter or after that of what use are they? They split and grow long before their time, and not unfrequently they perish altogether. A week or two ago we had a fine lot of large Onions—bulbs running from 1 lb to 1½ lb. each, and we were rather proud of them at one time; but this was before we observed that they were becoming soft and useless: then we took some barrowloads to the dunghill and gave the remainder away for immediate use. Had we been depending on these for our winter and spring supplies I fear we should not dare look the cook in the face for six months to come, and it would be to the advantage of all to study to produce Onions of the best keeping qualities. These, I find, are small hard bulbs from 4 to 6 ozs. in weight each, and they are produced on firm moderately rich soil.—A KITCHEN GARDENER.

### THOUGHTS ON CURRENT TOPICS.

"SECOND thoughts are best" is a time-honoured axiom, and my "second thoughts" are that "T. W. G." on page 303 meant what he said in his eulogistic remarks on my brief notes on liquid manure (page 282), notwithstanding the pleasantly racy style of his communication, and I will ask him to consider me as bowing my acknowledgements. Although there is no necessity for "gold letters," I am positive if persons would think more before they act in giving liquid manure to unhealthy plants, or giving it when the soil is dry, there would be less waste of material and less injury done than is the case at present by unreflecting cultivators.

My object in recording my thoughts on such subjects as they happen to rest in perusing the pages of the Journal, is not to evoke flattery. If that were so I should append my name; nor is it to search for faults and expose them in a manner calculated to weaken the authority of writers who are probably better men than myself; my desire is to stimulate to further thought, and to drop a hint by the way that may perchance be useful. If my thoughts happen to run in a different channel from those of writers who called them into action, I shall not, I trust, seek to glorify myself at their expense, knowing that if I do discriminating readers will not be slow to detect my weakness, and I shall simply get laughed at for my pains.

NOR am I so mentally constituted as to presume to express my thoughts on the productions of others, and at the same to object to have my own opinions dissected in the frankest possible manner, provided it be done with an honest effort to correct an error for the general benefit, or to render clear what may be more or less obscure. When conducted on these lines, and with that object, I rather invite than resent criticism, which will be welcomed from whomsoever it comes, and shall have the respect it merits; but mere word-snatching I will not indulge in, that is exercise for school boys, of which I had my little share nearly half a century ago.

I HAVE been led into this train of thought by the remarks of a correspondent, who not inappropriately signs himself a "Non-Believer" on page 303, and who almost intimates that I cannot tolerate his "doubting my teachings," and suggesting that the rule I ventured to lay down is not "true." I can tolerate this very comfortably, yet let me say that not one word that I have written above is directed to anything in that short article; but I have been about long enough to have observed that disputations, small in their beginnings, have not unfrequently degenerated into unseemly personalities, which have been by disinterested and impartial readers unanimously condemned, and I therefore take this opportunity of stating that nothing shall tempt me to encourage in the slightest degree anything of the nature indicated. As a practical method of admitting that "Non-Believer" is animated by similar feelings, I will give his letter my best attention, and devote to it my "whole thought" this week, for the subject of it is of general interest.

In the first place your correspondent disputes the soundness of the principle which I embodied in the words, "Liquid manure should never be given when the soil is dry, even if the plants need extra support." To that statement I shall adhere, and for the reasons previously adduced, until its inaccuracy is proved, and I venture to think that very different arguments will be needed to demolish it than the rather topsy-turvy ones in the letter under notice.

OPPOSITION to my views is founded on the alleged practice of Mid-Lothian farmers "waiting for a shower or a wet day before they apply nitrate of soda, &c., to their crops." It is quite true they do this, and their action is wise; but then—and this is where the topsy-turvyism comes in—a "Non-Believer" does exactly the reverse. They wait for rain—and glad enough they often have been if the shower extends to a "rainy day"—before applying the manure; he has no occasion to wait for rain, for he has water laid on and can apply it through hose, yet he lets the soil get dry and the crops suffer, then gives artificial manure to this dry soil and washes it in through the hose; he also gives liquid manure, "washing it in" similarly.

It is passing strange to me that the soil should be allowed to become so dry as to cause the crops to suffer to the extent indicated, when by simply turning a tap the drought and exhaustion could be prevented. I



really cannot think what a person can be thinking about to deliberately act in that manner. I presume there must be some good reason for it, but at present I quite fail to perceive it, and the practice seems tantamount to allowing plants in pots to droop and wither by want of water, a practice which I am sure every competent gardener condemns.

BUT to the liquid manure. To give it to plants in the state just alluded to is philosophically, practically, and economically wrong. To give it in an insufficient quantity to thoroughly moisten the soil is positively wasteful, for it runs out almost as fast as it is poured in and is lost. To give it until the shrunken soil swells and regains its retentive and absorbent character is injurious, for the thirsty plants in their ravenous drink take an excess of the salts of the manure, and an excess of anything that is good when rightly used is admittedly injurious.

DISSOLVE a quantity of arsenic at the rate of five grains to each gallon of water. A horse that is not thirsty will not drink more than a gallon, and only gets the five grains, but let him be famishing for water, he will drink five gallons if allowed, and thus takes, instead of five grains of the arsenic, twenty-five grains. The light dose may not be injurious, it may indeed be beneficial, but the larger dose will be dangerous, and may be fatal. It is to be understood that this is merely illustrative. I am not a horse doctor, and for aught I know to the contrary the smaller dose of the poison may be excessive. That has nothing whatever to do with the real subject under discussion, but the simile shows in what manner liquid manure acts injuriously to plants in dry soil when they drink their fill of the stimulant. When my critic proves that the horse can drink water with arsenic in solution and reject the poison, or if he can demonstrate that the horse's master who drinks two cups of tea does not imbibe more theine than in drinking one, I will admit the fallacy of my argument, and not before, because plants have no more power to imbibe water and reject what is held in solution in it than has the cultivator of these plants. That is my case theoretically; now, practically.

PERMIT the soil in a pot in which a Chrysanthemum, say, is growing, to get dry—not half dry, but really dry, so that the soil shrinks and loses its absorbent property, while the leaves wither and the shoots bow down their heads from exhaustion. Dissolve an ounce of guano in a gallon of water, pour some of this into the pot; it will rush through quickly; collect it; what is it? It is guano water still. To use liquid manure in that way, then, I assert, is absolute waste, because if given to plants in the ground it amounts to pouring the liquid into the drains, for it rushes away from the roots, flowing past them, the plants getting about as much of it as a thirsty old toper would of a pint of beer poured on his head in his catching that portion that trickled down his face in passing his mouth. It would be tantalising to the toper, no doubt, and he would think the beer wasted; so it is in giving liquid manure to plants in quite dry soil.

NOW to the danger test of excess. Continue pouring the guano into the Chrysanthemum pot until the soil becomes absorbent; never mind how much drains away and is wasted (if not caught), it will in time escape slowly, not to say tediously, and the excess that the soil cannot hold will be clear, the virtues of the liquid will be retained in the earth, the plant will have absorbed a great deal more than is good for it, not of water, so much as what was in it, and if it does not die it will not thrive.

LET anyone try the experiment suggested fairly, fully, and honestly, as I have done years ago, not with the object of refuting the opinions of anyone, but of ascertaining the truth, and I assert my belief in the impossibility of his winning even a third prize at any good Chrysanthemum show this autumn in any class in which there are six competitors, with either his plants or the blooms he cuts from them. If any man accomplishes this, to me, impossible achievement, and will have the goodness to let me know, I will, if need be, travel 300 miles to see the wonderful products, if only with the object of gathering food for further thought.

THE application of liquid manure in the most economical and effectual manner does not appear to me to be sufficiently understood. If a man of the mental calibre of "Non-Believer" has yet to learn, what about others whom he would teach? It is for the guidance of those "others," rather than the instruction of him, that I jot down these thoughts, for I cannot resist saying that a sort of shadowy suspicion haunts me that my critic was not very serious in his remarks, but that his object was to "draw me out." If that is so, he has succeeded; but he has yet to prove me wrong, and if he really intends to do so the opportunity is afforded him: if he succeeds, I have the consolation of thinking I shall learn something, while others will benefit too; and herein lies the advantage of "frank and friendly" discussion, conducted for the purpose, not of showing over the downfall of an opponent, but of "eliciting truth."

WE are on the verge of an important subject—that is, of increasing the fertility of the soil at the least possible outlay. When I think of the tons of liquid manure and dry artificial fertilisers that have been wasted, I am not surprised at the intelligent and scientific Mid-Lothian farmers "waiting for rain" before sowing their money, but I am at present confident, whatever the results may have been in the case cited last week, of applying manure, whether in a dry or liquid form, to parched ground and watering in, that they would have been infinitely greater, having

regard to the returns from capital invested, if the ground had been well watered first and the stimulants given afterwards, then lightly "washed in." I say we are on the "verge" of a great subject, for if the practical and scientific experience of your correspondent on Scottish farming extends over a much longer period than my own, and if he has had very much greater facilities for sharing in experiments conducted by a scientific and practical "Laird of Mid-Lothian," something interesting ought to be forthcoming. Like Goethe was once, I am now—longing for "more light."

A THINKER.

#### COMMENTS ON THE PAST ROSE SEASON.

TILL I saw the letter of "Y. B. A. Z." last week I had not intended to answer "T. W. G.'s" criticism upon my suggestion that Rose plants the year after budding should be called "yearlings" instead of "maidens." The question seemed to me to be rather a matter of taste, and hardly suitable for discussion.

I will, however, now state that, though I have had for many years what "T. A. B." calls "an acute form of Rose mania," I have hitherto been able to control my feelings sufficiently to allow me to call my favourite flowers in a general way just Roses—not Empress, Queens, or Royal Princesses, or anything of that sort.

In short, I am as fond of poetry and of Roses as anyone; but practical, not poetical, culture will grow the best Roses, and practical names will suit practical treatment best.

As a county player of some fifteen years' standing may I inform "T. W. G." that he is mistaken in supposing that "in cricket an 'over' is called a 'maiden' when no fault can be found with it; when, in fact, it is too good for everything?" That seems to me to involve a misapprehension of the meaning of the word "maiden." The worst over ever bowled may be a maiden, if the batsman is duffer enough.

I think, too, that if "T. W. G.'s" inquires he will find "maiden" is as common a "stud-farm appellation" as "yearling." It is used in that case as at cricket.

But I did not hope to convince many. Those who have not found incongruity and inconvenience, as I have, in calling yearling Roses maidens, will continue to use that term. I will not quarrel with them any more.

"Y. B. A. Z." is quite right about Madame Lacharme. If the plant is doing really well, as soon as the flower buds surrounding the central one are taken away, every bud will break the whole way down the shoot, form considerable growth, and undoubtedly rob the central bloom to a considerable extent. On this account I make it a rule to examine Madame Lacharme carefully at least once a week during the growing season, and pinch out all these growths. I think it would be a good plan to disbud them all carefully at first with a knife, the second blooms are rarely valuable. I also, at the same time, gradually thin out the weakest of the actual shoots; for however closely you may prune Madame Lacharme it makes a very thick compact head, and much good may be done by letting in more light and air. By taking these pains I have had some very good Madame Lacharmes; just before it gets dark on a July evening it is wonderful how beautifully that row shines out.

Nevertheless, I yet further agree with "Y. B. A. Z." (how comfortable it is to agree, and what an extremely intelligent Rose-grower he must think I am!) in that I have also had my doubts as to the advisability of always disbudding and at all stages. I pick out the buds as soon as they can be moved—i.e., when no bigger than peas. Even in that case you may see great "blobs" of sap coming from the wounds, sometimes for days after, and I have no doubt there is a check to the whole shoot for a short time. If the disbudding be neglected till the central bud is nearly in bloom, I think it is advisable to "let well alone," unless the supernumerary buds are so numerous and compact as to hinder the development of the central bloom.

I think it was in 1882 that Mr. Cant's silver medal Souvenir d'Elise at South Kensington had not been disbudded, for it had one or two long-legged buds, but was still a wonder. It is not necessary, however, for several months yet to reopen the question of the danger of bleeding in Roses.—A. F. M.

#### TAKING OFF THE SHADING.

ALL tender-leaved plants grown under glass during the hot sunny summer weather are benefited by being shaded. Some, as Ferns, may require a dense covering, while others which have to mature their growth for fruiting or flowering at a subsequent period may, as a rule, be grown successfully with much less shading. In autumn, however, this often proves injurious, especially if left on until now, as it makes the growths weak and incapable of bearing any hardships throughout the winter. We have no doubt about the advantages of shade in summer, but we thoroughly approve of taking it off in good time in autumn and letting the plants have the benefit of the sunshine to mature their growths for winter. It is very seldom that any mistake occurs where the shading consists of canvas which can be rolled down or up as the sun comes or goes, and is kept up altogether on dull days; but all shadings which have to be put on with a brush like paint, become dangerous in autumn. In wet seasons they may be washed off by degrees until little or none of them remain by September or October, but in a season like the present I doubt much of the shading brushed on in spring will still remain, and it is this which will prove injurious. There is no plant under glass at the present time requiring shading now, and every particle of it should be removed as soon as possible. All roofs and ends of houses should be brushed over



and washed clean, and let the sun have full play everywhere. At first some of the plants may droop when the sun is shining on them, but they will not be scorched. It will do them no harm, and they will soon gain a hardy robust character which they would never have attained under late autumn shading.—M. M.

#### NEW EARLY CHRYSANTHEMUMS.

EARLY-FLOWERING Chrysanthemums rank amongst the most beautiful of border flowers in August, September, and October, and there is no

and symmetrical. It appears to be quite distinct and equally adapted for garden adornment and vase-decoration.

#### HOT WEATHER AND FRUIT TREES.

"AN Old Gardener" discovers (page 324) "that I did not mean that immature wood is more fatal to fruit-production than is inclement weather with frost in spring," therefore "there is little difference between us," which, with his other deductions, shows his peculiarity of reasoning. I shall pass the first three paragraphs of your correspondent's



Fig. 58.—CHRYSANTHEMUMS SALTER'S EARLY BLUSH AND FIBERTA.

wonder that attention is being given to the raising of new varieties. The two now figured—the large one, Salter's Early Blush, and the small one, Fiberta—appear to be well worth the attention of cultivators. The flowers were sent to us by Mr. Piercy of Forest Hill, and we selected them as the best varieties from a large bouquet. Salter's Early Blush is one of the most beautiful Chrysanthemums we have seen. The flowers are of medium size with neat overlapping florets of a pleasing satiny pink colour, very far removed from "blush." Judging by the spray sent the variety must also be free and floriferous, and we think it very likely to become popular in gardens. Mr. Piercy informs us that it "came into bloom on June 28th, and will bloom twice in one season; the flowers came off a plant struck from a cutting in May of the present year." Fiberta is a small yellow flower as "bright as a button," full, compact,

communication at page 324, which contain nothing demanding attention. In the fourth paragraph we read, "Many starved and stunted orchard trees are barren this year, and healthy cultivated trees fruitful," because "the blossom of enfeebled trees was abortive, of healthy trees fertile." On page 289 we are pointed to "leafless fruit trees in an orchard" as indicative of sterility, whilst "trees in the garden are still green," prognosticating fertility. I thought "frost" was the cause of the failure of the fruit crops this year and during the past season, now we are asked to believe the blossoms were "abortive." This seems to me one of those things that "no feller can understand."

The trees of "H., Notts," which bear with unchanging regularity, "(bar the frosts) every alternate year," bearing out "An Old Gardener's" statement that trees in orchards are barren from the blossoms being abortive, whilst cultivated trees are fertile this year," is a queer way of seeking a parallel. Exhaustion from overcrop is quite another thing—viz., the energies of the trees are so exhausted in the maturation of the



seed of the fruit of the full year, as to preclude the formation of growth and fruit buds for next year's crop, a year's recuperative growth is essential to restore them to fertility. That this is parallel with trees in orchards having abortive blossoms I deny *in toto*, especially as facts point to the contrary—grossness is characteristic of barrenness; and feebleness, not ill health, is ever indicative of fruitfulness. A fruit tree must have its grossness considerably diminished before it will make so much as an effort at fruit-production. I have seen more barrenness as resulting from over-luxuriance of trees in gardens than of trees in orchards through enfeeblement, that consequent upon age and neglect excepted.

"Intelligent gardeners grow the finest fruit that wins prizes." What has that to do with fruit-production? How much of such fruit feed and refresh the masses? What produces nine-tenths of the marketable fruit of the United Kingdom? Gardens! I trow not, but orchards; and if "men" cannot do better than that, the sooner they give place (as they are fast doing) to "sheep" the better. What is the value of prize fruit in relation to that which supplies the wants of more than 30,000,000 of people that inhabit these islands? What of the number of prize fruits grown on a tree as compared with those on one from which the supplies are drawn for everyday consumption, even in gardens, not to mention those of orchards? An exhibition comes but once a year, and as to the Apple Congress, who knows when there will be another? Apples and Pears are grown in walled gardens, or from trees trained against walls, if not produced in glass structures, which "men" scruple not to exhibit as hardy fruit. Let "An Old Gardener" be just before he is generous, and tell us if prize fruit afford as good interest on the capital invested as that of market fruit must do if it be profitable.

I am thankful that "An Old Gardener" finds consolation with what I supplied him, and I am pleased beyond measure to know it has such a good effect. I thought the extracts I found for him in the files of the *Journal of Horticulture* would afford him particular delectation, and keep him from being "overwhelmed," especially as he is such an expert in making deductions, and so adroit at turning them to his own purposes.

Notwithstanding what has been said, I shall proceed on the old lines, aiming at ripe wood and well-developed buds, and not be scared from the object by prospective "frost" any more than a farmer will refuse Wheat this autumn for fear of wet weather next harvest time preventing his garnering the crop.—G. ABBEY.

## CACTACEOUS PLANTS.

(Continued from page 334.)

### EPIPHYLLUM, Pfeiffer.

No members of the Cactus family are so extensively grown or so generally useful as the Epiphyllums, and yet it may be safely asserted that their merits are not half so well known as they deserve, or as might be expected by those who have satisfactorily proved their value. There can be no question that Epiphyllums are thoroughly useful garden plants, and wherever large numbers of plants have to be grown for decorative purposes they are almost indispensable. For the smallest collections they are equally appreciated, and though not quite so well adapted for windows or rooms as some of the Phyllocactuses, they can be grown and flowered in such positions, and therefore furnish an important addition to what may be termed home plants. They possess several qualities, each of which alone would be amply sufficient to render them worthy of recommendation, but the principal of these is their period of flowering. This extends from November to February, and during these four months an unbroken succession of flowers can be ensured by having a few batches of plants, which can be readily brought on to follow the earliest-flowered. The same plants will, however, often continue attractive for more than a month, producing abundance of their bright beautiful flowers throughout the whole of the time, at a season when flowers are scarcest and the demand greatest. Another good trait in their character is their free and quick growth, which enables cultivators to obtain plants of good size in a short time. They are readily propagated, most profuse and constant in flowering, their blooms are marked by a number of extremely rich and bright shades of colour, and the plants can be employed in a variety of ways—in pots as dwarfs, standards, or pyramids; planted out for training on the roof of stoves, and in baskets for the decoration of conservatories. It is not surprising, therefore, that Epiphyllums are gradually advancing from the comparative obscurity into which they had fallen, and one of the surest indications of this increasing popularity is afforded by that great emporium of plants, Covent Garden Market. There small useful specimen Epiphyllums may now be frequently seen side by side with the ordinary market plants, and one grower in the neighbourhood of London is paying special attention to them for supplying the market. The majority of the plants raised for this purpose are in 48-size pots, and are grafted on Pereskia stocks 9 inches or a foot in height, forming in two or three years compact handsome specimens. These usually make their appearance on the stalls during November and December, and are sold at prices ranging between 1s. 6d. and 2s. 6d., according to the size of the plant and the quality of the variety. Comparatively few different forms are sent to market; two or three of the richest-coloured and most floriferous are the favourites, and with these the demands are supplied.

CULTURE.—It may be premised that there is no especial difficulty in growing Epiphyllums fairly well, as they will do that with very ordinary treatment; but to have them in the best condition, their floral beauty fully developed, attention to a few details is requisite. These are, however, so simple that no one need be deterred from growing the plants by

any fear of non-success. As for Phyllocactuses, the basis of the compost employed should be light, turfy, and preferably somewhat sandy loam, that which has been in stack for a few months being the most suitable. Respecting this there is no difference of opinion, but with regard to the other ingredients several different practices are followed. Some cultivators do not employ any manure in the soil, simply giving a moderate proportion of crocks, broken charcoal, lime rubbish, or sand with the loam, preferring to apply the manure as a liquid or in the form of top-dressings. Others, again, advocate incorporating various manures in the compost at first prepared, using and recommending for this purpose cow, horse, sheep, deer, and fowl manure, each grower fully believing in the especial efficacy of his favourite stimulant. A third, and according to my experience the best system, is to employ a small proportion of manure, say one-fourth of the bulk of soil, and to give what further assistance may be needed either in a liquid state or as a top-dressing. The advantage of this method is, that while some encouragement is given to the roots, a stagnant and unwholesome condition of the soil is avoided until the plants are strong enough to assimilate their food rapidly, and then it can be supplied in exact proportion to their wants. The *Pereskia aculeata*, upon which Epiphyllums are usually grafted, is a strong-rooting and quick-growing plant, absorbing moisture and nutriment from the soil very rapidly; therefore when it is bearing a large head of Epiphyllum the assistance afforded should be of a most liberal character, and it is only by such means that the finest and most abundant flowers can be produced. There is, then, little fear of giving too much manurial aid to these plants, and, as an example of this, I am informed that many years ago some exceedingly fine specimen Epiphyllums were grown at Scawby Hall, Brigg, Lincolnshire, potted in a compost of equal parts good loam and old Mushroom-bed manure. These attained the age of twenty years, and annually bore an enormous number of flowers—a sufficient proof that the treatment suited them; but they were in experienced hands, and the smaller proportion of manure advocated above is, to say the least, safer. It matters very little what kind of manure is employed, but I give the preference to that from the cowyard, using it in a dry state and finely broken for mixing in the soil, while as a liquid it is equally beneficial. Clay's Fertiliser, either in the compost or mixed with loam as a top-dressing, is also a valuable stimulant, and manure collected in fowl roosts or runs suits Epiphyllums admirably.

Some importance is attached by a few growers to the due employment of lime rubbish or charcoal in the soil, but this is by no means so essential as is supposed, though a few nodules of charcoal or finely broken bricks assist in keeping the drainage in proper condition. During the growing and flowering periods abundance of water is necessary, and in consequence every care must be exercised, especially for large specimens, to insure that the pots are thoroughly drained. This can be easily effected in the usual way with potsherds, or crocks as they are commonly termed, and then there will be no danger of supplying water liberally.

After flowering less moisture will be required, and the soil may be allowed to become partially dry for a few weeks, only giving a little water to prevent the branches being rendered flaccid. Then as growth is resumed the water supply may be increased, and with occasional syringings progress will be rapid in a suitable temperature. This should range from 55° to 65°, or ten degrees higher with sun heat, and when the plants flower they may be arranged in an ordinary greenhouse or conservatory. Much depends upon a thorough maturation of the growth, and therefore the plants must at all times have a position fully exposed to the sun, as they never need shading, and with proper attention to ventilation to avoid rendering the growth weak, good results may be confidently expected.

PROPAGATION.—Epiphyllums are readily increased by cuttings grafting, and seeds, the two former methods being most frequently practised, the other being resorted to chiefly with the object of producing new varieties. Cuttings of two, three, or more joints of the branches strike readily at any season of the year if inserted in pots of sandy soil, kept rather dry, and placed in a warm house or frame. These plants upon their own roots are very useful for small pots to be employed as a marginal row on the conservatory stages; they can also be used for filling baskets, and in several other similar ways. The most important method of increase is, however, that by grafting, as the majority of the larger plants are worked either on the *Pereskia* or *Cereus speciosissimus* stocks, and by that means the natural drooping habit of the Epiphyllum is more gracefully and pleasingly displayed. Considerable difference of opinion exists with regard to the respective merits of the two stocks named; but the balance of evidence is in favour of the *Pereskia* as a long-lasting and free-growing support. The principal points advanced on behalf of the *Cereus* is that its stems are stouter and stronger than the *Pereskia*, and that Epiphyllums worked on it endure a much lower temperature than those on the accepted stock. Against this must be taken the fact that the scion does not grow so freely or so quickly upon the *Cereus* as it does upon the *Pereskia*, for the absorptive powers of the latter seem to be much greater, and in respect to endurance no better evidence of the merits of the *Pereskia* is required than is afforded by the fact that there are many large specimen Epiphyllums upon that stock fully a quarter of a century old, and still showing no signs of decrepitude.

The *Pereskia* is propagated by cuttings 5 or 6 inches long, which form roots quickly in an ordinary stove or propagating frame. When struck they must be potted singly in 60-size pots and grown on quickly, transferring the plants into 48-pots when the smaller size is filled with roots. When they have reached a sufficient height to permit the stem being cut back to well-developed wood, a foot to 18 inches above the rim of the pot, they may be prepared for grafting. Cut the stems straight across at the



desired height, then making a downward incision at the top, either removing a small wedge-shaped portion or simply splitting it, the former being preferable. The scion, which may be 3 to 6 inches long, either a simple stem or branched, should have the base pared to a wedge shape, very gradually sloping, and then inserted in the stock. It may be secured either with a small thorn thrust through the stock and scion, or by binding a little moss round the juncture with matting. The *Pereskia* stem should be tied to a small stick to prevent damage to the scion, and in a few weeks a union will be effected, when the moss and ties can be removed. The same system is adopted with taller standard specimens, say from 2 to 3 feet high; but when an extra large head is desired, two or three scions are inserted at the side of the stock in addition to that at the top, simply by making a downward sloping incision, in which the end of the scion is placed as in the first-mentioned mode. For pyramid specimens the practice is similar, except that scions must be inserted at intervals of 9 to 12 inches from the base to the summit of the stock, regulating them so that the specimen will have a uniform appearance. As to the time when grafting should be performed it matters little, as with care a satisfactory union can be effected at any season; the spring is, however, the most preferable, and it is a good plan to keep the stocks rather dry for a few days before the operation is commenced.

**SPECIMEN PLANTS.**—When grown to a large size *Epiphyllums* make magnificent specimens either as standards or pyramids, and their value cannot be too highly estimated. Probably the finest examples of the kind in the country are those at Orwell Park, near Ipswich, the residence of George Tomline, Esq., where these plants have for some years been admirably grown by Mr. J. Wallis. During the winter months—namely, from November until February, these produce a never-failing display of brilliant flowers, and have awakened the admiration and surprise of many horticulturists. Writing in reference to his mode of culture, Mr. Wallis has favoured me with the following remarks, which possess especial value as the result of such successful practice:—

"The *Epiphyllums* here are grown for flowering in the conservatory, and are usually gay from the first week in November till February. During the remainder of the year they occupy a three-quarter span-roof house in which an intermediate temperature is maintained. All our *Epiphyllums* are grafted on the *Pereskia aculeata*. We graft a few at intervals of two or three years, so if any of the older plants become sickly or shabby they are thrown away and the younger ones grown on. Some of the stocks are worked to form pyramids and some to make standards. The height of the pyramids is 6 feet, and to form these six or eight scions are inserted. The heads of the standards are on stems ranging in height from 4 feet 6 inches down to 18 inches. To form these heads only one scion is put on the stock. Some of our oldest pyramids are 4 to 5 feet through at the base, and the heads of standards quite as much. When in bloom some of the heads of the taller standards droop almost to the pots. Much larger dimensions could easily be obtained, but we have to keep our plants of a manageable size on account of moving them to and from the conservatory. The pyramids occupy No. 2 and No. 4-sized pots, the standards 8's and 12's. Each plant is secured to a strong iron stake, with three prongs fitting the inside of the pot, so as to stand firm and erect, and the *Epiphyllum* is kept well supported to the stakes by ties of stout wire. After the plants are well established they are easily managed, and go many years without repotting; but of course we top-dress annually, previously removing as much of the old soil as will come away easily. We grow these plants with plenty of ventilation on all favourable occasions, and they are never shaded. During active growth water is given freely, occasionally liquid manure, they are also syringed daily. After the season's growth is completed water is given more sparingly and syringing is dispensed with."

Another excellent mode of growing *Epiphyllums* is in baskets, which have a most imposing appearance when well filled and the plants are in flower. Some care is needed in preparing these, but the task is not a difficult one, and the result amply repays for the labour bestowed upon it. The plants employed should be either raised from cuttings or be grafted upon *Pereskia* stocks 3 or 4 inches long, but the former are preferable, as the others are very liable to be injured. The baskets should be of semi-globular form, constructed of ordinary stout wire, strong and plain in design. In preparing the baskets for the plants a thick layer of moss must be placed next to the wire, then the *Epiphyllums* may be turned out of their pots and inverted, the stems being drawn through the moss and the meshes of the wires. This must be continued until the basket is sufficiently clothed, employing a little light soil to render the plants firm; then above these to fill the upper part larger specimens may be planted to impart a general finish. When covered with flowers these baskets will be superb ornaments for any house, as is proved by the beautiful examples at Chatsworth, where they constitute a feature of great interest during the winter. The cultural requirements of such specimens are the same as for others, but a slight additional attention is necessary to insure the whole of the soil being thoroughly moistened. To keep the baskets uniform any excessively long shoots can be taken off at a convenient joint, and this will induce a branching habit, which will furnish the surface with growths quickly. It will be evident that the baskets must be suspended sufficiently high to permit the whole under surface being readily seen.

Far from the least effective system of utilising *Epiphyllums* is the following, which is nowhere practised so successfully as at Old Sneyd Park, Bristol, the residence of F. Tagart, Esq. This consists in growing the *Pereskias* to a height of 12 feet or more, training the stems up the back wall or up the roof of the house, and grafting them at intervals of a foot with *Epiphyllums*. These in time form good heads, and have a

very handsome appearance, clothing the roof with their richly tinted flowers. The gardener, Mr. E. Miller, has the back wall of the stove covered with a wire netting, packed with moss, and planted with Ferns, Begonias, &c.; behind this the stems of *Pereskia* are taken from the border at the base, where they are planted, up to the roof, and they are then trained over the path. This portion of the stems, which are about a yard apart, were grafted thickly with *Epiphyllums* of different varieties about twelve years ago, and have formed dense pendulous heads 2 to 3 feet in diameter, which during the concluding months of the year form quite a canopy of flowers. This method might be advantageously employed much more extensively, and the roofs of many houses could by such means be rendered far more pleasing than they usually are, particularly at the season when *Epiphyllums* flower.

#### SPECIES AND VARIETIES.

As a genus *Epiphyllum* is distinguished by the following characters. The narrow numerous petals and sepals of similar colour are in two of the three species known—viz., *E. truncatum* and *E. Altensteini*, arranged in a two-lipped manner—that is, on one side of the flower the petals are straight, and on the other they are bent back. In *E. Russellianum*, however, the petals grow equally as in other *Cactaceæ*, but are nearly straight with the flower tube, which is formed by the combination of the inner petals at the base. The stems are slender, succulent, leafless, and jointed, the branches somewhat flattened, from 2 to 3 inches long and 1 to 2 broad, bearing the flowers at their points and not on the margin as in *Phyllocactus*. They are natives of Brazil, where they are chiefly found as epiphytes growing upon the branches of trees, their slender stems attaining the length of 3 or 4 feet.

*E. TRUNCATUM*, Pfeiffer.—This is the principal species, and has been cultivated in English gardens for about sixty years, having been introduced from Brazil early in the present century, though it is said to have been known in continental gardens many years before. It is especially abundant on the Organ Mountains, where also its relative *E. Russellianum* is found, but the former does not grow at so great an elevation as the latter, *E. truncatum* being rarely found above 4000 feet. The original form had dark crimson flowers with a white throat, but several varieties were subsequently imported, amongst the earliest being one of a uniform rich crimson hue, which was figured in the "Botanical Magazine" in 1825, and later still—i.e., about 1840, the variety *violaceum*, with a distinct tinge of violet, was introduced by Messrs. Rollisson & Sons of Tooting. The principal variations now in cultivation are seedlings raised from *E. truncatum* or from crosses between that species and *E. Russellianum*, which have greatly increased the value of the plants in a horticultural point of view, as the colours have been improved and multiplied considerably. One of the most successful raisers of *Epiphyllums* in recent years was Mr. W. Buckley of Tooting, who succeeded in obtaining some very distinct and beautiful hybrids between the species already named. These have not been surpassed, and the list as given by the raiser in the "Florist and Pomologist" (page 14, January, 1868) is well worth reproduction here:—

"The varieties of *E. Russellianum* were *E. R. rubrum*\*, flower double the size of *E. Russellianum*, and of a bright rosy red; *E. R. cupreum*\*, not so large as the last, of a coppery tinge, slightly suffused with purple; *E. R. superbum*\*, in which the purple of *E. Russellianum* and the reddish tinge of *E. truncatum* are beautifully blended. Added to these, a very pretty hybrid of the *Russellianum* section was raised by Mr. Snow, gardener to the Earl De Grey, called *E. R. Snowii*. The following are the best and most showy varieties of the *E. truncatum* section:—*E. truncatum majus*\*, larger than the species, and of a deep rose colour; *albo-lateritium*\*, petals silky white, margined with brick red; *amabile*, white and purple; *aurantiacum*, reddish orange; *bicolor*, white and rose-edged; *coccineum*\*, deep scarlet; *cruentum*\*, dark, purplish red; *magnificum*, large, bright rose and white; *purpureum*\*, deep purple, nearly self-coloured; *roseum*\*, bright rose; *rubro-tinctum*, white and purplish red; *Ruckerianum*, purplish red, tinged with violet; *splendens*\*, deep rose; *spectabile*, white with purplish margin; *spectabile carminatum*, white with reddish margin; *salmonium*, salmony red; *tricolor*, deep reddish purple and white; *violaceum*, silvery white, with light purple margin; *violaceum grandiflorum*, like the last, but larger; *violaceum superbum*, deep purple and white. Those marked with an asterisk are hybrids, raised at the Tooting nursery."

*E. RUSSELLIANUM*, Hooker.—By some writers this has been, and still is, regarded as a variety of *E. truncatum*, but it is clearly distinguished by several well-marked characters. The flowers are 3 to 4 inches long with straight narrow petals, not reflexed as in *E. truncatum*. The branches are much more slender and not so distinctly truncated or cut at the ends of the joints. The time of flowering, too, is quite different, being in May or June; and according to Mr. Gardner, who discovered the plant on the Organ Mountains, it is found up to an elevation of 6000 feet, or nearly 2000 higher than *E. truncatum*. The flowers are of a rosy crimson colour, very clear and pretty, and they are produced with great freedom. Mr. Gardner's account of the discovery of this plant is interesting. "Through dense masses of large Bamboos with stems often more than half a foot thick and 60 to 70 feet high we had to cut our way up the Organ Mountains till we came, after a toilsome day's journey, to a small waterfall where we encamped for the night. On the trunks of the large trees growing near this spot I saw abundance of *Epiphyllum truncatum* beautifully in flower; and higher up the Mountain the next morning I found a lovely new species belonging to the same group as *E. truncatum* and much resembling it in many points, equally large, but with a more graceful mode of growth and lighter-coloured blossoms, the stamens, too, being uniformly pink." The plants found were sent to the Duke of Bedford's celebrated collection at Woburn about 1839, and in honour of the Duke the species received the name it now bears. The time of year at which this *Epiphyllum* flowers has enabled hybridisers to extend the flowering period of these plants fully two months—a most important advance, and if it were for this alone *E. Russellianum* has been a valuable introduction.

*E. ALTENSTEINI*.—Though not wanting in attractions this is rarely seen in gardens, and is usually regarded as a variety of *E. truncatum*. It differs, however, in its more slender branches being much larger, and the flowers are of a rosy colour. The flowering period is the same as the better-known species, and, like that, it is a native of Brazil.—LEWIS CASTLE.





MEETINGS OF THE COMMITTEES OF THE NATIONAL AURICULA AND OF THE NATIONAL CARNATION AND PICOTEE SOCIETIES were held at South Kensington on Tuesday last. Mr. Shirley Hibberd occupied the chair. Present—Messrs. Charles Turner, H. J. Veitch, John Laing, John Fraser, G. F. Wilson, H. Cannell, James Douglas, Dr. Masters and Dr. Hogg. The object of these meetings was to elect office-bearers for the ensuing year, and to constitute these Societies by the formation of a code of rules by which they will in future be governed. It was considered advisable that the management of the Societies should in future be in the hands of one Secretary only instead of two, and Mr. James Douglas was unanimously elected the Secretary of both Societies. A sub-committee, consisting of Mr. Hibberd, Mr. Charles Turner, and the Secretary, was appointed to draw up a set of rules for the government of the Societies, to be submitted to a meeting to be held at South Kensington on the 11th of November next.

— ANALYSIS OF ROSES.—It may possibly be of interest to intending planters to know that an important analysis of the Roses that have been most frequently exhibited during recent years is being prepared by Mr. Edward Mawley, one of the Secretaries of the National Rose Society, and as soon as completed will be published in our columns. The work, which has involved the tabulating of between 9000 and 10,000 Roses, is in an advanced state, and will appear in an early issue—possibly next week.

— PUBLIC EXHIBITIONS OF CHRYSANTHEMUMS.—The annual display of Chrysanthemums at Finsbury Park promises to be unusually good this season, the plants being in fine condition and bearing large substantial buds, some of which are fast expanding. The Exhibition will be opened to the public on Saturday, the 18th inst. The Middle Temple Exhibition was opened on Monday last, and has already been visited by a large number of persons. The Inner Temple display will be opened on the 20th inst.

— TUBEROUS BEGONIAS.—Mr. Robert Owen, of Yewden, Henley-on-Thames, who is establishing a florist's business at Maidenhead, has sent us blooms of Tuberous Begonias of great excellence. They are nearly or quite circular, with stout overlapping petals, and embrace every hue of colour we have seen in these extremely diversified and beautiful flowers. A semi-double scarlet-crimson variety is particularly effective.

— "FORESTRY."—The current number of this monthly magazine completes the ninth volume, and the proprietorship of the work passes from Messrs. William Ryder & Son to Mr. Charles Anderson, jun., the proprietor of the "North British Agriculturist," and in future the magazine will be published in Edinburgh. With the change of proprietorship Mr. Francis George Heath retires from the editorship of the journal in question.

— THE WEATHER.—During the past few days there has been a great change in the weather in the south of England, and it appears to have extended throughout the country generally. Snow has fallen rather heavily in several districts, and, accompanied by a keen north-east wind, has rendered the sudden transition from the heat of the summer very trying to vegetation. There has, however, been but little frost in the neighbourhood of London at present, and Dahlias in many gardens are still flowering abundantly.

— CATALOGUE OF CHRYSANTHEMUMS.—It was announced some time ago that the Committee of the National Chrysanthemum Society had undertaken the preparation of a catalogue of the varieties in cultivation, which should be of an official and standard character. The result of their efforts is the catalogue now issued, which in nineteen pages gives brief descriptions of 628 varieties arranged in the groups—Incurved, Japanese, Reflexed, Large and Pompon Anemones, Pompons, Summer and Early Flowering. A number of synonyms are given, and the Committee recommend that in future no varieties shall be exhibited in the same stand as their synonyms. The names are generally accurate,

but a few instances of faulty orthography are notable, as Beverlry for Beverley, Fanny Boucharl for Fanny Boucharlat, Fulgare for Fulgore, Aglaa for Aglaia, Hendersonu for Hendersoni, while in a number of cases the wrong termination is given to Latin names, as lutea striata, rosea superba, rubra striata, striata perfecta, carminata alba, and lacinata alba, in each of which the final syllable should be "um." The list is, however, a useful one, and it is probable that the demand for a second edition will soon give the Committee an opportunity of correcting these trifling inaccuracies.

— ACÆNA MICROPHYLLA.—A curious, interesting, and beautiful little plant, as the synonym implies, from New Zealand. It is peculiarly adapted for carpeting the rock, its pinnate leaves, which are deeply cut, generally assuming a brownish tint. This, with its curiously beautiful somewhat globular heads of minute flowers, protected, as it were, with long crimson spikelets, give to it an attractive and almost unique appearance. So dense is its habit, and so closely does it cling to the surface of the soil, that its full height is about 2 inches. It grows freely in almost any soil of a sandy nature, rooting freely all along its under surface, but prefers a moist situation. It may be used, however, as a carpet beneath which spring-flowering bulbs are planted with very good effect. It is also useful for edgings, and indeed all places where dwarf-habited plants may be advantageously utilised.—J.

— LUNGS OF GREAT CITIES.—Including Fontainebleau and Chantilly, Paris has 172,000 acres in parks, or one acre to every 13 inhabitants; in Vienna the proportion is one acre to 100 persons; in Chicago one to 200; in Philadelphia one to 300; in Brooklyn one to 639; in New York one to 1363, but New York proposes to buy 3808 acres for additional parks at an estimated cost of £400 per acre, or in the aggregate at the cost of £1,523,200. The aggregate area of public parks in the metropolitan district, with squares and gardens, is about 14,000 acres.

— A CHEAP METHOD OF HEATING—FORCING PLANTS WITH HOT WATER.—An experiment has lately been made at Acqui, Italy, by the proprietor of some baths there. This gentleman has at his disposal an inexhaustible supply of hot water from a natural spring, the temperature being 167° Fahrenheit. The surplus not required for the baths has been diverted so as to flow through pipes to a garden on the outskirts of the town. Here the warm liquid flows beneath a number of forcing frames containing Melons, Tomatoes, Asparagus, and other garden produce. The result is that a supply of these delicacies is ready for market at a very early period of the year, when, therefore, they realise high prices.

#### A HEAVY CROP OF MELONS.

WE have every reason to be satisfied with the whole of our Melon crops this season, but the particulars I am furnishing of our success with one sort must be admitted to be rather out of the common. The variety in question was received from Mr. Barker, gardener at Hindlip Hall, Worcester, a very successful fruit-grower, under the name of William Tillery, but it evidently contains some of the blood of Eastnor Castle. The seed was sown on May 5th, and the selected plant in company with plants of several other sorts was planted in a house on June 21st. The first fruit was cut September 3rd, and between that date and September 29th twelve more fruits were cut. The heaviest fruit weighed nearly 10 lbs., and the aggregate weight of the thirteen fruits was 64 lbs., this giving an average of nearly 5 lbs. The roof space covered by the plant was 8 feet by 6 feet. It was in full vigour when cut out, and would have perfected a late crop had we not wanted the house for other purposes. I ought perhaps to add that it was rooting in a square mound of loam about 3 feet wide and 2 feet deep, and the fertilisers used were farm liquid manure and an occasional surfacing of Beeson's manure.—W. IGGULDEN.

[We have seen and tasted one of the fruits referred to, which was large and of excellent quality so late in the season. It is not William Tillery.]

#### THE CHATEAU DE FERRIÈRES.

THE SEAT OF BARON A. DE ROTHSCHILD.

SOME years ago I had the pleasure of making the acquaintance, as a member of the Horticultural Club, of Mr. Ernest Bergman, the son of the well-known *jardinier en chef* of this renowned place, and have often had courteous and pressing invitations to spend a day with him at Ferrières, more especially when we met five years ago at the Brie Comte Robert Rose Show. I was, however, unable to do so; but this year the advice of a physician and the kindness of a most valued friend enabled me to pay a short visit to France last month, and amongst the pleasurable days which I enjoyed I have to mark with the whitest of white chalk that which I spent at Ferrières, of which I shall endeavour to give such notes as, however feeble, may give the readers of this Journal some idea of its treasures.



Whatever may have been the past history of Ferrières, there is no doubt that it will be best known historically as the residence of the German Emperor during the Franco-Prussian war, and as being the place to which Jules Favre went to try and obtain some better terms from Prince Bismarck. The room is shown where the interview took place, and where he shed those tears which so moved the ridicule of the Iron Chancellor, and made the French Minister the laughing-stock of Europe. The room is there, but nothing else; for all the furniture was destroyed after he left, and the very paper on the walls was changed! for, although a German, the patriotism of the Baroness for her adopted country led her to sympathise largely in its misfortunes. The present château owes its origin to Baron James, the father of the present possessor. It stands in the middle of a large estate of about 20,000 acres; the plantation, shrubberies, and dressed ground immediately surrounding it amounting to about 800 acres. It owes little if anything to Nature. There are no wooded heights, no beetling crags, no broad expanse of river and lake; for it lies in the middle of a vast plain, which stretches on towards the Champagne country—indeed, Brie Comte Robert, near which it is, was a dependency of the Counts of Champagne. The woods surrounding it do not contain any very large timber, and the roads are driven through it at right angles, as is the custom with all the French woods with which I am acquainted. Yet these disadvantages have by good taste and the lavish expenditure of money been overcome, and although there is an air of rawness about the place, yet it is very beautiful. An artificial piece of water lies in front of the house, and when I was there Mr. Bergman was diverting a small stream which, instead of being lost in the woods, would flow in sight of the house. The house itself is very fine, the large hall of grand proportions, and treasures of priceless value are to be seen on every hand. The stables are magnificent. There are large kennels with packs of hounds, herds of Brittany cows, and, in fact, everything that good taste and an unlimited purse can command; but on these I must not linger. I came to see the gardens, and it is of them I desire to give my impressions.

There are comparatively few amateurs in France—few who, as in England, care to devote large sums of money to the culture of flowers, and the production of examples of horticultural skill. Of those few I believe Baron Rothschild is considered the chief. There are others, such as Comte de Germiny and the Duc de Germiny, who are lovers of plants—the former especially has spent large sums on Orchids—but I believe that Ferrières is looked upon as the place *par excellence* where French horticulture is to be seen at its best. The gardens are widely separated, making, therefore, much additional labour to those who have to superintend it. There is the floral garden, as it is called, then the nursery ground at another place, then the kitchen garden at some distance, and the parterres immediately surrounding the château. The floral garden forms a large square almost entirely surrounded by glass houses of one kind or other. Some things of special interest strike one in most places. Here it is the exceedingly artistic taste with which the houses are arranged. There are in most places of the kind tanks in the various houses; but, instead of being left in their bare ugliness, they are here arched over with rockwork, in which plants of various kinds are grown, and with a small statue of white marble they have a very pretty effect, thus transferring an unsightly thing into a thing of beauty. Then the back walls of the houses are mostly all clothed with plants of some kind or other, mostly *Ficus repens* is used for the purpose; then the front of the stages are mostly filled with *Isolepis gracilis*, so that the unsightly pots are hidden. The arrangement of the plants shows that not only their well-being is considered, but also the general appearance, so that on walking through your eye is not offended but pleased and delighted at every turn. In the first house we entered into we saw that grand plant of *Vanda Lowii* which was photographed some time ago. It had nearly 400 blooms on it, and its appearance now bids promise of still further progress, as it is in rude health; but perhaps even more remarkable is the wonderful way in which *Vanda teres* flourishes. Mr. B. S. Williams, in his "Orchid-Growers' Manual," describes it as rather a shy-flowering species, and that it thrives best on a block of wood plunged in a pot. Here it is grown mostly in sphagnum, with the frame, if I may so call it, on which it is grown half filled with drainage. It was not unfortunately in flower at the time of our visit; but I am told that one of our most celebrated orchidists, when he came to Ferrières, after looking all over said, "Let us go and look at *Vanda teres* again," so impressed was he with the wonderful success which has attended its cultivation there, where upwards of 700 flowers have been produced on it. *Nepenthes* were well grown, and some fine pitchers of *Mastersonia* were especially noteworthy. In another house I noticed a grand specimen of a Fern rarely seen, *Goniophlebium subauriculatum*. It was grown in a basket suspended from the roof, and its beautiful fronds hanging down 10 or 12 feet and in great profusion, so as to form quite a bower of greenery. It is a stove Fern, and certainly very beautiful. The Pine pits contained some excellent examples of Pine-growing, Smooth Cayennes mostly attaining a weight of from 10 to 12 lbs., while the variety known as Charlotte Rothschild is much grown and valued. It was found many years ago, when Baron Rothschild had many argosies trading to different parts of the world, by one of his captains in 1843, and found to be of such excellent quality that it was largely cultivated and distributed. The Pines are planted out, and nothing could exceed their vigour and health. The maininery occupies the second portion of the square, and is 65 metres—i.e., about 213 feet long, and was mostly filled with a beautifully even crop of Frankenthal. The latter months of the year being those at which the Château is most occupied, one great object is to have fruit and flowers in abundance at that season, although, as in the case of our great English houses, there is abundance to be done at all times. There is still the question whether Frankenthal and Black Hamburg are the same. Both the

names indicate German origin, and there may be a distinction without a difference. The prettily coloured Chasselas Rosé was also well grown. There is another vinery, at the back of which is a fine house of Camellias planted out and looking in vigorous health, while there is also in the same position a cool Orchid house built in 1883, where *Masdevallias*, *Odontoglossums* &c., are grown. Here were to be seen quantities of the ever-welcome and graceful *O. Alexandræ*, while that extraordinary *Masdevallia*, *M. chimera*, was in fine health; but, indeed, the whole collection of Orchids is remarkable, more especially when we consider that a few years ago there was only one house devoted to them. At the opposite end to the vinery there is an Azalea house of equal dimensions, which must be indeed a grand sight in the spring. There are about 600 plants varying from the height of 2 feet up to 6 or 7. All of the best kinds are grown, and as they are not intended for exhibition are allowed to grow naturally. At the entrance of the house there is a large tank with a sleeping figure in white marble and a surrounding of Ferns and other ornamental plants. It is proposed, and the commencement has been made, to cover the roof with Roses, as the Camellia house is to be covered with *Lapagerias*, white and red alternately. The Azaleas were at present out of doors, and the house was well filled with flowering plants of various kinds.

In another house I saw the parent plant of that remarkable novelty, *Anthurium ferrierense*, raised by Mr. Bergman. Opinions will vary as to the beauty or otherwise of the Aroids. Brilliant as was the colour of *A. Schertzerianum* it never took my fancy. *A. Andreanum* is very curious and remarkably bright, and *ferrierense* is curious as a combination of the white and red, but to my mind they are unpleasant-looking plants; but, be that as it may, to those who favour this class of plants this new variety is very welcome. But while all these giants in horticulture are carefully cultivated, attention is equally paid to the production of minor things which are required in quantities for decoration. Thus 20,000 winter-flowering Carnations are grown, of three varieties—La Belle, white; Irona, pink; and A. Alegatière, scarlet. Large quantities also of Madame Crousse *Pelargoniums*, *Heliotropes*, and everything, in fact, required for the decoration of a grand establishment.

Horticulture in France has received of late years two severe blows—the war of 1870 and the severe winter of 1879. The loss in the former case was enormous to such men as Lierval, whose houses, battered to pieces, I saw after the Commune with row after row of dead plants; or my friend M. Margottin at Bourg-la-Reine, or Messrs. Thibaut & Keteleer at Sceaux; but it did not equal the injuries caused by the fearfully severe winter of 1879-80. We heard of it at the time, but one must visit such gardens as these to see its full effects. I am led to say this from visiting the fruit and vegetable garden. There had been a long row of splendid espalier Pears of the very best varieties. Only one of these remained; every one of the others had completely succumbed to the frost, and young trees had been planted to supply their place. It was the same at M. Margottin's, who had not one of his trees left, and had to replace them also. This department of the garden at Ferrières is under the care of M. Martin, and the same intelligent supervision is visible here as elsewhere. I saw here what was quite a novelty to me in a fruit room—the shelves, instead of being flat were all slanting; consequently all the fruit was visible, and any defective ones could easily be seen and removed. I believe it was planned and carried out by M. Bergman some years ago. There were already in it some fine fruits, while on the walls Peaches were still hanging in considerable numbers, the season having been a favourable one for them.

I should have mentioned that in the *jardin fleuriste*, where the greater quantity of the glass is, there is what is called a winter garden, in which fine Tree Ferns, Palms, &c., are planted out and the whole carpeted with *Selaginella apoda*. It is large and interesting, but so far from the house that it can hardly answer the purpose of a winter garden, into which, I conceive, a person ought to be able to walk from the house to gain any benefit. It may be a nice Palm and Fern house, yet it is hardly a winter garden; but, like everything else here, it was the perfection of order.

I feel that I have given a very inadequate idea of this very grand château and its surroundings. It would be indeed difficult to exaggerate the care, artistic arrangement, and order of everything one saw, and any who have seen Ferrières will, I have no doubt, smile at my feeble attempt to set forth its beauties. It would be equally impossible for me to exaggerate the kindness and hospitality I received at the hands of M. and Madame Bergman and their worthy son; and as we were driven back to the railway station we could not but feel that we had experienced so much kindness at their hands and seen so much to interest us, our visit to Ferrières would always remain as a noticeable day on our calendar.—*D., Deal.*

#### VEITCH'S NEW PEA STURDY.

As a rule I do not take well to new things. I like something that has been well tried and has proved worthy of one's confidence, for I have often noticed that the spirit of the old saying, "Every man's own children are the best," applies to other things as well as the human race, but I am very favourably impressed with the worth of the above Pea for the following reason.

When I took charge of these gardens (June 21st) it was the middle of the dry season we have just passed through. Vegetables were very scarce and threatened to be more so as the season advanced. The earliest Peas would not be fit for use in less than a week, and succession crops looked very thin and weak. What was to be done must be done at once, and the only available ground was a piece in the recently laid-in kitchen garden which had been a corn field, and had not had any manure for a long time. The soil in many places was only 6 inches deep, and had



to be watered before it could be dug. Shallow trenches were formed 4 feet apart and filled with good decayed manure, which was dug in as deeply as possible. Most of the soil taken out at first was then returned, drills were drawn and well watered, the seed being sown, covered, and watered again. Three varieties were sown—Laxton's Omega, G. F. Wilson, and Sturdy. The two first gave us some capital Peas, and were ready August 28th, about a week before Sturdy, but they were soon over in the very dry weather, distance and pressure of other work only allowing us to water them once after they were up. Sturdy has continued bearing ever since, and has certainly proved worthy of its name. Yesterday, October 10th, we gathered some good pods from it, and we shall have more yet if the frost keeps off a little longer. It has grown nearly 4 feet high, no doubt under more favourable circumstances it would grow taller, but I am not sure it would be any better if it did. The taller varieties generally only have a greater length of bare stems. A memorandum for next season is to sow some of the older varieties, but also to sow plenty of Sturdy.—W. H. DIVERS, *Ketton Hall*.

### A FEMALE IMPOSTOR.

#### A WARNING TO SCOTCH GARDENERS.

THERE is at present a professional impostor moving about the southern counties of whom I should like to warn your numerous readers. She appears in the shape of a respectably dressed burly Scotch woman, deeply pick-marked, and is accompanied by a "wee lassie" as she calls her. Such a genius as this has no doubt various stories to suit different circumstances, but if I relate what her performance was at my own door it will sufficiently illustrate her mode of procedure. She inquired in real broad Scotch if I knew of a gardener of the name of Campbell had lately come to live between H—, H—, and B—, two stations on the Brighton Company's main line. On inquiring if she did not know the name of the place she said No, and at once explained that her name was Mrs. Campbell of Leith Road, Edinburgh; that she was going to meet her husband, a "chief engineer" on board ship at Portsmouth, but that she had gone down to Bromley in Kent to visit her sister, and found when she got there that they had moved a few weeks ago and she had come here in search of them. I told her I thought she was on a fruitless journey, and as there was not the slightest trace of the genus tramp about the party they were soon seated at the dinner table and doing ample justice to a "basin o' guid Scotch broth." I had to hurry off to catch a train. On my return at night it was to find that our strange visitor had poured out a woeful tale to my better half about having been put out of her way in not finding her sister, and that she had run so many shillings short of what would pay her fare to Portsmouth, where she was bound to be that night to meet her husband. Her plausible story and a few tears judiciously shed had the desired effect of completing a little "loan," to be sent back as soon as she got to her husband. I have since learned that she received money from two persons (one of whom lodged her all night) the previous day, and that she was denounced as an impostor at the house of a third the same night by a previous victim and turned out.

She does not confine her operations to gardeners, but seems to be making a living out of the well-known sympathy existing amongst Scotsmen whenever they meet. I have no doubt but a fair proportion of the readers of the Journal in the south hail from north of the Tweed, and I hope the Editor may find room for this to warn unsuspecting working men of this impostor, a disgrace to her sex and to the "Land o' Cakes."—R. I.

### DAHLIAS.

"H. G." writes in your issue of October 2nd that "Those who are bent upon seeing a first prize upon their stands at our next grand National Dahlia Show must not mind rising with the sun nor ignore the light of the moon." I confess that nothing would please me better than finding that I had attained that honour, and should be only too thankful to "H. G.," or any other successful grower, if he or they could help me to attain that goal. Why should I "rise with the sun," and for what reason must we stop up till the moon sheds her genial rays upon us? "H. G." tells us that "practical experience" is the only means of success, but beyond saying that plenty of air, loam (room), and water are required, he does not help us. I say us, because there are others in this neighbourhood who, like myself, have just taken to growing the queen of autumn flowers who would only be thankful for a few practical hints. Will "H. G." kindly explain further?

What are the enemies he hints at, and how can they be discovered and their destruction accomplished?—TYRO (so far as Dahlias are concerned).

### JUDGING TOMATOES—THE PALATE TEST.

WHAT "A Thinker" says upon any subject has, I have good reasons for asserting, much more weight with the readers of the Journal than anything I can advance. This being so, it is with me a matter for regret that he is not so closely allied with the "party of progress" that I at one time thought him to be. At any rate, I did not think he would doubt the possibility of improving on the present system of judging Tomatoes. He seems to infer that I propose the "palate test" alone should decide the matter, whereas I only suggested that it should be the "principal essential." I would on no account encourage monstrosities in Tomatoes any more than in other fruits or vegetables, and if they were systematically condemned they would soon disappear from the exhibition tables. To be plain, then, I would select the best grown and

selected dishes, both of smooth or corrugated sorts, and then finally decide by tasting. "A Thinker" rightly remarks that "tastes vary, and so does the flavour of Tomatoes;" but it seems that he at any rate knows which are the best when he gives the preference to such sorts as Carter's Greengage and Orangefield, and unless I am much mistaken many other good judges would be of the same opinion. If these sorts thus gained the awards it would naturally result in their more extended culture, and also, owing to their superior excellence, to a more wide-spread love for Tomatoes. As it happens Phillips' Perfection is equal in quality to either, and here, then, is a variety equally as serviceable and as "handsome as paint can make it." Dedham Favourite is undoubtedly a very excellent variety, and which probably at times would gain the awards and no harm be done.

Every year adds to the number of novelties in Tomatoes, but as in the case of Potatoes and other vegetables we could well dispense with the majority of them. Hardy or disease-resisting I am afraid they never will be, nor much better flavoured. It is scarcely the class of fruit to develop into dessert fruit, though I have no doubt "A Thinker" does not object to an occasional fruit "by way of a change."

We judge Melons by flavour and no one finds fault with the decision, in fact it is in connection with the classes for these we hear the least amount of grumbling; but the "new departure," or judging by appearances, at South Kensington was not approved of by any save perhaps the first prizewinner and the judges themselves. Take Peaches again. One of the best fruit-growers and exhibitors ever known seldom judges these without tasting them, and as a consequence a very fine dish of Princess of Wales I once had the misfortune to compete with was simply nowhere, although the other competitors had previously unanimously awarded me the first prize. I was obliged to admit that the decision was a just one, and the same season the tree that produced such poorly flavoured fruit went to the rubbish heap. The treatment given may have been faulty, as I have tasted fairly good fruit of this variety which had been grown in the open air, mine being under glass and given fire heat; but at the same time we had just previously been pulling equally as large fruits of Barington, and which were of most excellent flavour. No good gardener would think of placing large and maybe handsome bunches of White Tokay Grapes before smaller yet perfect examples of Muscat of Alexandria, simply because the quality of the latter is well known to be superior to the former. If he was not acquainted with the quality of both varieties he would, or at any rate I should, taste them before making an award, and why not taste Tomatoes? It will not do, Mr. "Thinker," and your objection is weak. Please to think it over again, and I will certainly send you a "jar" of Chou Chou pickle to assist, or rather encourage, you to think differently in the matter—call it bribery who will.

With regard to the advisability of having separate classes for smooth and ribbed sorts, I am certainly of the same opinion as "A Thinker," as this innovation would not only simplify the judging, but also add another very interesting class to the schedules. Members of committees should make a note of this, and at the proper time suggest that a second class be added for Tomatoes, even if they have to suppress some less worthy object in order to find the necessary funds.—W. IGGULDEN.

"THINKER'S" thoughts are good respecting the flavour of and judging Tomatoes. I think that the days of large fruit as such are gone by, more especially now Tomatoes are considered fit to place on the table as grown instead of being consigned to the tender mercies of the cook. Diversity of tastes there always will be, but I incline to Dedham Favourite as the best for flavour. Greengage has a flavour of its own—very good indeed. Certainly heat improves the flavour of Tomatoes, as it does that of Grapes, Apples, and Pears.—STEPHEN CASTLE, *West Lynn*.

### BOUVARDIAS.

"WHAT a mistake it is to grow Bouvardias in heat, when much better results may be obtained by growing them in cool frames," remarks your correspondent "Caledonian." Does "Caledonian" mean that they are grown in cool frames from the time the cuttings are struck, or that they are grown in such frames for three or four months in summer? If the former, his remarks are likely to mislead. If the latter, I do not consider it possible to grow as good plants under cool-frame treatment as by having them in the stove until the end of May or the beginning of June, and then plunge them in cool frames. Our plants grown as stove plants thus far are very fine, having growths as thick as a lead pencil. They were pinched three times before being placed in cold frames, but afterwards were allowed to make as much growth as possible without any check. Last week they were transferred from the frames to a house just cleared of Melons and plunged in the beds, where they will have fire heat in cold or damp weather. It is one of the greatest mistakes to keep pinching these plants, as strong well-ripened growths not only give a greater quantity of flowers, but keep up a longer supply than plants closely pinched.

Bouvardia Hogarth set in a groundwork of Selaginella makes a chaste and beautiful arrangement for dinner-table decoration, even more beautiful, I think, under the shaded lamp and candles than in daylight.—J. B. H.

### ROSE QUEEN OF QUEENS.

ONE of the most beautiful of the numerous fine Roses for which cultivators are indebted to Messrs. W. Paul & Son, Waltham Cross, is that



bearing the appropriate title, Queen of Queens. In all points it is worthy of prominent attention, and the first-class certificate bestowed upon it by the Royal Botanic Society in 1882 was a well-merited honour. We have seen blooms exhibited on several occasions during two seasons, and so

substance that would not disgrace an exhibition stand, the half-opened flowers being superb in appearance. The colour is a clear bright pink, the petals somewhat lighter at the margin, which is slightly recurved. In that most valuable quality, floriferousness, it is all that could be desired,



Fig. 59.—ROSE QUEEN OF QUEENS

well does it maintain its character that we have no hesitation in pronouncing it a variety that is likely to take a foremost position amongst the most favourite garden Roses. The blooms, too, are of a form and

producing its handsome blooms most abundantly, and for this alone it would be most valuable in gardens where Roses are always in demand.

Queen of Queens is said to be a cross between a Hybrid Perpetual and



Maiden's Blush, one of the best of the beautiful *Rosa alba* group; and though the result of this cross is undoubtedly a Hybrid Perpetual in all its leading characters, it seems to partake of the beauty of the other parent in a considerable degree. The variety is therefore doubly interesting for its own merits and its parentage. It is a vigorous grower, and appears to possess an excellent constitution.

The woodcut, fig. 59 (for which we are indebted to Messrs. W. Paul), faithfully represents a cluster of blooms of this fine variety.

#### WEIGHT OF FRUITS.

SOME time ago a correspondent wrote asking the weight of fruits. Perhaps it may interest him to know that last year at Ardgowan Mr. Luut grew Strawberries nine of which scaled 1 lb., and six single berries weighed 2 ozs. each. The variety was James Veitch; the fruits were gathered from plants grown in pots.—CALEDONIAN.

OBSERVING in your paper a note about the weight of fruits, I had the opportunity (through the kindness of Mr. Scott the gardener) of looking through the houses of H. T. Morton, Esq., Biddick Hall, Fence Houses, a few weeks ago, and saw a Peach tree (Princess of Wales, four years old) which had a beautiful show of fruit, and am informed that eight of the largest Peaches averaged 12 ozs. each, the heaviest being 14 ozs., and the lightest 10 ozs. I also saw a young Nectarine tree about the same age which had a good crop of fruit, some of which weighed 8 ozs., which I considered about the best sample of fruit I had seen.—A TRAVELLER.

#### THE FARMER'S GARDEN.

FARMERS, as a rule, are but indifferent gardeners. We cannot help noticing the fact in travelling through country villages, especially in the south of England. Where we should naturally expect to see farmhouses begirt with smiling gardens there is mostly but the stingiest display in the way of flowers, and the kitchen gardens figure only as the commonest Potato and Cabbage plots. Everything is there but the will and the skill; plenty of room, the best of loam from the parings of ditches and decaying tussocks, and mostly an abundance of manure. But with farmers the world moves slowly, and the waggon runs from generation to generation in the same old rut. One reason of the neglect of the garden is a want of knowledge of its capabilities under skilful treatment. It ought to be an inexhaustible magazine of wholesome and nutritious food for the household. The "gude wife," to whom is generally due whatever little floral embellishment which surround the house, has to beg and pray of her lord and master for the little labour required to keep the garden in order. The farmer is jealous of his manure heap, and grumbles loud and long if he sees his handy man at work in the garden. But there is another aspect of the question. A farmer's garden being mostly in close proximity to his house, ought to be the suggestive example of thorough cultivation of the soil, a pattern in its cleanliness, order, and productiveness of what his farm should be. It might be utilised also as a trial ground for seeds and roots, but in any case it should afford a substantial addition to the family board.

While travelling in Staffordshire last summer a capital specimen of the British farmer entered the compartment where we were seated. He was evidently well to do in the world, and both physically and intellectually able to hold his own. What took our attention, however, was the splendid half-open blooms of Général Jacqueminot with a leaf or two, and a couple of ears of green Wheat. It was as pretty and appropriate a buttonhole as a farmer need wish to wear. "Object to smoking?" we inquire. "No." "But you don't smoke, sir?" "Yes, I do; just two pipes a day; one first thing, t'other last." "Fond of flowers?" we inquire. "Yes; I like a Rose." "That's a nice bud of the General?" "Middlin," was the reply; "the General's a good Rose; if I'd only two Roses he'd be one and the other Glory Dijon. My first pipe's in the morning in the garden; I like to see the Roses open when the dew's sparklin' on the leaves in the pride o' the morning." "Pretty good soil here?" we remark. "Yes; middlin good; rather heavy; but there's heart in it when it's well worked. Staying about here?" he asked. "Yes; at the old house by the Poplars there." "What, Mr. Ellis's! my place is only a mile off, perhaps you'd like to look round; we've not much to see except a few Roses."

Next morning was the 1st of July, and when I called there was the scent of blossoming Bean fields and Honeysuckle and new-mown hay in the air. The farmer had his coat off budding some Briars, while a little lad and lassie held the shoots and bast for their father. The house, an old-fashioned roomy structure, was almost covered with creepers. A fine old Gloire de Dijon occupied about half the front, which faced east. *Pyrus japonica*, Cotoneaster, and a Jasmine occupied the other half. A gravel

walk intersected the lawn, which was short and soft as velvet. On each side of the lawn were borders of old-fashioned herbaceous plants interspersed with standard Roses. Two of the latter were the grandest specimens of ruga, a delicate and fragrant cream colour, we had ever seen. They are thirty-five years old, the heads 9 feet in diameter, and the branches allowed to droop naturally over a ring of iron wire. It was no unusual thing to see, about the third week in June, a thousand Roses in bloom at one time on each of these trees. The pruning consisted simply in cutting out the old branches, tying in the new shoots in their places. There were some beautiful arches of the same Rose over the path to the kitchen garden, and the same Rose was allowed also to ramble over a rustic arbour. We had almost forgotten to mention some picturesque old Apple trees, whose gnarled and lichened stems formed a natural and artistic arch over the entrance to the garden. The gayest month in this charming old-fashioned place was April. The farmer was great in Polyanthuses, Wallflowers, Daisies, Aubrietias, Anemones, and Tulips.

To the right of the flower garden, and separated only by an herbaceous border dotted with fine old standard Roses, was the fruit garden, bordered with Roses, also standards. The farmer's reason for growing his Roses in this way was simply to save himself the necessity of stooping. "More convenient," he said; "you see I'm getting stout, else I don't admire standards much. I like Roses on their own roots best, and there is no trouble in getting them from cuttings." "Indeed!" we remark. "Well, I put some proper stuff, loam and a little sand, into an ordinary box about a foot deep, water the soil well, let it settle for a week, and dibble in the cuttings thick, give them another watering, wait a day, and then glaze the box with a single sheet of glass, allowing no ventilation whatever. In seven or eight weeks, when most of them will be rooted, I lift the glass an eighth of an inch, and gradually increase the air supply till they are ready to plant out in October, having put them in at the end of July." There were quarters of bush fruit and Strawberries in full bearing, and a few espalier Pears, which, however, he was about to remove, as they were uncertain croppers.

The kitchen garden, which comprises an area of half an acre, was in a capital condition, free from weeds, and every inch of it utilised. The Brassicas were in great force, the Brussels Sprouts especially, magnificent. One peculiarity struck us with regard to the Cabbage tribe—we looked in vain for a trace of the mischievous caterpillar. On inquiry, we found that the little folk afore-mentioned were provided with nets, and paid certain head money with a view to the extermination of the butterfly. "We don't trouble," said he, "to catch the caterpillars, there are none; we make their existence impossible by destroying the egg-layers." Another peculiarity of the garden was that nothing was crowded, everything had abundance of air and light. Peas, of which there were some dozen splendid rows, were set 6 inches apart; Scarlet Runners in rings 4 feet in diameter; Broad Beans, a favourite vegetable with the labourers in harvest time, were promising a splendid crop; and Vegetable Marrows, growing on a bank sloping to the south, making enormous growth. The farmer cropped the whole of his garden, excepting the Potato plots, from his own seed beds, and never admitted a new variety without submitting it first to a year's trial in a quarter of the garden specially reserved for the purpose. This served also as a nursery for raising herbaceous plants, and Carnations, Polyanthuses, Pansies, Sweet Williams, and Antirrhinums. Latterly he has taken up with the charming single Dahlias.

"You grow enough vegetables, perhaps, to supply your entire household?" we remark; "what labour do you employ upon the garden?" "Well, we don't grow all our Potatoes here, only the earlies and second earlies; and we've one man, a handyish chap, who manages the whole of it, and lends us a hand on the farm on any day we may want him. I reckon it costs us altogether about a guinea a week, and it's worth at least two, letting alone the pleasure one gets out of it, and the enjoyment of the wife and youngsters; they are all fond of it." A three-light frame was all the glass the farmer had, "and plenty, too," he said, "but the missus will never rest till she gets a lean-to like the parson's yonder. Will!" he shouted to his man, "yo can take half a dozen Cabbages home with you, and cut yoursen a Cowcumber; and remember we send them hospital folks some flowers on Saturday morning."

Farmer Wilson, though old-fashioned in his tastes, or he would not allow the great clipped Yew tree to remain so long shutting out air and sunshine from his parlour windows, occasionally makes alterations in his flower garden. The long walk, for instance, which passes by the front of the house and bounds the flower and fruit garden on the west, stopped abruptly at a Privet hedge on the borders of a pond; beyond it was the



orchard where the early lambs gambolled beneath the Apple blossoms in the spring. Cutting a gap in the hedge on each side, and putting up a slight wire fence and a rustic arch over it, opened a charming vista view from the front door to the end of the orchard. It is needless to say, perhaps, that the farmer's farm showed almost the same careful cultivation as his garden. Last agricultural show he was awarded the gold medal for the best cropped and cleanest farm in that division of the county. With a bunch of Roses that would fill a half-bushel measure, or take a prize at Beemister Show, a basket of President Strawberries, a brace of Cucumbers, long and straight as a gun barrel, and a pressing invitation to stay and have dinner with him, we shook the big, strong, honest outstretched hand, and said "Good-bye!" "Good-bye!" said he; "yo mun look round again. Good-bye! and thank ye for coming. Yo'll remember the bit of 'rickler seed?"—LUKE ELLIS.

### TASTE IN FLOWER GARDENING.

THE article you publish on page 331 criticising one from "Sylvanus" is of such a nature that I trust you may be able to allow me space to analyse its contents pretty fully. I do not wish to do this so much for any personal reason as in the furtherance of high-class gardening. First, then, I will place on one side what "Sylvanus" really wrote, and on the other what "Adam" has conceived to be his meaning. Readers interested can turn back to the articles themselves, and they will realise more fully on perusal the difference between the two.

ADAM—PAGES 331 AND 332.

He does not appear to have had much experience with hardy plant culture, or he would not have gone into such ecstasies over "ordinary bedding plants," and written so disparagingly about what he is pleased to term "wild gardening," in which are employed the "few hardy plants" worth growing. So far from there being only a "few hardy plants worth growing," we can state from experience that their name is legion, and with a few exceptions worthy of a place in every garden. . . . Now a few words on behalf of the "few rubbishy plants" which your correspondent has written so disparagingly about. He scornfully alludes to the beds of Carnations and other old-fashioned bedding plants which our forefathers used to justly admire, as well as lumpy Dahlias, Hollyhocks and other first-class plants.

SYLVANUS—PAGE 163.

"We are now so extremely rich in flowers suitable for decorative effects that there is ample means for all purposes. As regards ordinary bedding plants, we are almost in a position to defy the weather of ordinary seasons. We can as it suits the taste have some 'wild gardening' by employing Snapdragons, Marigolds, Marguerites, Pentstemons, Starworts, Ox-eye Daisies, Japanese Windflowers, Vitadenias, Evening Primroses, Gladiolus, &c., and have our gardens rough enough to please the most ardent aesthete. . . . I have always thought it would be a pity to turn out the ordinary bedding plants from our gardens in the same way as the few rubbishy plants were in bygone times turned out of their ill-kept borders. . . . There is plenty of room in all country gardens for growing the few hardy plants really worth growing; plenty of room for Pinks and Carnations, for Daffodils, for Anemones, for Roses, for Phloxes, for lumpy Dahlias, and for tall-growing Hollyhocks without ousting the bedding plants—as they have been rather unhappily termed—from the position they have so long occupied."

I shall now examine the doctrines enunciated in both articles as a furtherance to high-class gardening. I have carefully gone over both. The one I wrote, to which "Adam" objects, was very hurriedly written, but I do not find anything to withdraw therefrom. The main object of the article was to give some hints on the ordinary style of bedding, which, notwithstanding the long number of years it has been employed, is still most remarkable for the want of taste displayed in the arrangement of many gardens. I think I may safely appeal to persons of taste if this be not so. As I stated, there is nothing in a yellow Calceolaria, a scarlet Pelargonium, or a blue Lobelia to offend the taste. It is in the way they are mismanaged that offence is justly incurred. Gardeners have flower gardens to deal with just as they are, and it is nonsense to overlook that fact. Nor does it matter whether he has a geometrical series of beds to beautify or detached clumps or borders; it is his business in the first place to qualify himself to make the most of any material he may have to work on, and that he can alone hope to do with some trouble as a young man. When the time comes for the actual putting forth of his talents he will find that flower gardening, though no simple rule-of-thumb affair, is reducible to a matter of slight difficulty. So long as he takes into account his surroundings, bears in mind that the flower garden is merely a small artificial feature amid many natural features of great beauty; and when he does not transgress the harmony of colours, nor forget the fitness of things, he may be assured that the flowers themselves will be on his side to gloss over any slight mistakes he may fall into.

Turning to the article at page 331, and setting aside altogether the question of what the writer conceives to be fair in distorting the views of another writer, I think there is apparent therein very much that is crude and misleading. Where, may it be asked, is the garden or gardens to which your correspondent refers when he says, "The ordinary bedding

plants embrace a large number of exotics, which for nearly six months of the year have to be grown in heat, as well as others less tender in cool houses and pits. The propagation and growing of hundreds of thousands of these plants in early spring ready for the bedding season is a task involving great labour and a heavy expenditure. In many establishments, where such a great amount of carpet and other geometrical bedding is carried out, the labour power to accomplish all this is absorbed in the annual preparation of the plants to the detriment of other work in the garden at such a period." Further on "six months out of the twelve" are talked of for the preparing of tender bedding plants, and a little further "nearly nine months" is given as the period they are in a state of preparation.

Now, such a mode of trying to place the question of whether bedding plants should be grown is not in accordance with fact, as I know the state of matters. But if the proprietor of a garden wished his flower garden to be managed in the manner and at the expenditure stated, he has a perfect right to do so. I know instances where miles upon miles of walks are kept at a great expenditure of money and labour, where mowing machines are kept going almost continually from spring to autumn, where squads of men are kept for weeks sweeping up and clearing away fallen autumn leaves, where large annual sums are spent in bulbs and plants for forcing, where weeks are frittered away tying plants for exhibition or merely for conservatory decoration. Are we to condemn in all these cases? I will go a step further. I know people—proprietors of gardens—who will have their Gladioli, Pinks, Carnations, Pyrethrums, Asters, Phloxes, &c., kept tied to stakes, who will have dead flowers and decaying stems removed, and who will not tolerate their hardy borders unless they are kept neat, and I know all these things mean a great expenditure of time and labour. How far would your correspondent like to go looking at gardening from this point of view?

Practically the question is just this, Are Calceolarias, Pelargoniums, Lobelias, Ageratums, Violas, Alternanthera, and Iresines worth growing? Do they fill a place in our gardens which no other plants can so well fill? I am of opinion they do. To turn them out would be a deplorable mistake, just as it was a deplorable mistake to grow no other class of flowering plants in gardens for so long. Of course, I do not in the least accept "Adam's" estimate of how flower gardening is managed in "many establishments" until proof is given of the correctness of his statements.

Turning now to hardy flower gardening pure and simple, I had thought I had just a little experience among hardy flowers; however, we shall accept the dictum of "Adam" and bow to his prescience. At the same time, I have an idea that those people who the most rigorously select their material will have the greatest satisfaction from hardy flowers. Of course, if a "collection" is wanted that is a different thing, but from a purely decorative point of view, and that is the gardener's point of view, we must select.

Going to another point, I may say that I know of some borders and beds of hardy flowers, which at the present are simply beautiful—no finer, however, than bedding plants beside them—but these were planted for a late autumn display, and it is only in autumn that they yield their harvest. Other borders I know which would be positively unsightly were it not for the labour spent in keeping them in order, and these are planted for an all-the-year-round display, and these two cases lead me to believe that we cannot have hardy borders fine for any long period. Nor do I think it is anything to the disfavour of hardy flowers that it should be so. If I might be allowed to insinuate a remark about hardy flower borders for the generality of country gardens it would be to fill them with spring and summer flowers, and not to attempt much at an autumn display with the same borders.

Finally, just let me point out the conventionality of my critic's reasoning. "We want no garish parterres, mighty terraces, and squirting fountains formed where Nature can dispense with these artificialities. We want an ideal garden, a real pleasure where Nature and Art work harmoniously together; in fact, a series of floral pictures, skilfully conceived and wrought, devoid of repetition, every step should lead us to something original—be it a sequestered spot, with a background of noble trees and a foreground of choice hardy shrubs and flowers or a tastefully and naturally arranged rockery or ferns, Alpine plants, and so on," &c. Again, may I ask where are we to find a "naturally" arranged rockery of ferns, alpine plants, &c.? The most natural of these are highly artificial, and are just as palling to daily acquaintanceship as any form of gardening can be. What is there original about "the sequestered spot, &c."? Why should we not have parterres and terraces and fountains? Why should not we reduce pleasure-grounds and gardens to their native simplicity and graze them with Highland cattle or high-bred Southdowns, and then what would "Adam" do?—SYLVANUS.

### KITCHEN GARDEN NOTES.

MILDEWED CROPS OF PEAS.—Mildew, I am informed, has wrought havoc on the Pea crops here for many years in succession. I am persuaded that the pest is produced by a stagnant condition of the soil resulting from disordered or defective drainage. As there was no immediate prospect last autumn of the same being examined, and if necessary rectified, I considered what would be the best method I could adopt to combat the unwelcome mildew successfully. The system of localising crops, as might be found necessary owing to the varying character of the soil in some gardens, occurred to me, as suggested by a trustworthy writer many years ago. As I had a good space at command I resolved to utilise to as great an extent as possible the south aspects of wall borders for late crops, which were much worse affected than early sorts. These were well dug and



manured, and the Peas sown in due course. The only variety grown on the borders was Veitch's Perfection, which is not considered one of the hardiest. Suffice it to say, however, that it yielded our best supply of Peas this season both as to quantity and quality, while other so-called hardy sorts were so badly mildewed that they were of little service. Omega, however, I should state was less affected than others, and from it a good number of large dishes were obtained.

**SULPHATE OF AMMONIA FOR THE ONION MAGGOT.**—Referring to this pest, a writer in the Journal about midsummer last, said that it is useless to apply any remedial measures after the maggot has attacked the crop. This is just what I was thinking at the time I read his paper in the Journal. Anxious, however, to save at least a portion of a crop of Onions which had already been attacked I resolved, after guano water and petroleum had failed, to try sulphate of ammonia. I had proved its efficacy in driving away slugs from other crops, and thought it might be distasteful to the Onion maggot also, besides stimulating the growth of the young Onions. I had four beds each 50 feet by 4 feet, and the seed was sown in rows. To the two centre beds only was the sulphate applied at the rate of one tablespoonful to each gallon of water. This checked the work of destruction, which had been going on rapidly; and although the enemy was not entirely destroyed, I am glad to say that quite double the weight of sound bulbs was secured from those rows to which the sulphate of ammonia was applied than from the others, and almost enough to maintain the usual supply. I am only sorry I did not apply this remedy on the first indication of the enemy's presence.—D. M. MONTGOMERIE, *Ayrshire*.

### A VEGETARIAN BANQUET.

THOUSANDS of persons of nearly all ranks in society have partaken of the sixpenny dinners provided by the Vegetarian Society at the Health Exhibition this year—some because they liked them, others from motives of curiosity. Opinions as to the character of the repasts vary considerably. They do not satisfy hungry persons, is perhaps almost the general verdict; but it will be conceded that the dinners are as good, wholesome, toothsome, and nutritious as any others that can be had at the price, while a bright and cheerful room with bright and cheerful waiters render the meals additionally agreeable.

The objects of the Society are to induce habits of abstinence from flesh, fowl, and fish; and to advocate the substitution of fruits and wheatmeal bread mainly, then garden produce, oatmeal, the pulses, vegetable oils, Rice, Maize, and other cereal and farinaceous food-stuffs; promoting thereby health, economy, humaneness, temperance, peace, and the general well-being, employment, thrift, and happiness of the people. Great zeal is displayed in carrying out those objects practically, as in the dinners referred to, also through the press, for the Society has a good organ in the "Dietetic Reformer," which is published monthly at the moderate price of 2s. 6d. per annum.

With the object of giving still further prominence to what is considered the advantages of a vegetable diet exclusively, a banquet was given by the President and Executive Committee of the Vegetarian Society in their restaurant at the Health Exhibition on Thursday evening last, B. W. Richardson, Esq., M.D., F.R.S., presiding. For the information of those persons who may not be very well able to understand how a banquet can be provided without animal food, we give the *menu* on this occasion including the dessert.

**MENU.**—*Soups*: Tomato and Lentil Soup. *Entrees*: Green (Sugar) Corn; Oaten Grits; Macaroni au Gratin. *Removes*: Braised Haricots; Savoury Omelette; Curried Mushrooms and Rice; Bread Fritter. *Entremets*: Boiled Chestnuts; Samp Pudding; Vegetable Marrow au Gratin. *Vegetables*: Brussels Sprouts; Potatoes; Jerusalem Artichokes; Baked Turnips. *Sweets*: Barley Pudding; Ceylon Pudding; Apple and Damson Tart; Vegetable Custard; Iceland Moss Jelly and Pine Apple. *Stewed Fruit*: Pears, Apricots, and French Plums.

**DESSERT.**—*Grapes*: Muscat of Alexandria; Muscat Hamburgh, and Black Hamburgh. *Foreign*: Lisbon Sweetwater, and Almeria. *Pears*: Duchesse d'Angoulême; Louise Bonne of Jersey, and Autumn Bergamot. *Apples*: King of the Pippins; Cox's Orange Pippin, and Ribston Pippin. *Nuts*: Walnuts, Filberts, Cobs, Hickory, Pecan, and Virginia Pea Nuts. *Bananas*, Spanish Melons, Greengage Tomatoes, and Brazilian Oranges. *Beverages*: Lemonade, Seltzer, Zoedone, Sparkling Hop, Morello Champagne, Fruit Champagne, Coffee, Cocoa, Chocolate.

The soups were excellent, and most of the dishes appeared to be enjoyed, but the Mushrooms would have been a good deal better if they had not been "tinned goods," or rather "buds," for they were poor in comparison with the produce of pastures or prepared beds in or outdoors.

At the close of the banquet Dr. Richardson delivered an admirable address, and his remarks had the greater weight from the fact that he is not quite a vegetarian, therefore not a partisan. He treated the subject impartially and philosophically; he demonstrated that animal food is not so essential to the public health as is popularly supposed; he showed that the value of fruit and grain as food is being more and more recognised, and appeared to be convinced that in the future the consumption of animal food would decrease, and nobody be the worse, but rather that everybody would be better in every way for the change. He spoke strongly of the importance of utilising the refuse of stables, the effluvia of which is so obnoxious in towns, for growing Mushrooms, which he described as the most nutritious of all vegetable food. He alluded also to the sustaining power of vegetable oils, and expressed his belief that food in every way equal to milk could be and would be produced from the vegetable kingdom. Dr. Richardson's address produced a decided impression on the meeting, and it was calculated to gain converts to the "cause;" but its effect was undoubtedly in a great measure nullified by what the majority considered the extravagant utterances of too zealous advocates of vegetarianism pure and simple. One gentleman endeavoured to prove that an exclusively vegetable diet must be sound, because he could "never touch" animal food, as if in blissful ignorance of what a writer in the Journal has described on the "palate test," did not cut in two ways. Not-

withstanding that this extreme advocate was robed in a dress made entirely from the products of the vegetable kingdom—a velvet coat, cotton cord trousers, and canvas shoes, with gutta percha soles—his views were felt to be just a little intolerant, and he was only cheered by those who needed no arguments to convince them to eschew animal food in every form. Another "example" of vegetarianism was so advanced as to express his belief that not only would the food of the future be the exclusive products of the vegetable world, but that cooking would become obsolete, and "things would be eaten raw." Both those sensational "examples" ostracised Mushrooms for the very reason that Dr. Richardson advocated their use—that they contain nitrogenous matter.

We sympathise with the work of the Vegetarian Society; we are convinced that the wholesome and nutritious qualities of the products of the soil are not sufficiently appreciated; we admire the enterprise of the officials of the organisation, but we are quite unable to feel that the peculiar utterances of what "outsiders" conceive to be the peculiar "fads" of the over-zealous can have any substantial effect in gaining adherents to the principles sought to be established by the Vegetarian Society. Dr. Richardson's address produced a decided effect, and we cannot help thinking that if it had been the only speech delivered on the occasion that the objects of the directorate of the Vegetarian Society would have been more effectually promoted.

### ORCHID NOTES.

**CATTLEYS.**—Not only is constant attention needed during the growing season to develop large pseudo-bulbs, for unless they have been made under conditions suitable to render them firm and solid they are sure to disappoint the grower when the flowering season arrives. It is next to an impossibility to expect fine large well-coloured blooms, and these produced freely from soft unripened growths. There can be no doubt whatever that the secret of flowering these beautiful Orchids satisfactorily is thorough maturation of the pseudo-bulbs and a complete season of repose. Failure in many instances may be traced to unripened bulbs and insufficient rest, but when these conditions have been accomplished flowers are certain, and strong vigorous growth the following season. Many use shading during the season of growth of too heavy a nature, which not only breaks the sun's rays, but excludes a large amount of light, which would prove beneficial to the plants. All shading will soon have to be dispensed with, yet for an hour or two during the brightest part of the day it might be serviceable to any plants in feeble health or in a backward condition of growth. When it is found necessary to apply shading in such instances the whole stock should not be subject to the same treatment. To be successful a system of sorting out must be practised, and as plants approach the completion of their growth they should be removed to more airy, drier, and lighter positions to ripen and mature them thoroughly. If convenience does not exist for removing them from the house in which they are grown—and seldom indeed can this be accomplished in the majority of gardens—they can be placed at the coolest end, and the shading so arranged that one portion can be shaded and the other not. This may cause some little inconvenience to the grower, and destroy for a time the effective arrangement of the house as a whole; but what does this matter if the plants are assisted to ripen and flower well, which would not be the case where a mixed collection is grown under any other system? In the cultivation of Orchids we are too prone to follow rules laid down on some hard-and-fast lines, and thus shade the whole to a certain day whether they require it or not, and then discontinue it altogether until some appointed day for again replacing it. Orchids are shaded in many gardens on a most injudicious principle, for the moment the first ray of sunshine strikes the house the blinds are drawn down, and remain until the last ray has disappeared from the structure. This is radically wrong, and no wonder so many specimens are to be found with long slender pseudo-bulbs that have been drawn up weakly and softly. Plants grown under such conditions cannot be expected to flower; in time their vigour is destroyed, and they gradually decline in health. If more care and attention were devoted to the ripening of the plants through the autumn months greater success would be attained, and failure reduced to a minimum.

**DENDROBIUMS.**—Like the above these often fail to grow satisfactorily or flower profusely, simply because they are not carefully and judiciously ripened and rested afterwards. The house in which they make their growth is often too moist and too heavily shaded for them to become firm, and ripen gradually but surely. It not unfrequently happens that the structure in which they have been growing contains plants that must be shaded more than is really good for the plants in question. It is difficult to suit the requirements of all exactly where mixed collections of plants are grown in the same house, and to subject the whole contents of such a structure to conditions suitable for the proper development of one species or variety would never do unless they largely predominated, and their treatment had to be considered before that of the remaining occupants. Under such conditions it is very difficult to grow the whole of the plants well, but a very large share of success can be attained if the sorting system is followed. The whole of these plants do not complete their growth at the same time, therefore to treat them as they should be treated



is the more difficult, for it frequently happens that not more than perhaps half a dozen are ready for lighter, drier, and more airy positions at the same time. These plants, when they reach this stage of growth ready for ripening and maturing, will do very well under the same conditions as the Cattleyas that have made their growth and ripened.

In many instances Dendrobiums do not flower so well or so profusely under artificial treatment as they do the first season after they are imported. This we have proved from experience to be entirely due to the often hasty and careless process of ripening the pseudo-bulbs. Although they should be gradually yet thoroughly matured it must not be done too quickly, and thus bring them prematurely to a standstill. After they are removed from the house in which they have been grown any attempt to get the foliage off deciduous varieties as quickly as possible, under the impression that as soon as they are destitute of foliage they are well ripened, is a great mistake. It is of vital importance if a rich harvest of flowers is to be the result that the work of maturation must be gradual and the plants brought from activity to enjoy their season of rest as naturally as possible. In many instances I have noticed that when these plants have been imported in good condition they often make better pseudo-bulbs the first season than they do afterwards. This is the result of the complete rest the plants enjoy by being taken from their native homes, and the weeks of cessation from activity they have before they pass into cultivators' hands. Dendrobiums need not decline in health and vigour after the first season or two if they are only well ripened and thoroughly rested. When thoroughly established on blocks, in baskets, or pots they are in a better position for resting thoroughly and starting again into growth than can possibly be the case during their journey to this country. In bringing the plants into a thoroughly ripened condition and to complete their rest they must neither be fully exposed to the rays of the sun, nor should they be suddenly dried at the roots. Both must be done carefully and gradually, and in due time the plants will flower abundantly. Not only is it necessary to rest and ripen deciduous varieties in order to flower them well, but the same care and attention is needed in maturing the growths of evergreen kinds. Some varieties require very careful treatment during the resting season, for if kept in too low a temperature the foliage will become brown at their extremity, and thus for a few seasons perhaps disfigure the appearance of the plants. The little difference in the treatment required during the resting period will soon be discovered from experience by the observant.—SCIENTIA.

#### PLANTING ROSES.

THE season for planting or transplanting Roses having arrived, the following hints may be of use to the rising generation of rosarians, who, it is to be hoped, may increase a hundredfold or more as years go by. The best time for planting Roses must depend on the sort of Roses selected, the locality where they are to be planted, as to whether it be warm and sheltered or exposed to keen winds.

There seems to be a general consent amongst rosarians that Tea Roses should be planted out in spring, Hybrid Perpetuals and others in autumn—in October or November, and not later if possible. October would be the better month in most seasons (certainly in the present year after so fine a summer), as Roses then planted would be better rooted and consequently better established before winter than those moved later.

Stereotyped systems of transplanting Roses have arisen from a mistaken notion about the "rest" of plants. Winter has been regarded as a time of complete suspension of growth. It is now, however, found that no sooner is the Rose transplanted than the severed roots make haste to renew their connection with the soil; hence the importance of moving Roses while the sap is still active and the earth and air are warm. No sooner are the roots (if sufficiently protected by mulching from being frozen) in full activity than the dangers arising from transplanting are passed.

Neither do the shoots rest entirely in the winter. The process of bud-filling proceeds all the while, unless the fluids of the plants be absolutely frozen by an exceptionally severe winter. Spring only finishes what has been going on more or less all the previous winter. The quality of the Rose buds and blossoms must be largely determined by the number and activity of the Rose roots during the winter; hence the importance of early planting on the future health and stability of our Roses. Therefore, to adopt a phrase that is familiar to most persons, "Give your orders, ladies and gentlemen, give your orders" at once.—GETA.

#### LAPAGERIAS AT WORKSOP MANOR.

IN a lean-to house facing the north at Worksop Manor, Notts, are three Lapagerias—two of the red variety and one of the white variety—which have produced this autumn over 3000 flowers, or averaging slightly over 1000 each. They have been planted four or five years, are very limited for root space, and I believe have never had any artificial manure of any description. So well flowered are these plants that I have now for two seasons counted on a spray, some 36 inches in length, more than as many flowers, which may easily be understood when it is stated that from four to seven flowers in a cluster are quite common. Of course these

large clusters are on the strongest shoots, but the weak shoots are proportionately floriferous, and anyone who cuts away these weak shoots makes a great mistake, provided room can be found for them. By weak shoots I mean anything not less than one-twelfth of an inch in diameter. Mr. Sutton lays in all the wood he can find room for, and that he is thoroughly successful has been amply demonstrated during the present autumn to the delight of scores of visitors. As an example of cultivation and floriferousness I venture to say that it is not surpassed by any in the country; and, further, that it has few equals. I have forgotten the space the plants cover, but perhaps Mr. Sutton will favour us with particulars, and also a few details of cultivation.

I attribute the success in a great measure to the aspect of the house, for no shade is required, and the Lapagerias do not receive the direct rays of the sun at any time, consequently the tender succulent shoots receive no injury from scorching, but at the same time have the great bene-



Fig. 60.—Single French Marigolds.

fit of uninterrupted light, so necessary to the due consolidation and maturation of the wood. These conditions, to my mind, are as near what the plant receives in its native habitat as we are likely to give it in this country.—J. U. S.

#### SINGLE FRENCH MARIGOLDS.

SINGLE examples of French Marigolds are common enough, and have been seen in numbers of gardens for years past, not a few of the flowers being richly marked and beautiful; but perhaps the brightest, clearest, and neatest that have come under our notice were sent a few days ago by Messrs. Garraway, nurserymen, Clifton, Bristol, as representing a strain, the result of many years crossing by Mr. E. J. Lowe. So rich and clearly defined were the colours that we requested our artist to engrave examples of the flowers, and he has certainly not invested them with any artistic merit to which they are not entitled. For various purposes of decoration these small richly coloured single varieties are admirably adapted, and the brightness of their clearly defined colours will not be disputed.

WILD BEES AND SINGLE DAHLIAS.—The single Dahlia blooms in my garden are rarely, if ever, unoccupied by wild bees, more especially by



the small yellow wild bee. Butterflies, too, seem to find something very attractive in the pollen of these flowers. Yesterday I observed an Emperor feeding apparently with the delight of an epicure and the leisure of a connoisseur. At last I disturbed him. He described a short circuit in the air and returned to the same blossom. Garden bees are seldom to be seen on Dahlia blooms here.—A. M. B.

### ROYAL HORTICULTURAL SOCIETY.

#### FRUIT AND VEGETABLE SHOW.—OCTOBER 14TH, 15TH, AND 16TH.

ONE of the most varied and interesting exhibitions held this season at Kensington is that which was opened on Tuesday last and closes this evening (Thursday). The greater portion of the Show consists of Apples, Pears, and Potatoes, but there is a good proportion of other exhibits, and on the opening day the numerous collections of flowers submitted to the Floral Committee still further increased the attractions of the display. All available space in the conservatory is fully occupied, a double row of tables down the centre bearing the fruit and Potatoes, and side tables are devoted to smaller classes.

#### PEARS.

Considering the comparative scarcity of Pears this season the display at Kensington is satisfactory and fairly representative of the leading varieties, though the competition is confined to few exhibitors, and nearly all the winning collections are from favoured Kent. The remarkable success achieved by Mr. Haycock, gardener to Roger Leigh, Esq., Barham Court, Maidstone, at the recent Crystal Palace Show was repeated at Kensington, and in the majority of cases his exhibits were so clearly superior to the others that the Judges had no difficulty in making the awards. Mr. Haycock secured no less than five first-class prizes in this section of the Show with seventy-five dishes, or a total of 375 fruits, all of highly superior merit.

Three classes were provided for collections not exceeding fifty varieties of Pears—one for nurserymen, one for amateurs, and one for growers in France and the Channel Islands. The last is, however, not represented, and in the first there is no competition; Messrs. T. Rivers & Son, Sawbridge-worth, being the only exhibitors, and securing the first prize with medium-sized fruits of the following varieties:—Durondeau, Beurré Bosc, Marie Louise d'Uccle, Napoléon, Fondante d'Automne, Rivers' Princess, Rivers' Prince, Beurré Superfin, Rivers' Fertility, Beurré Capiaumont, Swan's Egg, Marie Benoist, Vicar of Winkfield, Winter Nelis, Catillac, Pitmaston Duchess, General Todtleben, Doyenné du Comice, Huyshe's Bergamot, Bergamotte d'Esperen, Beurré Diel, Duchesse d'Angoulême, Triomphe de Jodoigne, Bijou, Louise Bonne of Jersey, Jean de Witte, Huyshe's Monarch, Comte de Lamy, Marie Louise, Beurré Rance, Lebrun, Glou Morceau, Beurré Bachelier, Thompson's, Huyshe's Victoria, Josephine de Malines, Emile d'Heyst, Beurré d'Arenberg, Seedling No. 2, and Bezi Mai. Some of these are fine, but the majority are rather below than above the average. In the amateurs' class three collections are staged, Mr. Haycock taking the premier position with large, handsome, and in several cases well-ripened fruits of the undermentioned varieties—Chaumontel, Baron Sterckmans, Baronne de Melo, Duc de Bordeaux, Durondeau, Easter Beurré, Beurré d'Anjou, Conseiller du Cour, Marie Louise d'Uccle, Nouveau Poiteau, Pitmaston Duchess, Glou Morceau, Gansel's Bagmot, Winter Nelis, Beurré Bachelier, Doyenné d'Alençon, Emile d'Heyst, Passe Crassanne, Vineuse, and Beurré Clairgeau. The second prize was awarded to Mr. Goldsmith, The Gardens, Hollenden, Tonbridge, who has a similar collection, including some very fine fruits, the best being Brockworth Park, finely ripened, Beurré Rance, Doyenné Boussoch, Beurré Superfin, Pitmaston Duchess, Louise Bonne of Jersey, Beurré Bachelier, Beurré de Capiaumont, Catillac, and Duchesse d'Angoulême. H. A. Brassey, Esq., Preston Hall, Aylesford (gardener, Mr. H. Waterman), is third, with good examples of Chaumontel, Beurré Diel, Pitmaston Duchess, and Duchesse d'Angoulême amongst others.

With twelve varieties of dessert Pears there are three exhibitors. Mr. Haycock taking the lead with magnificent fruits of Pitmaston Duchess, Triomphe de Jodoigne, Beurré Superfin, Marie Benoist, Beurré d'Anjou, General Todtleben, and Beurré Diel, which were far superior to the best shown in other collections. Mr. F. Rutland, The Gardens, Goodwood, Chichester, and Mr. Goldsmith are second and third, both showing Pitmaston Duchess and Durondeau very finely. There are five lots of six varieties, Mr. Haycock winning the first place with Durondeau, Conseiller du Cour, Doyenné du Comice, Pitmaston Duchess, Beurré Diel, and Duchesse d'Angoulême, all very handsome. Mr. Johnston, Bayham Abbey Gardens, Tunbridge Wells, is a close second, having Pitmaston Duchess very handsome, Duchesse d'Angoulême, and Beurré Bachelier also very fine. Mr. Goldsmith follows, his best fruits being Beurré Superfin, Doyenné Boussoch, and Nouveau Poiteau; Mr. Ford, Leonardslee Gardens, Horsham, being third, with Durondeau particularly fine. Amongst smaller examples of other varieties nine competitors entered with three varieties, Mr. Haycock leading with Beurré Superfin, Pitmaston Duchess, and Beurré Diel. Mr. Goldsmith follows with Beurré Diel, Beurré Superfin, and Beurré Boussoch, slightly smaller; and an equal second prize was awarded to Mr. Johnston for good fruits, Duchesse d'Angoulême being the best. A similar number of competitors staged in the class for one variety, the highest in flavour; and in this Mr. Ross, The Gardens, Welford Park, Newbury, is first with finely ripened fruits of Seckle, which is also shown by two other exhibitors, but unsuccessfully. Mr. Johnston is second with Gansel's Bergamot, and Mr. Haycock third with Beurré Superfin, both well ripened. Some good fruits of Soldat d'Esperen are also staged in this class by one exhibitor. A class is provided for any variety certificated by the Royal Horticultural Society, but there is only one entry, Mr. Haycock being awarded the first prize for beautiful fruits of Pitmaston Duchess. The same exhibitor has the best three dishes of stewing Pears—namely, Bellissime d'Hiver, Uvedale's St. Germain, and Catillac, all of great size. Mr. Rutland is second, having Grosse Calebasse in place of the first-named in the previous collection, the other two being the same. Mr. Johnston is third with Verulam, Catillac, and Bellissime d'Hiver.

#### APPLES

The eight classes provided for these are for special varieties, and brought

excellent competition; while in addition the nurserymen's not-for-competition exhibits occupy considerable space, and together they constitute a display of considerable extent. Twenty-one dishes of Blenheim Pippin are staged, the fruits varying greatly in colour, some being of an extremely rich and uniform red, while others are comparatively green. Mr. John Walker, Thame, Oxon, is first with large and deep red specimens, very beautiful; Mr. Ford is second with slightly smaller but similarly coloured specimens; while Mr. G. Goldsmith is third with large but duller examples, a dish from Mr. Ross being commended. Cox's Orange Pippin is similarly strongly shown, twenty-two dishes being entered. Mr. Haycock is again in the foremost position with even beautiful fruits of fine colour. Mr. A. Waterman is second with equally handsome but smaller fruits, and Mr. Goldsmith third. Twenty-three dishes of King of the Pippins are entered, all very good and close in merit, the prizes being secured by J. T. Friend, Esq., Northdown, Margate (gardener, Mr. F. Miller), Mr. Rutland, and Mr. Goldsmith in that order. Only eight exhibitors of Mère de Ménage appear, Mr. Ross leading with large, even, and deeply coloured examples. Mr. Walker follows with very large but less well-coloured fruits, and Mr. Haycock is third for large irregular samples. In the class for a dish of Golden Noble or Waltham Abbey Seedling there are seventeen competitors, nearly all staging the first-named variety. Mr. F. Miller secures the chief award for beautiful fruits of Golden Noble of a clear pale golden hue; the Right Hon. G. J. Goschen, M.P., Seacox House, Hawkhurst (gardener Mr. J. Gilmour), is second with Waltham Abbey Seedling fine; and Mr. G. T. Miles, Wycombe Abbey Gardens, takes the third place with Golden Noble, a dish of the same variety from Mr. Goldsmith being commended. No prizes were awarded in the class for the old Golden Pippin, none of the five exhibitors having the true variety. Of the eight dishes of Court of Wick entered Mr. Waterman had the best; Mr. T. Bailey, Shardeloes, Amersham, and Mr. Haycock being second and third. The competition was keen in the class for a dish of any variety of Apple certificated by the Royal Horticultural Society, eight entering. Mr. Haycock was again the premier exhibitor, having superb fruits of Peasgood's Nonesuch, large, handsome in form, and finely coloured. Mr. F. Miller is second with Loddington, large and handsome; Messrs. Lane & Son, Great Berkhamstead, being third with Lane's Prince Albert very good, five other dishes of that variety being shown by the same firm. Mr. Ross has some admirable fruits of Peasgood's Nonesuch, and Messrs. Saltmarsh similarly good samples of The Queen, both of which were commended, the other varieties shown are Lady Henniker, Cellini, and Tylor's Kernel.

#### MISCELLANEOUS FRUITS.

*Peaches.*—Prizes were offered for one dish of Peaches, six fruits, and ten competitors entered, all showing fine specimens, and mostly remarkable for their high colour. Mr. Rutland is first with Salwey, very handsome. Mr. J. Staples, Chipstead Gardens, Sevenoaks, is second with Walburton Admirable of fine colour; and E. M. Nelson, Esq., Hanger Hill House, Ealing (gardener, Mr. Chadwick), is third with Walburton Admirable of excellent colour.

*Plums.*—The competition is still keener with Plums, fifteen dishes being staged, and of these twelve are of one variety—Coe's Golden Drop, differing considerably in size and ripeness, but all those in the three winning collections were of remarkable merit. Mr. Staples has, however, the best, beautiful fruits, perfectly ripe. Mr. Haycock and Mr. J. Bolton, Coombe Bank Gardens, Sevenoaks, are second and third with slightly smaller fruits.

*Open-air Grapes.*—Two classes were devoted to Grapes grown in the open air, one being for six bunches and the other for two bunches. In the first there are six entries, Mr. Tranter, Upper Assenden, taking premier honours with half-a-dozen well-ripened bunches of Sweetwater. The other prizetakers, Mr. C. J. Nichols, Sundridge, Sevenoaks, and Miss Wood, The Elms, Hanger Hill, Ealing, both staged the same variety. With two bunches there are five exhibitors; Mr. G. Bloxham, Great Brickhill, Bletchley, Mr. Tranter, and Mr. Nichols being the prizetakers, all showing the same variety as in the preceding class.

Only one collection of Oranges of home growth is contributed—namely, three dishes of small but well-ripened fruits from Mr. Walker, for which the second prize was awarded. Ten dishes of Siberian Crabs are entered, Messrs. Saltmarsh being first with Dartmouth, good-sized fruits of a rich red colour. J. Norris, Esq., Castle Hill, Bletchingley (gardener Mr. G. Holliday), and W. L. Gower, Esq., Titsey Place, Limsfield, second and third, each with brightly coloured fruits.

*Miscellaneous.*—A class for miscellaneous fruits was provided; but no stipulation was attached, and in consequence some incongruity is observable in the respective merits of the exhibits. There are ten entries. Mr. Charles Herrin, Chalfont Park Gardens, Gerrard's Cross, was deservedly awarded the premier prize for fourteen handsome seedling Melons beautifully netted. Mrs. Vivian, Singleton, Swansea (gardener Mr. J. Harris), is second with six Pine Apples, even, but of moderate size; and Mr. Ross is third with two handsome Smooth Cayenne Pines weighing 8 lbs. 4 ozs. and 8 lbs. 6 ozs. each. The prizes offered are 30s., 20s., and 10s., so that the two magnificent Pines just noticed received an award of equal value with the third-prize dish of King of the Pippin Apples.

#### VEGETABLES.

*Collections.*—As at all the Kensington exhibitions, the vegetables are extremely fresh, clean, and well grown, the competition keen, and the winners consequently have every reason to be satisfied of their success. Mr. G. T. Miles, Wycombe Abbey Gardens, occupies his usual position with most praiseworthy examples of the following:—Stamfordian Tomatoes, very handsome; Tender and True Cucumbers, even and neat; Cave's Pinesfield Improved Onions, good; Canadian Wonder Beans, Allan's Champion Peas, James' Intermediate Carrots, Lady Paget Potatoes, and Veitch's Exhibition Sprouts. The Earl of Radnor, Coleshill House, Highworth (gardener, Mr. Haines), follows very closely with Autumn Giant Cauliflower, fine, white, and solid; Schoolmaster Potatoes, Sutton's Exhibition Sprouts, Tender and True Cucumbers, Stamfordian Tomatoes, and Improved Reading Onions. Dr. Baber, the Deodars, Meopham, Kent (gardener, Mr. Phillips), takes the third place with a very creditable collection, in which the most noticeable dishes are Carentane Leeks, Autumn



Giant Cauliflower, and Perfection Tomatoes. There are four other exhibitors with less regular but meritorious collections.

**Potatoes.**—The display of Potatoes is extensive and excellent, the tubers throughout being of moderate size, smaller than we are accustomed to see them at shows of this character, but so clean, even, and free from defects that they seem much more generally satisfactory. The principal class is that for fifty varieties, in which Mr. W. Kerr, Potato grower, Dargavel, Dumfries, has succeeded in gaining the first honours with a handsome collection, well deserving its position. The varieties represented are as follows:—White Elephant, Edgote Purple, Duke of Albany, Magnum Bonum, Wonderful Red, Lady Truscott, Peach Blow, Early King, Wiltshire Giant, Fillbasket, Woodstock Kidney, Dargavel Beauty, Breese's Prolific, Defiance, American Giant, Red Fluke, Cromwell, Trophy, Brownell's Best, Mr. Breese, Schoolmaster, Victoria Alba, Vicar of Laleham, International Kidney, Early Ohio, Mammoth Pearl, Fifties Annie, Clyffe Hall, Dargavel Pride, Excelsior, Red Emperor, Blanchard, Reading Russet, Prizetaker, St. Patrick, Lord Rosebery, King Offa, Adirondack, Manhattan, Heatherbell, Matchless, Cosmopolitan, Purple Kidney, Sir Garnet Wolseley, and another unnamed. Mr. R. Dean, Ealing, and Mr. C. Osman, Sutton, Surrey, are second and third, each with good collections.

A class is provided for twelve varieties for garden culture, and in this Mr. R. Dean is first amongst the seven exhibitors, staging excellent even tubers of Beauty of Hebron, Vicar of Laleham, Ashleaf Kidney, Woodstock Kidney, Cosmopolitan, Matchless, Reading Russet, Snowdrop, Radstock Beauty, Snowflake, Lapstone, and Sunrise. Mr. J. Hughes, Eydon Hall, Byfield, Northampton, is second, and equal third prizes are awarded to Mr. W. Kerr and Mr. G. Howard, Bridge, Canterbury. In a similar class for twelve field varieties Mr. R. Dean is again first with The Dean, Chancellor, Magnum Bonum, Woodstock Kidney, Vicar of Laleham, Cosmopolitan, Reading Russet, Schoolmaster, Beauty of Hebron, Reading Hero, Adirondack, and Snowdrop. Messrs. Howard and Kerr are second and third with twelve late varieties. Mr. R. Dean is also the premier exhibitor, showing Magnum Bonum, Vicar of Laleham, Reading Hero, Bedford Rose, Chancellor, Mr. Breese, Prime Minister, The Dean, Schoolmaster, Manhattan, White Giant, and Beauty of Kent. Messrs. Kerr and Prangnell follow in that order.

**English Varieties of Potatoes.**—Three prizes were offered for a collection of English-raised varieties of Potatoes with their pedigrees, but only two are entered—namely, by Messrs. R. Dean and C. Ross, the former gaining the chief honours with the following varieties:—Vicar of Laleham (Peake), a coloured round from Paterson's Victoria and Red Emperor. Cosmopolitan (Dean), a white kidney from American Success and Woodstock Kidney. The Dean (Dean), a coloured round from Vicar of Laleham and Fenn's Woodstock Kidney. Prime Minister (Dean), a white round from Magnum Bonum and Woodstock Kidney. Edgote Purple (Wiles), a coloured round from Edgote Seedling and Purple Ashleaf. Sunrise (Dean), a white round from Beauty of Hebron and Woodstock Kidney. Prizetaker (Fenn), a coloured kidney from American Willard and Fenn's Bountiful. International (Fenn), a white kidney from Dawe's Matchless and Fenn's Early White Kidney. Cardinal (Dean), a coloured kidney from American Early Rose and Fenn's Bountiful. Perfection (Lye), a white round from Porter's Excelsior and Radstock Beauty. Rosebud (Dean), a coloured round from Fenn's Woodstock Kidney and Beauty of Hebron. London Hero (Dean), a white round from Emerton's Advance and Woodstock Kidney. Bedford Rose (Dean), a coloured round from Fenn's Woodstock Kidney and Beauty of Hebron. Alderman (Dean), a white kidney from American Early Rose and Fenn's Early Market. Wiltshire Giant (Lye), a coloured kidney from Improved Peach Blow and American Trophy. Standwell (Dean), a white round from Vicar of Laleham and Fenn's Woodstock Kidney. Progress (Lye), a coloured kidney from Fenn's Bountiful and American Early Rose. Recorder (Dean), a white kidney from American Success and Woodstock Kidney. Reading Russet (Fenn), a coloured round from American Willard and Fenn's Bountiful. Clyffe Hall (Lye), a white kidney from Improved Peach Blow and a seedling. Pride of Clyffe (Lye), a coloured round from Bountiful and Mona's Pride. Harvester (Dean), a white round from Beauty of Hebron and Woodstock Kidney. President (Dean), a white round from Woodstock Kidney and Magnum Bonum. Chancellor (Dean), a white kidney from Magnum Bonum and Emerton's Advance.

A similar class was also provided for American varieties, and in this Mr. W. Kerr was the only exhibitor, and was awarded the first prize. It was, however, subsequently represented that the collection was not in compliance with the stipulation in the schedule, as no pedigree was given, and the prize card was removed. The varieties are Early Vermont, Mammoth Pearl, Triumph, Queen of the Valley, Manhattan, Adirondack, Trophy, Snowflake, and White Elephant.

#### NON-COMPETING EXHIBITS.

Several nurserymen and seedsmen contributed large and handsome collections of Apples and Potatoes, which occupy more space in the conservatory. The Apples are particularly noteworthy, and prominent amongst them is the collection from Messrs. J. Veitch & Sons, Chelsea, which comprises 100 dishes of fine fruits, representing all the best varieties in cultivation. Messrs. J. Cheal & Son, Crawley, also have a remarkably handsome collection of seventy dishes of Apples and twenty of Pears, all of good size, and the former are distinguished by their fine colour, all the fruits being clean and well grown. Messrs. Paul & Son, Cheshunt, have seventy dishes of Apples, mostly of fine quality. Messrs. G. Bunyard and Son, Maidstone, show an admirable collection of sixty dishes of Apples, large and excellently coloured. The London Provincial Dairy Company, Belgrave Square, also have twenty-four dishes of Apples; and Mr. Ford, Leonardslee, the same number of dishes, but with much finer fruits.

Potatoes are extensively represented. Messrs. Sutton & Sons, Reading, have an extensive and interesting collection of about 130 varieties and twenty-nine seedlings, the same as those shown by this firm at the International Potato Exhibition last week. Messrs. J. Carter & Co., High Holborn, also have a large collection of useful well-proved varieties, including Schoolmaster, White Elephant, Magnum Bonum, Beauty of Hebron, Early Ashleaf, and Ashton Fluke. Mr. S. Ford exhibited twenty-four varieties of fine clean well-developed tubers. A large and handsome collection of Gourds was shown from the Society's Gardens, Chiswick, and were greatly admired.

#### COMMITTEES.

**FRUIT COMMITTEE.**—Present: H. J. Veitch, Esq., in the chair; and Messrs. S. Lyon, C. Ross, G. Goldsmith, H. W. Sutton, J. Ellam, J. E. Lane, J. Burnett, J. M. Breese, Philip Crowley, F. Rutland, W. Paul, C. Silverlock, Sidney Ford, G. Bunyard, and R. D. Blackmore.

Mr. B. S. Williams, Upper Holloway, exhibited two bunches of Winter King Grape, described as a sport from Gros Colman grafted on Raisin de Calabre. The berries are large, oval, black, and bear a dense bloom, but the specimen shown was not in its best condition as regards ripeness. The Committee expressed a desire to see fruit of the variety from Vines on their own roots. H. D. Pochin, Esq., Bodinant, Eglaysbach, Denbighshire (gardener, Mr. F. Saunderson), exhibited twelve bunches of Grapes, six each of Muscat of Alexandria and Alicante, both large and well coloured, the Muscats in particular being very handsome. A cultural commendation was awarded for them. Messrs. T. Rivers & Son, Sawbridgeworth, sent bunches of yellow and purple Grapes loaded with brightly coloured fruits, and a dish of Rivers' Monarch Plum, a fine purple variety. Mr. W. Jacobs, Petworth Park, Sussex, showed several dishes of Apples, amongst which was a variety named Cumberland Codlin, much like Yorkshire Beauty, and some good fruits of Nanny, esteemed by the exhibitor as "a useful dessert variety." The Rev. J. A. Williams, Aldermaston Lodge, Stratford-on-Avon, showed some fine fruits of Margil Apple. Messrs. A. Dickson & Son, Newtonards, Belfast, also sent an Apple named Logan's Seedling, and several others were shown for name. Mr. R. Dean, Ealing, had a large round smooth-fruited Tomato, named Prince of Orange. Mr. R. Phillips, The Gardens, Deodars, Meopham, also had a dish of his handsome Perfection Tomatoes; and Mr. G. T. Miles, Wycombe Abbey Gardens, showed a dish of a fine red round Tomato. Mr. G. Ward, Bishops Stortford, exhibited samples of his patent trough for keeping Grapes, which have already been described in this Journal. They attracted much attention from the gardeners present, and the general opinion was that the contrivance is a very simple and excellent one, obviating many inconveniences arising from the use of bottles. Mr. C. Ross, The Gardens, Welford Park, Newbury, exhibited a Melon, a cross between Dickson's Exquisite and Hero of Lockinge, well netted and of fair flavour.

A cultural commendation was awarded to Col. Turbeville, Ewenny Priory, Bridgend, South Wales, for a dozen handsome fruits of Duchesse d'Angoulême, which weighed in the aggregate 11 lbs. 6 ozs., large, clean, and well ripened. Mr. W. Bull, Chelsea, showed a dish of fruits of Kelsey's Japan Plum from California, for which a vote of thanks was accorded. The fruits are conical in shape, with a red skin and a yellowish flesh, resembling a dark-coloured Nectarine externally.

A silver Banksian medal was awarded to Mr. J. B. Thomas, Covent Garden, London, for eighteen barrels of American Apples just as they are imported. The fruits were in good condition, the best varieties being Belleflower, Nonesuch, Golden Russet, Baldwins, Greenings, and Northern Spy.

**FLORAL COMMITTEE.**—Section A.—Present, Mr. John Fraser in the chair; and Messrs. E. Hill, J. Dominy, James Hudson, John Woodbridge, H. Herbst, F. R. Kinghorn, J. Laing, and Dr. M. T. Masters. Section B.—Shirley Hibberd, Esq., in the chair, and Messrs H. Cannell, H. Turner, H. Bennett, W. Bealby, J. James, G. F. Wilson, G. Duffield, J. Child, W. B. Kellock, and J. Douglas. Messrs. J. Veitch & Sons, Chelsea, show plants of Dendrobium Phalaenopsis and Sarracenia Wrigleyana, both of which were certificated, and are described at the end of this report. Mr. B. S. Williams, Upper Holloway, had several plants of the beautiful autumn-flowering Amaryllyis Mrs. Garfield, the flowers white veined with light rose, and borne five to six in a head. The graceful Sonchus elegantissima with finely divided leaves, and the distinct Corynocarpus laevigatus aureus marginatus with broad elliptical leaves, dark green edged with yellow, were also represented, together with a specimen of Cyrtanthus lutescens, for which a botanical certificate was awarded. J. Berners, Esq., Wolverston Park, Ipswich (gardener, Mr. J. Sheppard), showed two seedling Crotons, one named C. Gem from C. Wiesmanni and C. majesticus, and C. Sheppardi from C. Wiesmanni and C. Morreanus. Both have narrow leaves 8 to 12 inches long marbled with green and gold, but they are much alike. W. Vanner, Esq., Camden Wood, Chislehurst (gardener, Mr. W. Robins), was awarded a vote of thanks for a fine variety of Phalaenopsis Sanderiana, named magnifica, which had flowers 2½ inches in diameter and deeply coloured. Mrs. Adams, Ashton House, Ashton-on-Mersey (gardener, Mr. H. Beard), exhibited some remarkably handsome flowers of Celosia plumosa most varied and rich in colour, the yellow, scarlet, and crimson tints being particularly good, and the panicles are light, graceful, and feathery, as the name implies. A cultural commendation was awarded for this exceedingly beautiful strain.

Messrs. H. Cannell & Sons, Swanley, contributed a very interesting and beautiful collection, including some large plants of the old but little-known and very showy Leonotis Leonurus, this hardy plant attaining the height of 3 or 4 feet, branching freely and producing its long rich orange-coloured tubular flowers in dense whorls from the axils of the leaves. A cultural commendation was awarded for the plants. A stand of fine Zonal Pelargonium blooms was also shown, the best being Cato, bright scarlet, Ida Walter, dark scarlet, Eurydice, deep pink, and Imogene, bright salmon, being beautiful. A vote of thanks was accorded for a number of flowers of the old Dahlia picta formosissima, the florets yellow edged with scarlet. A fine collection of Pompon Dahlias was similarly noteworthy, and some profusely flowered plants of the pink Begonia Martiana attracted much attention. Messrs. Rawlings Bros., Romford, exhibited a collection of ninety blooms of Show and Fancy Dahlias with a number of seedlings. All the flowers were large and of great substance, some neat Pompon Dahlias being also included. A vote of thanks was adjudged for them. Mr. Ware, Tottenham, sent flowers of a pale yellow Cactus Dahlia, very distinct, and pretty. W. Keith, Esq., Cornwalls, Brentwood (gardener, Mr. T. J. West), exhibited thirty-six blooms of well-grown Dahlias, admirable in form and substance; some Pompon Dahlias were also good from the same exhibitor. Messrs. J. Cheal & Son, Crawley, had a choice collection of single Dahlias, including several very distinct and meritorious varieties, and a stand of variegated and flowering shrubs and trees. Mr. J. King, Rowsham, sent a new Coleus Duke of Connaught, the leaves crimson, edged with pale yellow, and prettily crested. Mr. Wiggins, gardener to W. Clay, Esq., Kingston, showed some new Cyclamens, the most notable being the "new foliage" variety, which has pretty leaves, with a green centre and a neat margin of silver. A cul-



tural commendation was awarded to Messrs. Collins Bros., Blackfriars Road, for twelve home-grown bulbs of *Lilium auratum*, similar to those recently noted in this Journal.

Certificates were awarded for the following plants:—

*Dendrobium Phalaenopsis* (Veitch).—A native of Tenier, but suggestive of some of the Australian species in the form of the flower. The blooms are borne in a raceme of about six, the petals crimson purple, the lip of similar colour but richer, the sepals being pale and nearly white.

*Sarracenia Wrigleyana* (Veitch).—A hybrid from *S. psittacina* and *S. Drummondii rubra*, with pitchers of medium size, but richly veined with red on a white and semi-transparent ground. Very handsome and distinct.

*Cyrtanthus lutescens* (Williams).—A bulbous plant with umbel-like clusters of tubular white or yellowish flowers  $2\frac{1}{2}$  inches long, the leaves slender and grass-like. A botanical certificate was awarded for this plant.

*Tuberous Begonia Felix Crousse* (W. Bealby).—A fine double scarlet variety, very bright and distinct in the form of the flowers. Extremely floriferous and dwarf in habit.

*Tuberous Begonia King of Kings* (Cannell).—A single variety, remarkable for the symmetrical form of the flowers, which are about 4 inches in diameter. The petals broad and rounded, and of an intense scarlet colour.

*Pompon Dahlia La Petite Barbier* (Cannell).—A very neat pure white variety.

*Pompon Dahlia Frau Emil Heinricke* (Cannell).—Similar to the above in size and form, but of a clear soft pink hue.

*Pteris cretica cristata compacta* (H. B. May).—A crested form of this useful *Pteris* with pretty fronds, of extremely compact dwarf habit and a fresh shade of green. It will be a most useful variety for decoration.

*Chrysanthemum Golden Madam Desgranges* (G. Wermig, Woking).—A rich yellow sport from the well-known *Madame Desgranges*, precisely similar in form of flower, profuseness, and early flowering. Certificated as a decorative variety.

*Lapageria rosea superba*, Nash Court variety (Humphreys).—An exceedingly handsome variety, with flowers 4 to 5 inches long and proportionately broad, of a deep rose colour.



#### HARDY FRUIT GARDEN.

*The Planting Season.*—By the end of October everything should be in readiness for fruit-tree planting—the drains, the stations, stakes and labels, and litter for mulching. Then, by ordering the trees now, planting should begin the first week in November, and be done quickly and well. We mention drainage first advisedly, in order that due provision may be made both for the present and future. Connect each station made in a close soil retentive of moisture with a drain at once, so that if wet weather sets in during the work there may be no accumulation of water in the stations. Make the stations 6 feet square and 2 feet 6 inches deep, fill the bottom 6 inches with concrete made of one part fresh-slaked lime to six parts broken stones, bricks, or gravel. Upon the concrete, and pressed slightly into it, lay a row of common 2-inch land drain pipes across the middle of the station, connecting the pipes with the nearest drain. Fill the station with fertile turfy loam, mixing enough coal ashes or charcoal with it to render it porous after the decay of the turf, and raise it fully 6 inches above the surface to allow for settling down. Failing a supply of loam use a compost somewhat like it in freshness and fertility, or ordinary garden soil. We have now a compost heap admirably suitable for filling stations, consisting of decayed garden refuse, road sidings, coal ashes, lime, and a little stable manure, which has been well mixed and is the accumulation of the past twelve months.

#### SORTS OF FRUIT OF PROVED EXCELLENCE FOR A LARGE GARDEN.

*Dessert Apples.*—Margaret, Joaneting, Mr. Gladstone, Kerry Pippin, Worcester Pearmain, Yellow Ingestrie, King of the Pippins, Margil, Hubbard's Pearmain, Pine Golden Pippin, Cox's Orange Pippin, Pine Apple Russet, Golden Russet, Melon Apple, Cobham, Cockle's Pippin, Reinette Van Mons, Cornish Gilliflower, Lord Burghley, Sturmer Pippin.

*Kitchen Apples.*—Duchess of Oldenburgh, Keswick Codlin, Lord Suffield, Manks Codlin, Warner's King, Wormsley Pippin, Cellini, Nelson's Codlin, Loddington, Stirling Castle, Ecklinville Seedling, Small's Admirable, Golden Noble, Gloria Mundi, Cox's Pomona, New Hawthornden, Tower of Glamis, Mère de Ménage, Blenheim Pippin, Northern Greening, Striped Beefing, Dumelow's Seedling, Hanwell Suring, Gooseberry.

*Pears.*—Summer Doyenné, Citron des Carmes, Jargonelle, Williams' Bon Chrétien, Colmar d'Été, Désiré Cornélis, Souvenir du Congrès, Fondante d'Automne, Duchesse d'Orleans, Comte de Lamy, Madame Treyve, Gratioli of Jersey, Fondante de Charneau, Marie Louise d'Uccle, Doyenné du Comice, Knight's Monarch, Seckle, Urbaniste, Maréchal de Cour, General Todleben, Dana's Hovey, Comte de Flandre, Hampson's Forelle, Josephine de Malines, Jewess, Zéphirin Grégoire, Besi Vaet, Winter Nelis, Beurré Superfin, Huyshe's Victoria, Glou Morceau, Easter Beurré, Madame Millet.

*Dessert Plums.*—Green Gage, Purple Gage, McLaughlin's Gage, Transparent Gage, Reine Claude de Bavay, Washington, Bryanston Gage, Denniston's Superb, Jefferson, Coe's Golden Drop, Kirk's, Blue Impératrice.

*Cooking Plums.*—Early Rivers, Early Orleans, Victoria, Lafayette, Prince Englebert, Diamond, Automne Compôte, Belle de Septembre, Cluster Damson.

*Cherries.*—Early Purple Gean, Early Rivers, Belle d'Orleans, Empress Eugénie, May Duke, Black Tartarian, Governor Wood, Archduke, Reine Hortense, Transparent, Bohemian, Black Bigarreau, Bigarreau, Belle Magnifique, Elton, Late Duke, Morello.

*Peaches.*—Alexander, Early Beatrice, Early Albert, Rivers' Early York, Dr. Hogg, Grosse Mignonne, Royal George, Noblesse, Belle Bauce, Barrington, Walburton Admirable.

*Nectarines.*—Advance, Lord Napier, Stanwick Elruge, Downton, Rivers' White, Pitmaston Orange, Balgowan, Pine Apple.

*Miscellaneous Fruits.*—Figs—Brown Turkey, Brunswick. Apricots—Kaisha, Large Early, Moorpark, Peach, Orange. Medlars—Dutch, Nottingham. Nuts—Cosford, Pearson's Prolific, Cob, Red Filbert, Duke of Edinburgh. Raspberries—Prince of Wales, Carter's Prolific, Yellow Antwerp, Belle de Fontenay. Gooseberries—Early Sulphur, Green Gage, Red Warrington, Red Champagne, Yellow Champagne, Ironmonger, Keen's Seedling, Pitmaston Green Gage, Roaring Lion, Crown Bob, Green Walnut. Currants—Red Dutch, Victoria, White Dutch, Lee's Prolific Black.

**SELECTIONS OF THE BEST FRUIT FOR A SMALL GARDEN.**—*Six Dessert Apples.*—Margaret, Worcester Pearmain, Irish Peach, Margil, King of the Pippins, Cox's Orange Pippin. *Six Cooking Apples.*—Early Julien, Keswick Codlin, Warner's King, Stirling Castle, Small's Admirable, Tower of Glamis.

*Twelve Pears.*—Williams' Bon Chrétien, Fondante d'Automne, Comte de Lamy, Doyenné du Comice, Knight's Monarch, Dana's Hovey, Comte de Flandre, Glou Morceau, Jewess, Winter Nelis, Bergamotte Esperen, Easter Beurré.

*Six Dessert Plums.*—Green Gage, McLaughlin's Gage, Transparent Gage, Reine Claude de Bavay, Coe's Golden Drop, Blue Impératrice. *Six Cooking Plums.*—Early Rivers, Victoria, Diamond, Early Orleans, Belle de Septembre, Cluster Damson.

*Six Peaches for Open Walls.*—Early Beatrice, Rivers' Early York, Dr. Hogg, Grosse Mignonne, Belle Bauce, Walburton Admirable. *Six Nectarines for Open Walls.*—Advance, Lord Napier, Stanwick Elruge, Pitmaston Orange, Balgowan, Pine Apple.

*Six Cherries.*—Early Purple Gean, May Duke, Bigarreau, Governor Wood, Belle Magnifique, Morello.

*Two Apricots.*—Kaisha, Peach. *Figs.*—Brown Turkey, Brunswick. *Medlar.*—Nottingham. *Nuts.*—Cosford, Pearson's Prolific. *Currants.*—The same as for large gardens. *Gooseberries.*—Early Sulphur, Pitmaston Green Gage, Red Champagne, Warrington. *Raspberries.*—Prince of Wales, Carter's Prolific, Yellow Antwerp.

#### FRUIT-FORCING.

*VINES.*—*Earliest House.*—Vines that were pruned and cleansed in September should be kept clean and airy, ventilating freely until the time arrives for forcing. If the inside borders have become very dry a series of gentle waterings will be necessary to thoroughly moisten the soil. Warm water at a temperature of 90° will be necessary. It will be well to cover the border with a loose mulching to insure the even distribution of the water.

*Early-forced Vines in Pots.*—If the house is ready, well heated and ventilated, the early-fruiting Vines may be placed in position for forcing. Top-dress with rich compost, and enlarge the openings at the sides and bottom of the pots to let the roots find their way into the plunging material, which is a consideration both as regards crop and quality and to allow the water, of which copious supplies are required, to pass away freely. Place them on solid pedestals that will not give way when the fermenting material used for bottom heat requires turning.

*Young Vines in Pots.*—Those required for cutting back either for growing on into fruiting canes or planting in the spring should be moved to a cold house or west wall, to which they can be made secure from injury by wind, and protect the pots with spent tan or litter.

*Houses of Ripe Black Hamburgs.*—Where these and other thin-skinned Grapes are hanging they will require very careful management to ensure their keeping through November, the most trying month generally of the whole year. Very often at this time the ground is cold and wet, the atmosphere damp and heavy, with little or no wind, and the sun rarely breaks through the gloom. To counteract the effects produced by these unfavourable conditions plants of all kinds requiring water should be taken out of the house, all laterals removed, and if the borders are damp, as they ought fairly to be alike for the benefit of the roots and the keeping of the Grapes, a good covering of dry fern or clean straw will take up a considerable moisture. Gentle fires will be necessary, and the ventilators near the ground must be closed in damp weather. Examine the bunches twice a week for decayed berries, keeping every part of the house clean and close before sunset, when the heat should be turned off or reduced.

*Late Grapes.*—Lady Downe's, Alicantes, &c., keep better than Black Hamburgs and Muscats, but everything that is likely to harbour damp should be removed. Where Grapes have not finished well and the borders are at fault advantage should be taken of the mild weather for lifting and relaying the roots in new compost. Thoroughly drained narrow and shallow borders are less likely to go wrong, and are less expensive than the rich ponderous masses that produce enormous bunches mostly of badly coloured Grapes for a few years, and decline before the Vines are old enough to give the highest quality of which they are capable. Late Vines now ripening off their crops and having good



borders will only need the annual top-dressing, and may be divested of the mulching as soon as the wood is ripe, using good turf with charcoal, charred refuse, and a sprinkling of bonemeal, spreading evenly over the surface. Place shutters or lights over the outside border with a sharp pitch to the front, leaving them open at the ends to admit a free circulation of air, and let them remain until the Grapes are cut either for use or bottling. The best time to cut for late use is early in January, and medium-sized bunches of Lady Downe's from the oldest Vines are the best to keep for April and May.

**PEACHES AND NECTARINES.—Early Houses.**—The trees will now need to be examined and receive their final pruning, but where this was carefully performed as soon as the fruits were gathered the operation will be light. Wash the trees, both old and young wood, with an approved insecticide, and repeat if the trees are infested with scale. Paint the trellis and the interior of the house if it be necessary before the trees are tied to the trellis. The lights should remain off until the middle of next month, or if unusually wet they may be put on at the end of this, but admit air freely when frost does not prevail. Some growers have an impression that the casting of the buds is caused by the imperfect ripening of the wood; but so far from this being the case, in early houses it more frequently results from the trees which have been resting through August and September being excited, and again checked in October, before forcing is commenced. To counteract this all early houses should have portable roofs, and full exposure to the autumnal rains will insure a thorough moistening of the soil and continued rest to the trees. Although fixed roofs answer very well for midseason and late houses, yet a month or two exposure cleanses and invigorates the trees and greatly improves the inside borders by thoroughly moistening them.

**Succession Houses.**—Proceed with root-pruning and lifting as soon as the leaves are falling from the trees freely. Provide free drainage; use a good compost—good loam from an old pasture, with a liberal admixture of charred refuse and lime rubbish. Keep the roots near the surface, and ram firmly as the work proceeds; and although Peaches and Nectarines will grow in almost any kind of fresh well-drained soil, a firm compost that offers some resistance, and does not soon become dry, always sets, swells, and finishes the best fruit.

**Unheated Houses.**—Trees in these will require a dry bracing atmosphere, with a free circulation of air to check and harden the young growths. Remove every shoot that will not be required for next season, especially the gross watery growths that are not likely to ripen or form perfect flower buds. Old trees that carry good crops of fruit and receive attention to the roots as they need it do not, as a rule, make strong wood, but vigorous young ones are not so easily kept within bounds, as they often make growth late in the season. Where this is the case the strongest shoots should be pinched, and a trench formed at a distance from the stem equal to a third of the height of the trees, and it can be kept open for a fortnight or three weeks. The distance from the base of the stem, if one-third be too far, should be such as will insure catching and shortening the strongest roots. Although trees succeed in unheated houses in most instances, there ought always to be means of heating in severe frost and insure a good set in prolonged dull wet weather in spring, and in autumn if necessary, to harden and plump the buds.

#### PLANT HOUSES.

**Celosias.**—Any plants in a backward state should without further delay be introduced into a night temperature of 60° to forward them as rapidly as possible. A little heat in the latter stages of development is beneficial, for their beautiful plumes lengthen out much better in heat at this season of the year than they do in a cool structure. The plumes are also brighter in colour. To all plants that have filled their pots with roots weak stimulants should be given until the plumes are thoroughly developed, when it may be discontinued, for the plants do not appear to be benefited by its use afterwards. When these plants are placed in the conservatory or other structure where the night temperature does not range above 45° at night, they must be watered with great care, for they are very liable to damp-off close to the base. Plants that are developing their plumes satisfactorily will, if carefully watered, last in good condition for three months. These plants are also invaluable for room decoration.

**Primula obconica.**—Plants that were raised as advised in spring are now strong and established in 5 and 6-inch pots, and if they have not commenced producing their flowers will do so at once if placed in a temperature of 45° to 50°. Although this Primula is said to be hardy we have found it an admirable plant for conservatory decoration in pots during the autumn, winter, and spring. Plants that commence flowering towards the end of this month will continue in the temperature named without looking shabby until the month of May. This variety is as easily grown as the varieties of *P. sinensis*, and will without doubt become very popular for indoor decoration.

**Primula sinensis.**—These plants should now be removed from cold frames to cool airy places where they can be safely protected from damp and frost. It is almost impossible to keep them from damping if they remain in cold frames after this date. These plants will do remarkably well on shelves in vineries and Peach houses where they can have a light and airy position. If they are strong a good number of them will be pushing up their flower stems, and may be allowed to come forward into bloom if they are required. The late plants intended for spring flowering and now established in 3-inch pots may, as they are housed, be transferred into pots 2 inches larger. These plants should be potted moderately deep, so that they will not shake about at the collar, for Primulas in the latter condition are more liable to damp-off than those

that are held firm by the soil. A number of the plants now in 3-inch pots may be allowed to remain in them where small plants in small pots are serviceable for decoration. It is surprising what an enormous amount of bloom the plants will produce in small pots provided they are liberally fed.

**Double Varieties.**—These should be accorded the best position that can be found for them, for they are worthy of it where flowers are required successionally over a long period of time for small vases and other purposes. They are more suitable for supplying flowers in a cut state than for the embellishment of the conservatory, for they are much more liable to suffer from damp than the single forms. The plants will do well and yield flowers during the whole winter and spring if kept close to the glass in a night temperature of 50°, when the atmosphere can be kept somewhat dry, and a moderate circulation of air given daily when the weather is favourable.

## THE BEE-KEEPER.

### SPURIOUS HONEY.

THE axiom that competition encourages trade seems to be true this year in the case of honey, for notwithstanding the abundant harvest, I never experienced a greater demand for good quality, while fair and good prices are maintained, fine supers of Heather honey being retailed at 2s. 6d. per lb., ordinary and sections from 1s. 6d., while dript honey is according to quality, good realising easily from 1s. to 1s. 3d. per lb., wholesale. There is plenty in the market, however, that is much cheaper, but which I would neither offer for sale nor take at any price. Whether it is actually the abundant harvest or the high prices that have induced the "Yankce" fraud in the shape of glucose highly flavoured and coloured (the former very volatile) to appear in such quantities in our towns I need not trouble about; but it is sufficient to mention the fact and put the public on their guard against the poisonous compound. Sold in tins as "Orange Blossom Honey," there need be no difficulty in distinguishing between it and the genuine. There is the greater necessity for this caution, as I find the greater demand for honey arises from the fact that doctors in many instances are advising its use both for medicinal and dietetic purposes.

### SIMPLE METHODS OF BEE KEEPING.

I have read "Senex's" article, page 317, and while I agree with him in some points I differ from him in others. For example, he says that "bar-frame and other hives which are so strongly recommended by their advocates in the present day are only useful to those who can afford to make bee-keeping a study and devote to it much time and attention." If bee-keeping is to be made a success it must be studied, and a particular part is to study how bees can be managed without devoting much time and attention to them. Now, while I do not agree with "Senex's" remarks, neither do I agree with those who attribute success wholly to keeping bees in frame hives: both are errors. But to say that frame, and other hives recommended by modern bee-keepers are a failure, and that success is only to be found in the puny straw hive, is simply absurd. So it is, on the other hand, where frame hives are said to be the acme of perfection. I have in previous articles shown what constitutes a proper hive both in size, shape, and material, as well as many of the causes that incurs time and trouble in their management. I think few people will attempt keeping bees without endeavouring to make the most of them by collecting the greatest quantity of honey.

If I infer rightly from "Senex's" remarks, he is in a good locality for keeping bees, but is unaware what constitutes either a good swarm or a large yield of honey. The former cannot be had from such a hive as he uses, nor can the latter be gathered by such a swarm in ordinary seasons—even in such a fine year as the present has been. "Senex" gives as something extraordinary that 30 lbs. were collected from the first week of June till the end of July—rather less than the weight one hive of mine made this year at the Heather in four days. I think "Senex" will agree with me that it is a mistake to condemn or treat lightly modern improvements in apiculture. Viewing the matter in an uninterested way from both sides, let us rather try to teach the young bee-keeper to make the most of the hives he is in possession of, without running him into needless expense for others that will not make him richer. Above all, bear in mind that it is more in the construction than in the material which constitutes a good hive. So far as time is required for the management of bees, I have a good many pupils who are clerks in town. The only time they have to spare is either before 7 A.M. or after 6 P.M. with Saturday afternoons and two or three weeks' holiday, which



they divide, so as to enable them to attend on the more important occasions, such as taking the bees to and from the Heather. Yet these bee-keepers find time enough to make their own modern hives, &c., and in most instances realise as much as clear country house rent and taxes, as well as extra travelling expenses to and from their seat of work. One important thing in hives is that they should be of sufficient internal capacity for the profitable management, with as great lightness and small compass as possible to enable bee-keepers to handle easily when in transit from one locality to another, which is coming more into practice every year. On another occasion I will describe what I have found to be a proper and cheap bee house.—A LANARKSHIRE BEE-KEEPER.

#### HONEY PRESSER AND DRAINER.

WOULD "A Lanarkshire Bee-Keeper" inform me, through your valuable Journal, the cost of honey presser and drainer, and where they are to be had; also give instructions for use? I have a lot of Heather honey in dark combs mixed with bee bread, which I cannot get out, and am obliged to feed my bees on it when they require it.—EDWARD APPELBY, *Gardener*.

[The above can no doubt be had through Messrs. G. Neighbour and Sons, 149, Regent Street, London. I do not think they have them in stock, but would get them for purchasers. The price, exclusive of carriage, is about 30s. for the presser and about £1 for the drainer. The latter can be made cheaper if sieves are simply supported on a skeleton frame made by the purchaser. Both are efficient articles. The presser extracts about 5 lbs. of honey from 6 lbs. of old combs, and with less refuse when the combs are new; and what adds more to their value is the cleanly manner the honey is made fit for use. The extra quantity of honey got by the use of presser soon pays for its expense. Should Messrs. Neighbour not be able to supply these I could get them if a guarantee is given that they will be taken when ready. Heather honey is fast becoming thick, but if the combs are stowed away in a warm place will be quite easily managed though the pressing is delayed.—A LANARKSHIRE BEE-KEEPER.]

#### BERKSHIRE BEE-KEEPERS' ASSOCIATION.

WHAT may be considered the most noteworthy and effective display of bee-products, and the various articles in which honey can be applied, took place at the Old Town Hall, Reading, on the 1st and 2nd inst. The Rev. V. H. Moyle, Hon. Secretary of the Berkshire Bee-keepers' Association, is to be congratulated upon the success which he has achieved in Berkshire (1) in the increase of the production of honey in the county, and (2) in the disposal of honey for use in several articles of food, medicine, &c.

In addition to the usual prizes offered for bees, hives, honey, &c., several silver and bronze medals were offered for—

1, "For the best collection of honey and wax in various applied forms." In this class were shown preserved fruit, honey, vinegar, mead, wax plates for etching purposes, sheets of wax for making wax flowers, &c. Mr. Thomas Stothard and the Rev. V. H. Moyle were awarded equal first prizes in this class.

2, "For the best collection of honey as beverages." In this class Mr. F. Blatch of Theale was justly awarded the first prize for an excellent exhibit of honey lemonade, honey nectar, and honey noyeau. A guarantee is given that pure British honey only is used in the manufacture of these articles. Mead and honey wine was also shown in this class.

Honey as medicine was represented by exhibits in various forms shown by Messrs. Cross, Cardwell, and Noad. The largest and most interesting class was that in which honey as applied in the manufacture of confectionery was shown. In this class six entries were made, each of which contained some special feature. The first prize was very justly awarded to Mr. J. D. George, of 24, King Street, Reading, for an excellent display of honey gateaux, honey gingerbread, honey dominoes, honey plums, honey cakes, honey queens, honey roll, honey surprise, honey sandwich, honey fingers, honey ginger nuts, &c., &c. The meeting was made a very instructive one, lectures being delivered by Frank R. Cheshire, Esq., and Otto Hehner, Esq.

Rev. F. S. Sclater was deputed by the British Bee-keepers' Association to act as Judge, and he was very ably assisted by the Rev. W. E. Burkett and Mr. Otto Hehner.

#### THE ORIGIN OF HONEYDEW.

It is curious to notice the theories and speculations concerning the origin of what is called honey-dew. This sweet substance is certainly elaborated in the bodies of insects, and all that is required to demonstrate the fact is a little close observation, aided, it may be, by a hand-magnifier. To one accustomed to careful looking, honey-dew is as much a sign of the presence of aphides or their allies, as certain tracks in the cornfield indicate to the farmer the existence of depredating cattle, or as peculiar imprints in fresh snow reveal to the hunter the near occurrence of the sought-for game. That some insects do exude such sweet fluid from peculiar organs is as certain as that bees gather nectar or pollen from flowers, and the certainty comes from the same source—to wit, actual observation.

It may be stated with equal positiveness, though the information is less directly based upon simple eyesight, that the sweet substance called honey-dew is never exuded from the glossy surfaces of leaves on which it is so commonly seen. Nectar is produced by many plants, not only in the flowers, but from other parts of the growing or living substance, but it is always, except, perhaps, from wounds, elaborated by special glands

from which it is thence poured out. These glands are never found opening through the glossy coating of the leaves. Our native plants never become gorged with fluid in summer time so as to cause pressure from within, to force out the juices, as has been so often theoretically assumed. Even if this were true, we should look for the exudation from the pores of the under side of the leaf rather than the upper, because there is much less to prevent such escape through the thinner epidermis, or the far more numerous openings of the under surface.

It is also curious that so many conclude that the deposition of honey-dew only takes place at night, a statement as much at variance with truth as the opinion that stars exist in the heavens only after the sun goes down, and much easier proved to be false. The fact is, in most cases the exudation is commonly greatest in daytime, but more rapidly dries. The only reason in the world that the substance is seen on the upper sides of leaves rather than the lower, is that it falls from above. A piece of glass or a painted board put in the situation of the smeared leaves will soon be found similarly spotted with the adhesive colourless material. With us just now there is upon the leaves of our soft Maple trees multitudes of a peculiar insect, and from the latter there is enough sweetish fluid exuded to conspicuously wet the side walks under the trees.

If we inquire why the little insects produce the sweet substance, an interesting study is opened. It must be understood that the material is not excrement. The elaboration is the work of two special glands which open through variously shaped external appendages, usually directed backward, and situated one on each side, near the hinder extremity of the abdomen. The insects are provided with sharply pointed sucking organs projecting from the mouth, by the aid of which they all live upon the juices of plants. A portion of this plant sap is, after absorption from the alimentary canal, converted into honey-dew and deposited at the will of the insect, often collecting at the extremity of the opening in little spherical drops which fall one after another as it slowly issues. One would at first say that it must thus be an expense to the internal economy of the little creatures without compensating benefit. It is simply elaborated and poured out. After more careful study, however, it will be ascertained that there is at least one useful purpose subserved. It secures the good will and attention of friends who act as guards against enemies.

It is well known that ants are extremely fond of sweet substances and honey-dew forms no exception in their bill of fare. For it they ascend trees in great numbers, and caress in a most remarkable manner the honey-dew producers. In response to their petting, it is easy to observe the droplets exude which the ants sip with apparently great satisfaction.

Aphides have many insect enemies, but so long as the ants are in attendance they are safe. The active, well-mailed, sharp-jawed creatures make excellent police. They are ever alert. They never accept a fee from the enemy; they never bargain for a share in the plunder. Honey-dew seems specially provided for ants.

Now, as to the question of quality as honey when collected by bees, there may still be differences of opinion among men, even after the source and method of production is understood. No doubt, however, most people will prefer to have that gathered from flowers without admixture with the aphid product. It may be, to be sure, that different insects elaborate different grades of honey-dew, but the best may not be considered good enough for home use, whatever the conscience dictates in regard to the market.—T. J. BURRILL, *Illinois Industrial University*.—(*The American Bee Journal*.)



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Books** (W. L., Bolton).—Rivers' "Orchard House," published by Longmans, will suit you. The price is, we think, 8s., and the work can be had through a bookseller in Bolton.

**Single Dahlias** (W. R. Vickers).—The flowers arrived much shrivelled one of them being so dried that we could scarcely form an opinion on its merits. The yellow flower, which is not single, is distinct, and if its



character can be fixed the variety will be useful for decorative purposes. Preserve the roots and grow the varieties another year. You will then ascertain whether they produce similar flowers, these plants being very sportive.

**Sowing Orchid Seed (G. H.).**—Experience has shown that there is no method equal to scattering the seed on the sphagnum in which a plant is growing freely and receives proper attention in watering, so that the sphagnum is kept fresh. No attempt must be made to cover the seed, and it must not be displaced by watering. The seed may be sown as soon as ripe, or in early spring. It is delicate work raising Orchids from seed, then establishing the plants, and only experts or very careful cultivators can hope to succeed. If you succeed in raising plants you must be prepared to give them the best attention for about ten years before they will flower. Some seedlings are fifteen years before flowers are produced, and then the varieties may not be superior, but, on the other hand, some may prove of value.

**Orchids (W. S.).**—The Cypripediums and Cattleyas can be well grown and flowered in the temperature you name, as also may the Vandas, if care be exercised in assigning them the best position in the house. Dr. Paterson of Bridge of Allan grows flowers, all the Orchids you name, and many more, in a lower minimum temperature than 60°, and as you reside in Scotland you might probably derive instruction from a visit to the Bridge of Allan. If that is convenient to you we feel sure Dr. Paterson would readily allow you to inspect his plants.

**Box Edging (Litho).**—That known as the Dwarf Dutch Box is the kind to order. It is kept in stock by many nurserymen, and may be planted at once, or any time when the weather and soil are favourable throughout the winter. The ground should be made firm and level, and a trench taken out, one side of which is quite upright like a wall. Along this the plants are arranged, with their tops quite level an inch or two above the soil, being held in position by one hand, while earth is drawn to the roots and beaten down with the other. The soil is then levelled in with a spade and trodden firmly, taking care that the plants are quite straight and level in the row. Slips of Box 3 or 4 inches long packed firmly in trenches now to within an inch of the tips of the shoots will emit roots, and the plants will be ready for planting next autumn. Your plants of Golden Feather may live through the winter, but will flower early next year, and be of dwarf yellow lines or edgings. For this purpose seedlings are best, and are readily raised in the spring.

**Pears for September (L. I. K.).**—Williams' Bon Chrétien, Beurré Superfin, and Comte de Lamy are three excellent varieties. Pitmaston Duchesse would succeed well in the open, but Josephine de Malines, we fear, would not do so, but it is a delicious Pear, and we should try one tree. After the trees are planted, mulch well—that is, cover the ground over the roots with short manure to encourage them to the surface, and at the end of the second season after planting replant the trees, using some of your best yellow loam about the roots. This, with annual rich surface dressings, should keep them to the surface and prevent them penetrating into the subsoil. We have replanted young fruit trees three times with very beneficial results. With moist and fertile surface soil the roots seldom penetrate the subsoil to any great extent, they only do so in search of moisture in the summer, hence the importance of manurial mulchings.

**Mushroom Bed not Heating (H. H., Manchester).**—The bulk of manure is altogether insufficient to enable you to maintain the requisite heat in cold weather in the open air. As is stated on page 18 of the work to which you refer, a length of 5 yards of bed is suggested as the minimum. All you can do is to cover your small heap very thickly with long stable manure or straw, and if by this means you cannot raise the temperature to 75° you had better not waste spawn by inserting it. A thickness of 2 feet of covering we imagine would be needed to keep the heat in such a small heap, and even that might fail to do so.

**Marechal Niel Rose (J. Palk).**—You must keep the house in which your Marechal Niel Rose is growing as cool as possible until the end of December, so as to ripen the wood and bring the growth to a complete standstill. Early in January keep the house closer, say 45° to 50° at night, with a rise of 5° or 10° by day by closing early in the day while the sun is upon it, and on fine days syringe the plant gently until it shows signs of bursting into growth. As soon as this stage is reached the temperature may be raised gradually 5° or 10° by night, as the young shoots that will bear the flowers lengthen out. Never should a higher temperature than 60° be maintained at night, and this only when very mild externally. Nothing is gained by a high temperature in forcing Roses into bloom, and it is much better to allow the temperature to fall to 50° by morning than keep it at the highest point given when the weather is very cold and frosty. Take every advantage of the sun to close the house early in the afternoon, for no harm will be done if the temperature increases, say to 80° or 85° for a few hours by sun heat alone. Be careful to avoid cold draughts striking directly upon the young tender foliage, for nothing will cause an attack of mildew sooner. You had better allow the temperature of the house to run up considerably than admit cold currents of air to the tender growths of your Rose tree. If you follow the directions given we do not think you will fail to have Rose blooms early in March.

**Lawn Mossy (E. Middleton).**—From February to the end of March, in mild weather, have the lawn well scratched with a new iron rake so as to bring up and remove the moss. The more you remove the better; clear it off. In March give a good dressing of decayed manure or rich compost, spreading it evenly, and not more than half an inch thick. In April rake again well with the iron rake, removing any rough and unsightly portions of the manure and any stones, and with an early prospect of rain sow over it evenly 8 lbs. Festuca durinacula, 12 lbs. Cynosurus cristatus, 8 lbs. Festuca tenuifolia, 8 lbs. Poa nemoralis sempervirens, 8 lbs. Trifolium repens, and 4 lbs. Trifolium minus, in mixture for 1 acre. If you are troubled with birds rake lightly with a wooden rake after sowing; if not, simply roll well; rolling should also follow the raking. Let the grass grow until the middle or end of May, then mow with a scythe, and afterwards keep under with the mowing machine. If the lawn is wet the moss would be subdued by draining. A correspondent who has had lawns almost completely taken possession of by a thick carpet of moss, which has well nigh obliterated every trace of the grassy turf, after

experimenting with every imaginable remedy, he found nothing so certain as a good dressing of wood ashes. The effect is not immediate, but during the following summer the moss disappears, and a thick turf of fine grass with a profusion of White Dutch Clover succeeds. In some parts of the country, where wood is not used as fuel, it is sometimes difficult to obtain wood ashes. In this case the simplest way of procuring them is to collect all the prunings of hedges, shrubs, rough bushes, and other waste materials of a similar character that are to be found about most places, and burn them in a heap. Enough ashes will generally be got to supply the needs of the place.

**Corrosive Sublimate and Slugs (T. W. G.).**—No doubt the solution to which you refer will destroy slugs; but as we have not tried it of the strength named in the "recipe" you send from an Australian paper we are not prepared to state that the solution may be safely given to plants. Why not try a few experiments on plants you can afford to destroy and favour us with the results? Other persons of an "experimental turn of mind" might try it also. Hence we publish the citation:—"Take 1 oz. corrosive sublimate and dissolve it in a close vessel, in a quart of boiling water. When thoroughly dissolved add to it six gallons of cold water, and with a rose watering-pot apply it to the places infested. It will have still more effect if every ounce of sublimate is made into only four gallons of mixture and the ground gone over the day after with a second watering of pure water, which will carry the destructive power deeper into the ground. This plan not only destroys the perfect slug, but the eggs, larvæ, and pupa of everything which it reaches." We advise the cautious use of this powerful slug-destroyer. We know that 1 oz. of the corrosive sublimate (bichloride of mercury) dissolved in fifteen gallons of water and poured into the soil will cause worms to come to the surface, but care must be taken that fowls do not eat them, otherwise they may be poisoned.

**Old English Codlin Apple (Lieut.-Col. Walker).**—The Apple of which you send section is no doubt the variety named, and which is described and referred to as follows in the new edition of Dr. Hogg's "Fruit Manual," this being one of many additions to the work:—"Fruit large, 3½ inches wide, and 3 inches high; ovate or short conical, wide at the base, generally taller on one side of the eye than the other, and frequently with a snouted apex terminated in ridges round the eye. Skin lemon yellow, marked with patches and broad veins of russet, especially about the apex and in the cavity of the stalk; sometimes it has a thin red cheek on the side next the sun. Eye closed, with long pointed segments, set on one side of the axis in a deep, angular, and furrowed basin. Stamens basal; tube conical. Stalk short, quite within the deep uneven cavity. Flesh firm, brisk, and with a pleasant perfume. Cells obovate, abaxile. A fine old English cooking Apple; in use from August to October. The trees are excellent bearers, but in most orchards they are generally found unhealthy, being cankered and full of woolly aphids, which Mr. Lindley attributes to their being grown from suckers and truncheons stuck into the ground. He says—'Healthy, robust, and substantial trees are only to be obtained by grafting on stocks of the real Sour Hedge Crab; they then grow freely, erect, and form very handsome heads, yielding fruit as superior to those of our old orchards as the old and at present deteriorated Codlin is to the Crab itself.' This circumstance was noticed by Worlidge 200 years ago—'You may graft them on stocks as you do other fruit, which will accelerate and augment their bearing; but you may save that labour and trouble if you plant the cions, slips, or cuttings of them in the spring time, a little before their budding; by which means they will prosper very well, and soon become trees; but these are more subject to the canker than those that are grafted.' This is one of our oldest English Apples, and still deserving of wider cultivation than it at present has. Formerly it was an ingredient in one of the national dishes of English cookery in the form of 'Coddins and cream.' Ray says, 'Crudum vix editur ob duritiem et aciditatem, sed coctum vel cum cremore lactis, vel cum aqua rosacea et saccharo comestum inter laudatissima fercula habetur.' The name is derived from coddle, to parboil."

**Dividing Vallotas (W. W. T.).**—If you wish to increase the number of your plants the small bulbs may be separated from the others and potted just when the plants commence growing in the spring. For producing large brilliant masses of this fine autumn plant dividing is not necessary, but larger pots or rich top-dressings may be given as required to insure strong healthy growth. Potfuls of bulbs producing from fifty to 100 trusses are highly effective. Two rows of Roses will be ample for your bed, planting 2 feet apart in the rows, the plants in each row not opposite each other.

**Shrubs for Shaded Border (R. S.).**—Common Laurels will no doubt succeed the best in such a position as that you describe, and the greatest portion of the border should be planted with them. In addition, to diversify the appearance, a few plants of the following might be employed:—Euonymus europæus, Leycesteria formosa, Mahonia aquifolia, Berberis Darwinii, Ruscus aculeatus, Symphoricarpos racemosus, and for the fore part of the border Hypericum calycinum will succeed well.

**Names of Plants (M. P.).**—As we have many times stated we do not name varieties of florists' flowers; there are far too many so closely resembling each other for anyone to do so without actual comparison with others in a large collection. The florist who supplied the plant might possibly be able to give its name if a specimen were sent to him. It is very bright and good.

#### COVENT GARDEN MARKET.—OCTOBER 15TH.

We have no alterations to make from last week.

##### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. .. .	½ sieve	2 6 to 3 6	Oranges .. .. .	100	8 0 to 12 0
Chestnuts .. .. .	bushel	0 0 0 0	Peaches .. .. .	per doz.	3 0 8 0
Cobs, Kent .. ..	per 100 lbs.	50 0 55 0	Pears, kitchen ..	dozen	0 0 0 0
Currants, Red ..	½ sieve	0 0 0 0	" dessert .. ..	dozen	1 0 3 0
" Black .. .. .	½ sieve	0 0 0 0	Pine Apples English ..	lb.	4 0 6 0
Figs .. .. .	dozen	0 6 1 0	Plums .. .. .	½ sieve	0 0 0 0
Grapes .. .. .	lb.	0 6 4 0	Strawberries .. ..	lb.	0 0 0 0
Lemons .. .. .	case	15 0 21 0	St. Michael Pines ..	each	4 0 7 0



## VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes .. .. dozen	2 0	to 4 0	Lettuce .. .. dozen	1 0	to 1 6
Beans, Kidney .. .. lb.	0 3	0 0	Mushrooms .. .. punnet	0 0	1 6
Beet, Red .. .. dozen	1 0	2 0	Mustard and Cress punnet	0 2	0 0
Broccoli .. .. bundle	0 9	1 0	Onions .. .. bunch	0 3	0 4
Brussels Sprouts .. ½ sieve	0 0	0 0	Parsley .. .. dozen bunches	2 0	3 0
Cabbage .. .. dozen	0 0	1 0	Parsnips .. .. dozen	1 0	2 0
Capsicums .. .. 100	1 6	2 0	Potatoes .. .. cwt.	4 0	5 0
Carrots .. .. bunch	0 3	0 4	"    Kidney .. .. cwt.	4 0	5 0
Cauliflowers .. .. dozen	2 0	3 0	Rhubarb .. .. bundle	0 4	0 0
Celery .. .. bundle	1 6	2 0	Salsafy .. .. bundle	1 0	0 6
Coleworts .. .. bunches	2 0	4 0	Scorzonera .. .. bundle	1 6	0 0
Cucumbers .. .. each	0 2	0 4	Shallots .. .. lb.	0 3	0 0
Endive .. .. dozen	1 0	2 0	Spinach .. .. bushel	2 0	4 0
Herbs .. .. bunch	0 2	0 0	Tomatoes .. .. lb.	0 6	0 0
Leeks .. .. bunch	0 3	0 4	Turnips .. .. bunch	0 4	0 6



## SEED CORN.

LAST week particular attention was called to the importance of high farming. It might justly have been termed common-sense high farming, for it brought into combination strict economy and judicious outlay, and the matter is so important that we return to it. Let us say at the outset now, that the term "economy," if used as it is here, in the sense of an avoidance of waste, is far more comprehensive and pregnant with meaning than if regarded in the ordinary manner of saving when and how one can. It is not economy to purchase or sow inferior seed corn. It is not economy to sow upon a foul seed bed, or upon undrained or poor land. Smaller farms, higher cultivation, and better seed is what is wanted. Capital must not be so widespread, but it must be concentrated sufficiently in order that what we do shall be done in the best way. Well and to good purpose are we now told that "unless British farmers are prepared to abandon corn-growing altogether, it follows, almost as a matter of course, that they should apply themselves in every way possible to the economics of culture with the view of heightening production. The truest and best economy is not always that of sparing expense, and certainly is not the case here."

Do farmers generally so regard this most important matter? We fear not. Take the ordinary type of farmer of any locality, and what do we find? He grumbles heartily about hard times, but apparently has no thought of making a special effort to grapple with and overcome his difficulties, nor is he by any means willing to admit the possibility of doing so. Actual demonstration is the best argument with such men. They require something tangible to carry conviction to their sluggish minds, and there are plenty of shrewd clever men able to afford them such proof. It is true enough that it does not pay to grow Wheat at 36s. per quarter, but with this low quotation we usually see considerably higher rates, showing that there is Wheat in the market so superior in quality that buyers willingly give the higher price for it. If the question is asked, How is this superior corn obtained? we may safely answer, By thorough cultivation and the selection of good seed? That greater attention is being given to the value of good seed is undoubtedly true, and though there has been such an outcry about bad seasons and the low price of Wheat, it by no means follows that plenty of Wheat will not be grown next season in this country.

A difference of 8s. per quarter for Barley and 6s. per quarter for Oats between the lowest and highest quotations of last week is an instance of the considerable difference in quality of samples upon the market. Oats are so frequently sown upon poor land that numerous inferior samples are to be seen in every market. Far better would it be to plough-in such poverty-stricken crops, or to cut them green for the silo, or to feed them off upon the land. We have an especial liking for winter Oats for either purpose, but value them still more highly as a safe corn crop, and take especial pains to procure our seed from the best source. Sown now upon such an excellent seed bed as the fine autumn has enabled us to prepare for it, this crop may not only be considered a safe and valuable one for the abundant yield of heavy corn which it usually affords, but we have always the option of turning it to account early in spring either for grazing or a supply of sound green fodder for the yards.

Let us then qualify the popular cry of More green crops and less corn, and say Better corn, and strive to act upon it to the utmost of our powers. By all means let us have green crops in plenty, especially now, for in order to sow them we must stir and clean the land, which is no mean advantage in autumn. In winter the living roots prevent loss of nutriment in the soil, and in spring it is optional to graze,

to plough-in as manure, or to obtain a crop of early corn that pays, and then we may get more grazing or follow with a root crop.

## WORK ON THE HOME FARM.

*Horse and Hand Labour.*—Favourable weather has enabled us to make considerable progress with the ploughing and sowing of winter corn. The plough turns up the land in excellent condition for the seed, which is a natural and satisfactory result of the free use of the broad-share, cultivator, horse-hoe, and harrows since harvest. The paring and burning which has been done to an unusual extent will also tend to keep down wireworm, often so destructive to winter corn, the baneful effects of the ravages of this troublesome pest being visible in brown patches of dead plants, which spread sometimes in badly infested land to a considerable size. The mild weather is so favourable to the growth of root crops that with the exception of Potatoes there will be no clearance of roots from the land for another week or two, the late growth tending materially to add to the bulk of crops which invariably suffer in a drought. Mangolds especially are fast swelling to a size little short of a fair average, and we now feel certain of an ample supply of this valuable crop. Land required for new Hop gardens should now be got ready for the planting. If it has a green crop upon it let this be at once ploughed in so that the land may be planted with the Hops as early as possible in November. Offers of plants termed "bedded sets" are already in the markets, and such plants are the best. By planting in November we may with a favourable season obtain a crop of several hundredweight of Hops per acre next year; but if the planting is not done till the new year, few, if any, Hops will be had. Our only resource when driven by stress of circumstances to plant late being the sowing of some rows of Swedes or Mangolds between the Hop rows, so as to get something out of the land. We shall explain the process of planting at the proper time.

*Live Stock.*—So abundant is the late growth of grass that both sheep and cattle are doing splendidly, and the cattle will go into the yards in better condition than usual. Dairy cows, too, have a well-sustained flow of milk, and the butter is of the best quality, the sweet nutty flavour being especially good. Acorns are remarkably abundant, and they will be collected at 1s. per bushel by women and children. Sheep thrive well upon acorns and grass, laying on fat very fast, and we shall keep a supply in store for winter feeding. Apples should now be gathered and cider made at once. We find old sherry butts answer best for this purpose; they contain about 100 gallons, and the cider becomes very strong if kept for a year or two. If left too long upon the trees much of the fruit falls and is eaten by the cattle. Turkey poults are now good, and we are killing birds weighing 8 lbs. to 9 lbs.

## OUR LETTER BOX.

*Maize for Green Crop (G. J. S.).*—The advice given you to sow Maize with Clover in spring was both vague and misleading. Maize when just out of the ground is so sensitive to frost that the plants are sometimes killed by it. It is owing to this fact that the sowing is not done till the third week in May; then, with a favourable summer, it is a profitable green crop, admirably adapted for ensilage, especially if it can be chaffed before being put into the silo. Maize will germinate and grow in most kinds of soil, but to grow well it requires deep rich soil in thorough cultivation. Horse-tooth Maize is the best sort for a green crop, and it should be sown in drills 18 inches apart at the rate of about two bushels of seed per acre. The late hot summer was especially favourable to the growth of Maize in this country, and numerous reports have been published of satisfactory cultural results. Mr. F. Marshall, Eversley, Winchfield, Hants, states that in July under the influence of rain and sunshine his Maize grew at the rate of 18 inches per week, eventually attaining a height of 10 to 12 feet, and a weight of nearly 80 tons per acre, each plant averaging 4 lbs. in weight. This crop was cut and put full length into the silo on September 3rd, alternating with layers of second-cut meadow grass, a pressure of 400 lbs. to the square foot being applied subsequently by means of powerful screw presses.

## METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1884. October.		Barome- ter at 32s and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.	On grass.	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday .....	5	30.680	48.7	41.4	N.	52.9	58.7	38.1	81.6	33.6	—
Monday .....	6	30.501	53.8	51.4	N.	53.6	61.8	43.6	90.7	42.1	0.014
Tuesday .....	7	30.196	56.2	53.0	N.E.	53.8	63.8	49.4	102.6	44.6	—
Wednesday ..	8	29.847	50.1	49.1	E.	54.2	59.4	48.0	79.9	45.6	0.087
Thursday ....	9	29.522	48.5	45.8	N.E.	53.2	55.1	33.1	81.2	31.3	0.432
Friday .....	10	29.436	43.7	43.1	N.W.	51.9	48.8	39.6	48.8	32.9	0.075
Saturday ....	11	29.668	39.8	34.7	N.W.	49.8	48.5	38.5	82.5	34.7	—
		29.979	48.7	46.2		52.8	56.6	42.2	81.0	37.8	0.608

## REMARKS.

5th.—Cloudy all day.

6th.—Unsettled; bright sun and showers alternately.

7th.—Fair, with some sun; occasional drizzle in evening.

8th.—Fair morn; rain in afternoon; bright night.

9th.—Bright early, but wet from 10 A.M.

10th.—Wet day.

11th.—Fine, but colder.

A variable week with great range of barometer, cooler, and the temperature now below the average for the period of the year.—G. J. SYMONS.





23	TH	
24	F	
25	S	
26	SUN	20TH SUNDAY AFTER TRINITY.
27	M	Sale of Nursery Stock at Brox, Chertsey.
28	TU	Royal Horticultural Society's Fruit Show (three days).
29	W	Sale of Bulbs by Mr. Stevens, Covent Garden.

## THE ROSES MOST FREQUENTLY EXHIBITED IN RECENT YEARS.

[THE following important contribution to Rose literature has been prepared by Mr. Edward Mawley, one of the Honorary Secretaries of the National Rose Society, and we are quite sure that all who are interested in the subject will join us in tendering a hearty and unanimous vote of thanks to the author for his excellent work.]

**B**EFORE coming to a more detailed consideration of the tables given on the next page it may be desirable to say a few words in explanation of the way in which the following analysis has been carried out. In the first place all the leading gardening papers of the past eight years—that is to say, ever since the first Exhibition of the National Rose Society was held at St. James's Hall in 1877, have been carefully searched for reports of Rose shows and other horticultural exhibitions in which Roses formed a prominent feature. And whenever there was found in these accounts a complete list of the varieties shown in any first or second-prize stand a stroke was made in a nurseryman's catalogue against the name of every Rose in that stand—a fresh catalogue being used for each one of the eight years. It should be clearly understood that no notice whatever has been taken of any box of Roses where the names of all the Roses in that box do not appear in a report of the exhibition at which it was shown. A table was then prepared in which to enter the names of the different varieties, the number of times they had been mentioned in each of these eight years, and also their totals for the whole period. In point of fact there were two separate sets of these tables, one for the Hybrid Perpetuals and another for the Teas and Noisettes; for, owing to the number of boxes noticed in the journals which contained Tea Roses alone, it was found necessary to keep these two classes entirely distinct.

So far all was simple and straightforward enough. But here the question arose, How best to treat the newer Roses, so as to place them as far as possible on a similar footing with the more established varieties. The actual figures in the tables just described could not be used as they stood, since the former, unlike the latter, had not been exhibited throughout the whole of the eight years, and therefore would necessarily be placed at a great disadvantage. I at length decided to adopt a system of per-centages for all the varieties. The manner of calculating these per-centages will perhaps be best made plain by giving an example of the way in which this has been carried out in the case of an old and also in that of a comparatively new Rose. For instance, the position of Alfred Colomb was ascertained by taking the number of times (125) that this variety had been mentioned during the whole eight years, and finding what per-centage this number was of the grand total (6490) of all the H.P.'s tabulated for the same period—viz., 1.93. Then, if we take A. K. Williams and treat it in a similar manner, but this time confining our calculations (for reasons which will presently be explained) to the last three years only, we obtain 114 as the number of times this Rose was noted down during this period, and 2.53

as the per-centage this number was found to be of all the H.P.'s entered for the same three years.

Had the best of the newer Roses (and it is mostly only these that have found their way into the following tables), been treated precisely in the same way as the veteran sorts, the former, notwithstanding the adoption of this system of per-centages, would have still remained at a considerable disadvantage, from the fact that for the first few years after new varieties come out they are not nearly so largely grown as the older kinds. How to get over this difficulty seemed at first rather puzzling, but on looking more closely into my tables it was soon apparent that the fifth year of its existence was the critical year with nearly every one of the new Roses. As a rule the per-centages were found to rise by quick steps until this year had been reached, after which they either steadily maintained the positions they held or else declined to a lower level and remained afterwards at about that level. This exhibition test is very interesting as showing what I had often suspected to be the case, that nothing entirely satisfactory or decisive is ever known about any new Rose until it has been generally grown for at least three or four years. Except, therefore, in the case of the newest Roses of all, whose positions depend solely upon their exhibition form in 1884, no notice has been taken in this analysis of the per-centage of any new Rose until five years after its introduction. Even after all these adjustments have been made there still remains a residuum of doubt as to the precise position these newer Roses should occupy; and this is due to the varying influence of the seasons—that is to say, a Rose which has been generally grown throughout the whole of the eight years is more likely to fall into its true place than one which has only come into general cultivation within the last two or three years. Fortunately this disturbing influence has in no way seriously affected the results. This is proved by confining the analysis in the case of the first twenty-four H.P.'s to the last three years only, when it was found that although certainly E. Y. Teas had fallen three steps (from No. 17 to No. 20), Madame Gabriel Luizet and Duchesse de Vallombrosa had only descended one step each, while A. K. Williams and Marie Verdier both took precisely the same positions as they had done before.

Between eight and nine thousand Rose blooms have, I find, been tabulated in all—viz., 6490 Hybrid Perpetuals and 1905 Teas and Noisettes; the former in as many as 385, and the latter in no less than eighty-six different varieties. Although the amateurs staged about three-fifths of the total number of boxes, the nurserymen, owing to their exhibiting in much larger classes, contributed many more Roses. Very many of these flowers, however, have little or no effect upon the results under consideration, being what may be termed chance blooms—extra fine blooms of varieties of comparatively very little value for exhibition purposes. In fact, taking the Hybrid Perpetuals and Teas together more than one-half of the total number of varieties were found to have been entered in the original tables less than six times in all.

It may now be asked: "Who were the exhibitors of all these beautiful Roses upon which this analysis is based?" In reply I might name nearly every exhibitor of any standing at all in the Rose world. Let a list of those, however, whose Roses have had the greatest influence on the results suffice, bearing in mind that for all practical purposes this influence has been in proportion to the positions occupied by the different exhibitors as prizewinners during the past eight years.

Amongst the long list of amateurs we find such well-known names as J. H. Arkwright, G. Baker, R. N. G. Baker, Captain Christy, C. Davies, Rev. E. L. Fellowes, W. G. Girdlestone, W. J. Grant, T. B. Hall, G. P. Hawtreys, T. B. Haywood, the Rev. Canon Hole, T. Jowitt, Rev. J. H. Pemberton, Rev. Page Roberts, W. G. Sharp, A. Slaughter, A. G. Soames, A. J. Waterlow, and E. R. Whitwell. And



among the leading Rose nurserymen, B. R. Cant of Colchester; Keynes, Williams & Co. of Salisbury; Cranston and Co. of Hereford, Paul & Son of Cheshunt, G. Prince of Oxford, and C. Turner of Slough, &c.

## HYBRID PERPETUALS.

Position in Analysis.	Name of Rose.	Date of Introduction.	Raiser's Name.	Per-centage of Total Number of H.P.s. tabulated.
1	La France .....	1867	J. B. Guillot, fils ...	3.16
2	Marie Baumann .....	1863	Baumann .....	2.94
3	A. K. Williams.....	1877	Schwartz .....	2.53
4	Baroness Rothschild .....	1867	Pernet .....	2.34
5	Marquise de Castellane...	1869	Pernet .....	2.17
6	Madame Gabriel Luizet...	1877	Liabaud .....	2.11
7	Charles Lefebvre.....	1861	Lacharme .....	2.05
8	Captain Christy .....	1873	Lacharme .....	1.97
9	Alfred Colomb .....	1865	Lacharme .....	1.93
10	François Michelon .....	1871	Levet .....	1.80
11	Etienne Levet .....	1871	Levet .....	1.77
12	Duke of Edinburgh.....	1868	Paul & Son.....	1.69
13	Marie Rady .....	1865	Fontaine.....	1.60
14	Louis Van Houtte .....	1869	Lacharme .....	1.45
15	Dr. Andry .....	1864	E. Verdier .....	1.42
16	Marguerite de St. Amand	1864	Sansal .....	1.39
17	E. Y. Teas .....	1874	E. Verdier .....	1.38
18	Comtesse d'Oxford .....	1869	Guillot, père .....	1.33
19	*Merveille de Lyon .....	1882	Pernet .....	1.31
20	Mad. Hippolyte Jamain...	1871	Jamain .....	1.25
21	Duchesse de Vallombrosa	1875	Schwartz .....	1.24
22	Horace Vernet .....	1866	J. B. Guillot, fils ...	1.23
23	Madame Lacharme.....	1872	Lacharme .....	1.22
24	Madame Victor Verdier...	1863	E. Verdier .....	1.22
25	Marie Verdier .....	1877	E. Verdier .....	1.18
26	Fisher Holmes .....	1865	E. Verdier .....	1.11
27	Beauty of Waltham.....	1862	W. Paul & Son .....	1.09
28	Duke of Wellington.....	1864	Granger .....	1.06
29	*Pride of Waltham .....	1881	W. Paul & Son .....	1.04
30	Sénateur Vaisse .....	1859	Guillot, père .....	1.03
31	Camille Bernardin .....	1865	Gautreau.....	1.00
32	Dupuy Jamain .....	1868	Jamain .....	1.00
33	Le Havre .....	1871	Eude .....	0.99
34	Xavier Olibo .....	1864	Lacharme .....	0.96
35	Comtesse de Serenye .....	1874	Lacharme .....	0.94
36	Star of Waltham .....	1875	W. Paul & Son .....	0.94
37	Marie Finger .....	1873	Raimbaud .....	0.93
38	Abel Carrière.....	1875	E. Verdier .....	0.92
39	Eugénie Verdier .....	1869	J. B. Guillot, fils ...	0.91
40	Mrs. Charles Wood .....	1861	E. Verdier .....	0.89
41	Général Jacqueminot .....	1853	Rousselet .....	0.88
42	John Hopper .....	1862	Ward .....	0.86
43	Ferdinand de Lesseps .....	1869	E. Verdier .....	0.83
44	Countess of Rosebery .....	1879	Postans .....	0.82
45	Monsieur Noiman .....	1866	Guillot, père .....	0.82
46	Edouard Morren .....	1868	Granger .....	0.80
47	Prince Arthur .....	1875	Cant .....	0.80
48	Duke of Teck .....	1880	Paul & Son.....	0.77
49	*Ulrich Brunner .....	1881	Levet .....	0.76
50	Duchesse de Morny .....	1863	E. Verdier .....	0.74
51	Marie Cointet .....	1872	J. B. Guillot, fils ...	0.74
52	Exposition de Brie .....	1865	Granger .....	0.72
53	Madame Eugène Verdier	1878	E. Verdier .....	0.72
54	Prince Camille de Rohan	1861	E. Verdier .....	0.71
55	Duchess of Bedford.....	1879	Postans .....	0.66
56	Elie Morel .....	1867	Liabaud .....	0.65
57	Maurice Bernardin .....	1861	Granger .....	0.65
58	Annie Laxton .....	1872	Laxton .....	0.63
59	Victor Verdier .....	1859	Lacharme .....	0.63
60	Reynolds Hole .....	1873	Paul & Son.....	0.62
61	Mrs. Baker .....	1876	Turner .....	0.60
62	Abel Grand .....	1865	Damaizin.....	0.59
63	Auguste Rigotard.....	1871	Schwartz .....	0.59
64	Charles Darwin .....	1879	Laxton .....	0.55
65	Alfred Dumesnil .....	—	Margottin fils .....	0.54
66	Hippolyte Jamain .....	1874	Lacharme .....	0.54
67	Lord Macaulay .....	1863	W. Paul & Son .....	0.54
68	John Stuart Mill .....	1875	Turner .....	0.52
69	Pierre Notting .....	1863	Portemer .....	0.52
70	Sir Garnet Wolseley .....	1875	Cranston.....	0.50
71	Magna Charta .....	1876	W. Paul & Son .....	0.48
72	Sultan of Zanzibar .....	1876	Paul & Son.....	0.46
73	Antoine Ducher .....	1866	Ducher .....	0.45
74	†Souvenir de la Malmaison	1843	Béluzé .....	0.45
75	Cheshunt Hybrid .....	1873	Paul & Son.....	0.44
76	Duke of Connaught.....	1876	Paul & Son.....	0.44
77	Thomas Mills.....	1873	E. Verdier .....	0.44
78	Princess Beatrice .....	1872	W. Paul & Son .....	0.43
79	Annie Wood .....	1866	E. Verdier .....	0.40
80	Madame Sophie Fropot ...	1876	Levet .....	0.37
81	Princess M. of Cambridge	1866	Paul & Son.....	0.37

## HYBRID PERPETUALS (Continued).

82	Madame Ducher .....	1879	Levet .....	0.36
83	Marquise de Mortemart ...	1868	Liabaud .....	0.35
84	Duchesse de Caylus .....	1864	C. Verdier .....	0.34
85	Madame Nachury .....	1873	Damaizin .....	0.34
86	*Heinrich Schultheis .....	1882	Bennett .....	0.33
87	Madame Prosper Laugier..	1875	E. Verdier .....	0.33
88	Paul Neyron .....	1869	Levet .....	0.33
89	Devienne Lamy.....	1868	Levêque et fils .....	0.22
90	Henri Ledechaux .....	1868	Ledechaux .....	0.31
91	Madame Clem. Joigneaux	1861	Liabaud .....	0.31
92	Emily Laxton .....	1877	Laxton .....	0.29
93	Jean Liabaud.....	1875	Liabaud .....	0.29
94	Louise Peyronny .....	1851	Lacharme .....	0.29
95	François Levet .....	1880	Levet .....	0.28
96	*Lady Mary Fitzwilliam ...	1882	Bennett .....	0.28
97	Lady Sheffield .....	1881	Postans .....	0.27
98	Duc de Rohan .....	1861	Levêque et fils .....	0.26
99	Madame Charles Crapelet	1859	Fontaine.....	0.26
100	Nardy Frères .....	1868	Ducher .....	0.26

The Hybrid Perpetual which heads this list is undoubtedly well worthy of its position. It is not only one of the most refined and beautiful of all Roses, but, taking the various qualities together which go to make up a perfect Rose, it stands altogether unrivalled. Indeed, there is scarcely a single one of these good qualities in which La France would not score one or more points—whether we consider the form of the flower, the tinting, finish, substance or number of its petals, its habit and vigour of growth, its hardiness, its continuity, freedom and certainty of flowering, or the character, abundance, and gracefulness of its foliage. It is also a capital Rose for ordinary garden decoration, a fine bedding Rose, and good alike both as a dwarf and as a standard.

On glancing through the per-centages for the different years I notice that such old Roses as Général Jacqueminot, now thirty-one years old, and Sénateur Vaisse and Victor Verdier, each twenty-five years of age, still continue to hold the positions they occupied some seven or eight years ago. The new Roses most largely shown during the past summer have been Merveille de Lyon, Pride of Waltham, Ulrich Brunner, Heinrich Schultheis, and Lady Mary Fitzwilliam. The places assigned to these new varieties in the above table must be regarded as very doubtful, being dependent entirely upon the number of times they have been shown in a single exhibition season. As regards the too-much-alike Roses, the positions of Charles Lefebvre and Marie Rady are, I find, in no way seriously affected by any of what may be termed their "Corsican" brethren. Both Marie Finger and Eugénie Verdier should, however, on the other hand, stand much higher than they do. It is interesting to notice how the more hardy Marie Finger has in late years shot ahead of her rival Eugénie Verdier; and then, again, how Pride of Waltham, a new candidate with a similar type of flower, already threatens to pass both of them while they are thus engaged in disputing their very slight differences. The contentions between the members of the Maurice Bernardin group also greatly damage their respective positions. Of the four, Ferdinand de Lesseps appears to be the most general favourite; then comes Exposition de Brie, then Maurice Bernardin, and, lastly, Sir Garnet Wolseley.

## TEAS AND NOISETTES.

Position in Analysis.	Name of Rose.	Date of Introduction.	Raiser's Name.	Per-centage of Total Number of T's and N.'s tabulated.
1	Souvenir d'un Ami .....	1846	Belot-Defougère ...	7.03
2	Maréchal Niel (N.) .....	1864	Pradel.....	6.98
3	Catherine Mermet .....	1869	J. B. Guillot, fils...	6.77
4	Marie Van Houtte .....	1871	Ducher .....	6.30
5	Niphetos .....	1844	Bougère .....	5.72
6	Souvenir d'Elise Vardon	1854	Marest.....	5.09
7	Jean Ducher .....	1874	Madame Ducher ...	4.85
8	Innocente Pirola .....	1878	Madame Ducher ...	4.26
9	Devonensis .....	1838	Foster .....	3.94

\* Its per-centage for 1884 alone regulates the position of this new Rose.

† Bourbon.



## TEAS AND NOISETTES (Continued).

Position in Analysis.	Name of Rose.	Date of Introduction.	Raiser's Name.	Percentage of Total Number of T's and N's tabulated.
10	Caroline Kuster (N.) .....	1872	Pernet .....	3.31
11	Rubens .....	1859	Robert.....	3.21
12	Comtesse de Nadaillac ...	1871	J. B. Guillot, fils....	2.89
13	Souvenir de Paul Neyron	1871	Levet .....	2.73
14	Madame Willermoz .....	1845	Lacharme .....	2.62
15	Anna Ollivier .....	1872	Ducher .....	2.56
16	*Etoile de Lyon .....	1881	Guillot .....	2.44
17	Alba Rosea .....	1862	Lartey .....	2.15
18	Perle des Jardins.....	1874	Levet .....	2.14
19	Madame Lambard .....	1877	Lacharme .....	2.13
20	Belle Lyonnaise .....	1869	Levet .....	2.10
21	Madame Bravy.....	1848	Guillot, père .....	1.99
22	Madame Margottin .....	1866	J. B. Guillot, fils....	1.52
23	Madame Angèle Jacquier	1879	J. B. Guillot, fils....	1.46
24	Madame Welche .....	1878	Ducher .....	1.23
25	La Boule d'Or .....	1860	Margottin .....	1.15
26	*Madame Cusin .....	1881	Guillot, fils. ....	1.14
27	Gloire de Dijon.....	1853	Jacotot .....	1.05
28	Francisca Krüger.....	1879	Nabonnand .....	0.98
29	Jules Finger .....	1879	Madame Ducher ...	0.95
30	Amazone .....	1872	Ducher .....	0.94
31	Souvenir de Mad. Pernet	1875	Pernet.....	0.94
32	Moiré .....	1844	Moiré .....	0.84
33	Bouquet d'Or.....	1872	Ducher.....	0.79
34	Adam .....	1833	Adam .....	0.73
35	Jean Pernet .....	1867	Pernet .....	0.73
36	Madame Bérard.....	1870	Levet .....	0.68
37	Homère .....	1859	Moreau-Robert .....	0.63
38	Mad. Hippolyte Jamain ...	1869	J. B. Guillot, fils ...	0.63
39	Triomphe de Rennes (N.)	1857	Lansézeur .....	0.63
40	Marie Guillot.....	1874	J. B. Guillot, fils ...	0.56
41	Comte de Paris .....	1844	Madame Pean .....	0.52
42	Josephine Malton.....	—	—	0.43
43	Monsieur Furtado.....	1836	Laffay .....	0.42
44	Celine Forestier (N.) .....	1858	Trouillard .....	0.37
45	Madame Camille .....	1871	Guillot, fils.....	0.37
46	Marcelin Rhoda .....	1872	Ducher.....	0.37
47	Perle de Lyon .....	1872	Ducher.....	0.37
48	Comtesse Riza du Parc ...	1876	Schwartz.....	0.33
49	Rêve d'Or (N.) .....	1869	Ducher.....	0.32
50	David Pradel .....	1851	Pradel .....	0.26

The Rose occupying the premier place in the above list cannot be said to be such a high-class flower as some other Tea and Noisette Roses I might name, but for general usefulness and dependability it has evidently no equal in its class, and now and again it comes so extremely beautiful as to out-rival for the time all the Tea-scented varieties shown in the same stand with it. Marechal Niel will be seen to run Souvenir d'un Ami very close indeed for first honours; and without doubt, but for the trying winters of 1878-9, 1879-80, and 1880-81, would have come out far and away the best of all the exhibition Teas and Noisettes. Some of our oldest Tea Roses continue to hold very prominent positions—for instance, Souvenir d'Elise Vardon, Madame Bravy, Souvenir d'un Ami, Niphotos, and Devoniensis, although now respectively thirty, thirty-six, thirty-eight, forty, and forty-six years old, are yet still among the very best Roses of their class. Of the new varieties the most frequently staged this year have been Etoile de Lyon, Madame Cusin, Madame Angèle Jacquier, and Francisca Krüger. I again take the opportunity of pointing out that the places given to these new Roses are all more or less doubtful. As a rule, they come out higher, I think, than they should do. There are, fortunately, only two synonymous varieties in this class which are in any way affected by their rival claims as exhibition flowers, and these are Alba Rosea and Madame Bravy, either of which would stand much higher in the table "were t'other dear charmer away."

The following lists will, I trust, be found useful to those making a selection of Roses, and wishing to know which are the best varieties in the different shades of colour.

## THE HYBRID PERPETUALS IN THE FOREGOING ANALYSIS ARRANGED ACCORDING TO COLOUR.

## LIGHT ROSES.

(Shades of White, Pale Pink, or Light Rose.)

Relative Positions in Analysis.	Varieties.	Relative Positions in Analysis.	Varieties.
1	La France	14	Monsieur Noman
2	Baroness Rothschild	15	Edouard Morren
3	Madame Gabriel Luizet	16	Marie Cointet
4	Captain Christy	17	Madame Eugène Verdier
5	Marguerite de St. Amand	18	Elie Morel
6	Merveille de Lyon	19	Abel Grand
7	Madame H. Jamain	20	†Souvenir de la Malmaison
8	Duchesse de Vallombrosa	21	Princess Beatrice
9	Madame Lacharme	22	Princess Mary of Cambridge
10	Pride of Waltham	23	Marquise de Mortemart
11	Comtesse de Serenye	24	Lady Mary Fitzwilliam
12	Marie Finger		
13	Eugénie Verdier		

† Bourbon.

## MEDIUM ROSES.

(Shades of Deep Pink or Bright Rose.)

Relative Positions in Analysis.	Varieties.	Relative Positions in Analysis.	Varieties.
1	Marquise de Castellane	17	Alfred Dumesnil
2	François Michelon	18	Hippolyte Jamain
3	Etienne Levet	19	Magna Charta
4	Comtesse d'Oxford	20	Cheshunt Hybrid
5	Marie Verdier	21	Madame Sophie Fropot
6	Camille Bernardin	22	Madame Nachury
7	Dupuy Jamain	23	Madame Prosper Laugier
8	Star of Waltham	24	Paul Neyron
9	John Hopper	25	Henri Ledechaux
10	Countess of Rosebery	26	Madame Clémence Joigneaux
11	Ulrich Brunner	27	Emily Laxton
12	Duchesse de Morny	28	Louise Peyronny
13	Annie Laxton	29	François Levet
14	Victor Verdier	30	Lady Sheffield
15	Mrs. Baker	31	Nardy Frères
16	Auguste Rigotard		

## RED ROSES.

(Shades of Carmine, Crimson, or Scarlet.)

Relative Positions in Analysis.	Varieties.	Relative Positions in Analysis.	Varieties.
1	Marie Baumann	16	Duke of Teck
2	A. K. Williams	17	Exposition de Brie
3	Alfred Colomb	18	Duchess of Bedford
4	Duke of Edinburgh	19	Maurice Bernardin
5	Marie Rady	20	John Stuart Mill
6	Dr. Andry	21	Sir Garnet Wolseley
7	E. Y. Teas	22	Antoine Ducher
8	Madame Victor Verdier	23	Thomas Mills
9	Beauty of Waltham	24	Annie Wood
10	Sénateur Vaisse	25	Madame Ducher
11	Le Havre	26	Duchesse de Caylus
12	Mrs. Chas. Wood	27	Heinrich Schultheis
13	Général Jacqueminot	28	Devienne Lamy
14	Ferdinand de Lesseps	29	Duc de Rohan
15	Prince Arthur	30	Madame Charles Crapelet

## DARK ROSES.

(Shades of Purple, Dark Crimson, or Maroon.)

Relative Positions in Analysis.	Varieties.	Relative Positions in Analysis.	Varieties.
1	Charles Lefebvre	9	Reynolds Hole
2	Louis Van Houtte	10	Charles Darwin
3	Horace Vernet	11	Lord Macaulay
4	Fisher Holmes	12	Pierre Notting
5	Duke of Wellington	13	Sultan of Zanzibar
6	Xavier Olibo	14	Duke of Connaught
7	Abel Carrière	15	Jean Liabaud
8	Prince Camille de Rohan		

\* Its per-centage for 1884 alone regulates the position of this new Rose.



THE TEAS AND NOISETTES IN THE FOREGOING ANALYSIS  
ARRANGED ACCORDING TO COLOUR.  
VERY LIGHT ROSES.  
(White, Pale Flesh, or Cream.)

Relative Positions in Analysis.	Varieties.	Relative Positions in Analysis.	Varieties.
1	Niphetos	8	Anna Olliver
2	Souvenir d'Elise Vardon	9	Alba Rosea
3	Innocente Firola	10	Madame Bravy
4	Devoniensis	11	Mad. Hippolyte Jamain
5	Rubens	12	Marie Guillot
6	Souvenir de Paul Neyron	13	Josephine Malton
7	Madame Willermoz		

PALE PINK ROSES.  
(Shades of Deep Flesh, Pale Pink, or Light Rose.)

Relative Positions in Analysis.	Varieties.	Relative Positions in Analysis.	Varieties.
1	Souvenir d'un Ami	9	Moiré
2	Catherine Mermet	10	Adam
3	Comtesse de Nadaillac	11	Homère
4	Madame Lambard	12	Comte de Paris
5	Madame Angèle Jacquier	13	Madame Camille
6	Madame Cusin	14	David Pradel
7	Jules Finger	15	Comtesse Riza du Parc
8	Souvenir de Mad. Pernet		

YELLOW ROSES.  
(Shades of Yellow and Buff.)

Relative Positions in Analysis.	Varieties.	Relative Positions in Analysis.	Varieties.
1	Maréchal Niel (N.)	12	Francisca Krüger
2	Marie Van Houtte	13	Amazone
3	Jean Ducher	14	Bouquet d'Or
4	Caroline Kuster (N.)	15	Jean Pernet
5	Etoile de Lyon	16	Madame Bérard
6	Perle des Jardins	17	Triomphe de Rennes
7	Belle Lyonnaise	18	Monsieur Furtado
8	Madame Margottin	19	Celine Forestier (N.)
9	Madame Welche	20	Marcelin Rhoda
10	La Boule d'Or	21	Perle de Lyon
11	Gloire de Dijon	22	Rêve d'Or

The severe injuries inflicted on Maréchal Niel by three consecutive hard winters can be clearly traced in the percentages for that variety. In the first three of the eight years these were respectively 10·1, 10·7, and 10·8, while in 1880 the per-centage fell to 7·0, in the next year to 5·3, and in 1881 to as low as 2·9. Last year it suddenly rose to 9·5, but now in 1884 (owing to the hostile nature of the flowering season) it only stands at 5·7. Souvenir d'Elise in 1881 also fell very low—viz., to 2·6. On the other hand the percentages of Souvenir d'un Ami during these cold winters never once descended below 6·6, nor that of Marie Van Houtte below 5·3. The positions of the different Roses in the foregoing tables will therefore be seen in some measure to depend upon their relative degrees of hardiness. The few instances just given ought not, however, to be regarded as anything like fair average examples. In fact, taking the original tables throughout, the three severe winters just referred to leave as a rule no very clear or decided mark upon the per-centages for these years. And this is no doubt due to the fact that the weather of the late spring and early summer has generally far more influence upon the quality of the blooms ultimately obtained than that of the preceding winter months. When, however, we come to take any individual year as a whole, its effect on certain Roses, whether favourable or otherwise, becomes at once apparent. For example, the Rose year just ended is shown, by the marked decline in their per-centages, to have been generally unfavourable to most of the H.P.'s, and particularly so to

such fine varieties as Marie Baumann, Baroness Rothschild, Madame Gabriel Luizet, Captain Christy, E. Y. Teas, and Marquise de Castellane, and of the Teas and Noisettes to Maréchal Niel, Anna Ollivier, and a few others. It has, on the other hand, suited Abel Carrière, Madame H. Jamain, Reynolds Hole, and Xavier Olibo amongst the H.P.'s admirably, also nearly all the Teas, and especially Souvenir d'un Ami, Jean Ducher, Marie Van Houtte, and Niphetos.

For the leading idea of this analysis I gratefully acknowledge my indebtedness to that king of florists, Mr. Charles Turner, who at one of the early meetings of the National Rose Society suggested that the names of all the Roses in the prize stands at this Society's metropolitan exhibition should be taken down and afterwards classified. The results in this way obtained would, he thought, after a series of years give the relative positions of all the leading sorts more accurately than could be secured in any other way. The materials at my disposal would not, of course, allow of my carrying out this plan in its entirety—indeed, at a crowded show the task of taking down so large a number of names has been found to be almost an impossibility. Something, no doubt, has been lost by my inability to adhere strictly to Mr. Turner's original suggestion, for at no other Rose Show are all classes of exhibitors so equally represented. On the other hand, something, I hope, has been gained by not restricting the investigation to any one show or to any one period of the exhibition season. However this may be, the surprising uniformity in the following mean per-centages for the different years will, I think, be generally accepted as a sufficient guarantee of the soundness and satisfactory character of the system as it has been here carried out.

1877	1878	1879	1880	1881	1882	1883	1884
1·38	1·19	1·19	1·21	1·15	1·20	1·24	1·09

These are the average per-centages in each of the different years for all those H.P.'s (nearly fifty in all) which were entered in the original tables as having been generally exhibited throughout the whole of the eight years under consideration. The slight variations in the values for the different years evidently indicate the good and bad Rose years, the best Rose season in recent years being that of 1877, and the least favourable the one just passed. Although many of the varieties in my list of Hybrid Perpetuals take up very different positions as compared with Mr. Hinton's election of exhibition Roses in 1881, yet it is satisfactory to find how little discrepancy there is in the positions of the leading varieties when taken as a whole, no less than nineteen of the first twenty-four Roses in his list finding a place among the first twenty-four H.P.'s in mine; and even of these five absentees three, Maréchal Niel, Catherine Mermet, and Merveille de Lyon, cannot properly be reckoned as defaulters, one being a Noisette, another a Tea, and the third quite a new Rose. It will, no doubt, be remembered that in the election referred to Mr. Hinton's table included both Hybrid Perpetuals and Teas and Noisettes.—E. M., Croydon.

PEAS IN 1884.

PEAS have always been the principal of summer vegetables. No crop is more generally grown, and the more anyone knows how to appreciate good vegetables the greater is the desire to extend the Pea season. Of late much attention has been devoted to the introduction of very early varieties, as well as others which will remain useful until the end of the season, and much success has attended the hybridiser's exertions in both sections, but I think the greatest improvement has taken place in mid-season and main crop varieties, which are ready early in June and do not cease until the end of September. I still regard Mr. Culverwell as the king of Pea raisers. True, he has not given us many new varieties for a year or two, but several of his productions are not surpassed by any others; their prominent points being robust constitutions, prolific habit, and excellent qualities. Of good American Peas we have very few, the dwarf-growing American Wonder, introduced by Messrs. Sutton some years



ago, being the only variety of any value. From France good or new varieties of Peas never come, but these or others are never missed, as it would be absolutely impossible to surpass the good qualities possessed by many Peas now offered to the public in this country. Messrs. Sharpe of Sleaford have for some years been sending out two noted varieties of Mr. Culverwell's—viz., Giant Marrow and Paragon. They are both good. The former is one of the best of the large-podded varieties, and the latter is a short thick-podded early variety of much merit. Both have done well in 1884. Messrs. Carter have long made Peas one of their specialities, and their Telephone, Telegraph, Stratagem, and Pride of the Market are too well known now to require any description. They are all good in every respect, and have maintained their high characters well throughout 1884. Duke of Albany, a new Pea of this year, bears a striking resemblance to Telegraph; so much so, that were the pods gathered and mixed it would be a most difficult matter to separate them, and were a row of each grown side by side it would be very difficult to tell the difference. From this it will be understood that Duke of Albany is a good Pea, being Telegraph in all points except in having wrinkled seed, which makes it a little more tender for early spring sowing.

Of late we have been receiving some surprisingly good Peas from Messrs. Webb of Stourbridge. For exquisite quality and uncommon productiveness they are highly commendable. The Wordsley Wonder, a new Pea of 1884, was grown early in the season in frames, later on in a warm south border, and later still in the main quarters, and in each case most satisfactory crops were obtained. It is a blue wrinkled Marrowfat about 3 feet in height, and an immense bearer of dark green pods, which fill well from end to end with tender sweet peas. It is certainly the Pea of 1884, and has quality enough to be a favourite for many years to come. The Stourbridge Marrow, Electric Light, and Triumph, are all first-class main season Peas, favourably commented upon by me in the Journal previous to 1884. Mr. Laxton's Evolution is a most handsome-podded Pea, but I fear it is not prolific enough to take its place and keep its position with others. Veitch's Perfection, as everybody knows, is a splendidly flavoured Pea, but were the pods more numerous it would be more cultivated. Laxton's Omega is a late variety, which, when once introduced, will always be retained. Sutton's Latest of All is true to name, and for present gathering has no equal. Sunrise was on its last trial this year, and has been discarded. William the First is still retained, and Sutton's Ringleader is regarded with equal favour. The edible-podded Peas are novel, and some of them very good. An unnamed variety I had from Messrs. Jefferies of Cirencester this season is the best I have seen. It attained a height of 5 feet, produced purple-coloured flowers and fine pods, which were ready for use as soon as they were 3 inches long, and remained good until they were full grown, when some of them were 10 inches in length and about 2 inches in width. At this time they contain large peas, which are boiled with the pods, and are uncommonly good. Everybody should grow this Pea.

The summer of 1884 was a very trying one for all Peas. Always delighting in abundance of moisture at the root when in full growth, this condition was naturally wanting during the hot weather and the long drought, and where the deficiency was not remedied by deep and good cultivation, or copious waterings, the Pea season would be a short one. But Pea crops in gardens always repay for the best attention, such as deep tillage, heavy manuring, and artificial watering when required. In shallow light soils it can be readily understood that Peas would fail, or some good varieties only prove moderately satisfactory in 1884, but with those named above failure would occur through want of cultivation, and not from any lack of good properties in the Peas. Where ground cannot be specially deeply dug and manured for Peas, it is a simple matter to dig out a trench about 2 feet wide and the same in depth, to be filled with rich material for the Peas. As a rule we never grow our Peas as close as they can conveniently follow each other, but they are kept wide apart with some rows of dwarfed vegetables between, and we always follow the trenching-out plan of preparing the ground for each row. Light manure is of the utmost advantage in producing fine crops of Peas in dry weather, while mulching over the roots is an excellent summer practice, and I do not think there ever was a season when they required it more and were benefited by it to such an extent as during the past summer.—J. MUIR, *Margam Park*.

### ORCHARD HOUSES.

I ALSO am a constant reader of the *Journal of Horticulture*, and am indebted to it for many valuable hints which have con-

tributed to my success in the cultivation of various plants, and among others of orchard-house trees. The latter bubble, as your correspondent calls it, has with me been sparkling in the sunshine of prosperity for about thirty years and has not yet burst. I would ask, therefore, to be permitted to say a few words in favour of a system which, whatever its drawbacks may be in the hands of some, is yet when properly managed calculated to afford the amateur a fair supply of fruit and a large amount of pleasure. I was one of the first who adopted Mr. Rivers' plan, and I not only read his book but visited him at Sawbridgeworth, and found him so intelligent, pleasant, and courteous that I soon gathered from him both in seeing and hearing all the information that I required, and let me add that, having sought his advice, I followed it.

I thought that it was as well whilst I was about it to put up a substantial house; so I pulled down a wall which ran across the centre of my garden and used the materials as a foundation, which I raised 2½ feet high. On this I erected a span-roofed house 72 feet long by 21 feet broad, with glass ventilators that could be opened the whole length of the building on both sides. What a London firm would have charged for such a building I know not, but to me it was comparatively cheap. I was my own architect, bought my rafters ready for use and my glass cut to size, and while the village carpenter put up the woodwork my own man put in the glass. Half of the house is heated and is used as a vinery and for Camellias with other winter-flowering plants. The other half is my orchard house, the central bed of which is given to fruit trees, the side beds to flowers. The partition between the two houses is of glass, and has a panel on each side which can be open or shut, so that if a late spring frost is apprehended when the trees are in bloom I can throw in a little heat and make all safe. The number of trees varies, of course, according to their size. This year I have had fourteen, which have yielded about sixty dozen fine fruits. Had I trusted to trees on the open wall the result would probably have been nil. At least such has been the case for many years whilst trying to grow Peaches and Nectarines out of doors.

Now with reference to the cultivation of orchard-house trees and its difficulties. Your correspondent speaks of the need of patience and perseverance, but will he tell me how many plants can be brought to perfection without the exercise of these virtues? If you are content to have in your house misshapen plants lolling about from side to side and curled with blight you may easily grow such without trouble; but if you want a seemly and shapely plant on which your eye can rest with satisfaction from first to last much care and watchfulness, much patience and perseverance, must necessarily be exercised.

Your correspondent next proceeds to suggest what may happen in the choice and use of soil and in the choice of trees, and I feel inclined to supplement his many "mays" with this additional one. A man may want common sense, and if so he had certainly better not attempt the cultivation of any plants. He evidently is not fit for that entomological warfare, which, however, is not so fearful a thing as "H. W. H." represents it. The novice may be frightened at the hose which he marshals with so much effect, but a very small quantity of soft soap will keep the enemy away. I melt 2 lbs. of soft soap in four gallons of water, and put half a pint of this mixture to every four gallons of water that I use for syringing night and morning, and neither green fly, nor red spider, nor thrips nor ants interferes with my amusement. And what a pleasure it is! Can anything be more beautiful than an orchard house when the trees are in bloom? or anything more interesting than to watch the setting of the fruit and its gradual development among the tender leaves until it reaches maturity, whilst banks of flowers on either side lend their aid to enliven the scene, and Stocks and Mignonette help to relieve the bare look of the ground on which the trees are placed? Now that they are removed the bed has had a dressing of liquid manure and has been planted with Chrysanthemums, which will keep us gay till Christmas.

But I should weary your readers to tell all the uses to which my orchard house is put. Early Cauliflower and Lettuce find a place there in spring, and being pricked out from the seed bed into small pots become sturdy plants by the time the weather admits of their being planted out. One caution I would give about the choice of trees, which is this: It is almost impossible to get trees from the nursery of any size the symmetry of which is not spoilt in packing by broken branches. Hence my plan has been to buy maiden trees, cut them back to five or six eyes, and plant them in the open. The next year I pot them, cut them back again, and still grow them out of doors. The third year they will bear from one to two dozen fruits. By buying a few plants every three or four years I have a stock ready to replace any trees that may fail, and, what is more, I have them trained



to suit my own fancy, which adds very much to the pleasure of growing them. I have, of course, seen large trees grown as "H. W. H." describes; but the fault which I find with that system is that you have too many fruit ripe at one time and it is soon all gone, whereas by pot culture and a judicious choice of sorts you may prolong the season and have a good supply of fruit for a succession of weeks. My advice, then, to persons of small means and limited space would be, By all means have an orchard house as affording the most useful result and the greatest amount of pleasure.

If you want to keep your trees clean syringe the leaves on the right side. Many gardeners seem to imagine that they have done this when they wet the upper surface, but the enemy is concealed beneath, and no amount of water on the upper surface will dislodge him. The syringe which I use is one originally made by Tylor. It was not, however, sufficiently appreciated, and they no longer keep it in stock. It draws water for itself through an indiarubber tube 5 feet long, and has a nozzle with a moveable joint, which when turned at right angles sends the water under the leaves. I would not be without it on any account.

—SENEX.

#### POTATO CULTURE AND POTATO DISEASE— SCIENCE VERSUS PRACTICE.

THE very witty paper of Mr. Worthington Smith in the issue of the 9th inst. induces me to ask you to find room for some further dissertations on a kindred subject; though when I tell you that I am one of the "ignorant crotchetsmongers" who ventured to compete for the grand prize of £100 therein referred to, and was consequently a contributor to these essays, "all of which were of course so feeble or atrociously bad that the prize was necessarily altogether withheld," I have grave doubts as to your compliance. Still (if you will allow me) as some sort of justification for the fatuity that led me to write, and after this lapse of time leads me to own to it, I would urge that I was at that time under a delusion—the delusion that the object of the prize given was, if possible, to obtain such practical information as might be utilised in the repression or amelioration of the Potato disease rather than a conglomeration of abstruse scientific terms and disquisitions, which in effect would merely leave the matter where they found it. Consequently I neglected my mids and spores and oospores, and contented myself with a record of different experiments I had made, and what I had gleaned from them, with speculative arguments as to the nature of the disease founded upon analogical data. And here was the mistake I made. Practical information as to the conditions most favourable to the spread of the disease, as also those which made it possible altogether to neutralise its ravages, were at a discount, it was only the unveiling of the occult mysteries attending its procreation and birth that could find favour.

Now do not let it be thought that I treat lightly the teachings of science, far from it; still in some cases the teachings of practice are at least equally valuable. For instance, few can fail to be interested in what entomologists tell us is the life history of the aphid—its series of viviparous generations, &c., &c. Yet when I was in charge of the houses at my father's nursery the practical information that tobacco smoke and tobacco water would check the ravages of these interesting creatures was of far more consequence to me than their method of procreation. Thus when I learned that the coveted prize of £100 was to be offered to a foreign savant to induce him to fathom the mysteries pertaining to *Peronospora infestans*, I ventured to predict to the numerous friends who kindly condoled with me upon my egregious failure, that the learned fungologist would never tell us enough about it to enable us to check the Potato disease, and even ridiculed to them the learned Council who so hastily assumed that the fungoid parasite was necessarily a cause when it was possibly only a consequence. Of course I was rash, but the prediction was not far wrong; and there is something to be said about consequence *versus* cause even yet, though if the oospores discovered by Mr. Worthington Smith are able to reproduce themselves and transmit the disease (as it is called) to successive generations of plants, it is almost overwhelming evidence in favour of cause.

Those who, like myself, have been used to force Cucumbers and Roses in the early months of the year know how easily a house of either may be infested with mildew—stimulated too much with liquid manure, exposure for a few minutes to a cold east wind, and frosts. There it is, and the luxuriant growth gives place to leaves whose every pore is clogged by its parasitic enemy. Now is this unnatural and diseased state of the plants caused by the interference of the mildew with their natural functions, or is the mildew apparent only because the sudden check to the over-stimulated growth has induced such derangement of the tissues as to encourage abnormal development in the parasitic form? Also how is it that the Scotch Champion Potato, for example, obtained direct from the north of Scotland, is perfectly vigorous and shows no disease, while after a few years spent in a more enervating climate it is much less robust, and its tubers diseased are plentifully infested by the parasitic *Peronospora*? This I have seen repeatedly and over many acres where examples of the robust and weakly were grown side by side. Now was the disease in the one the consequence of weakened constitution or not? If not, why did not the attacking *Peronospora* creep out of one trench into another and serve all alike? This, by the way, for young gardeners to think over.

In my discarded essay I advanced the theory that the disease did not, as was then believed, make its way down the stalk after attacking the foliage, but that the spores carried by the air or rain made a direct attack upon the tubers, and this, I believe, now is generally accepted as true. I also detailed the results of numerous experiments, some of which proved that it was possible to save from attack any portion of a field or garden however bad the disease might present itself, though unfortunately the means employed would be impracticable upon a large scale. Since then in a desultory way I have tried further experiments, chiefly in corroboration of those narrated, and I have, though laying no claim to scientific attainments, learned enough of the predisposing causes of the disease and the mode of its procedure to say that practically I can retard or accelerate its progress either upon land of one kind or other (that is in seasons when the disease is prevalent), and dare undertake from one tuber to cut four sets, one of which, planted on land where nearly all decay, shall produce sound tubers, while the other close by has nearly all rotten; and the remaining sets planted on land where the disease is almost unknown shall have one root practically worthless, while the other is sound. But I am already intruding on your space, so conclude by remarking that, partly favoured by circumstances and greatly by the experience I made an effort to relate in 1873, I have never even in the worst years of the disease been without a fair crop of sound Potatoes, and never had to replace, since I knew what a Potato was, the dish of this favourite esculent by any other vegetable.—W. GODWIN, JUN.

#### DINNER-TABLE DECORATION.

I THINK "W. B." has done good service in calling attention to this very important subject, and also in wishing for the ideas of other "young scribes," for there is no doubt that much useful information may be widely diffused through the medium of this Journal if the young men to whom this kind of work is generally entrusted will help each other, by recording in its pages the result of their experience. This matter requires the most artistic abilities of the gardener, especially where there is a succession of parties, rendering it necessary to have totally different styles of arrangement to give variety on each occasion, and when perhaps the materials at command are very limited; but it is surprising what good results may often be obtained by the most common materials when the arrangement is artistically designed and ingeniously carried out.

What may be called a golden rule in dinner-table decoration is always to have some distinct feature in each arrangement. If a design is worked out in coloured leaves let them be used in such quantities and in such a way as to give colour and effect to the whole. If cut flowers are used for filling glasses or epergnes let them form the prominent feature of the arrangement, and sometimes let plants, either large or small, supply colour, grace, and beauty. One of the most popular ways of decorating a dinner table is to use rather tall trumpet-shaped glasses with projecting arms, which support smaller cups or trumpets around the central one, and a rather wide dish-like base. The dish should be arranged with the largest flowers, using as much as possible those that show to the best advantage when the eye looks down upon them. Allamandas, Dipladenias, upright-growing Roses, Chrysanthemums, and Camellias are all good for the purpose, with a few sprays of some light material to take off the stiffness; but it is not necessary to make the base particularly light when you have a tier of smaller glasses above. The arrangement of these should always be extremely light and graceful; nothing approaching stiffness or heaviness is allowable. The flowers used should be of the lightest description, such as Bouvardias, Jasmines, Begonias, Plumbagos, Ericas, and Epacrises, with a few Grasses intermixed, and a light fringe of Adiantum or Pteris serrulata, to which might be added a few sprays of Fuchsias, Begonia fuchsioides, or any other small pendulous flowers. When the above plan is well carried out there is nothing to surpass it for elegance and beauty. It is also a style that finds great favour with the judges at many of the best exhibitions.

A very pretty effect can also be obtained by using small plants or Ferns placed in glass, silver, or china ornaments, and dotted about at regular intervals on the table, with one large plant and a few smaller ones tastefully arranged in a bowl for the centre. There are numbers of plants suitable for the purpose. I will mention a few that I have found particularly so: Pandanus Veitchii, P. utilis, and P. elegantissimus, Dracenas terminalis, ignea, and congesta, Croton angustifolius and Chelsonii, Asparagus plumosus nanus, Cyperus alternifolius and variegatus (struck from tops), Grevillea robusta, and Caladium argyrites. Aralias Veitchii and gracilis are often used on account of their lightness, but one great objection to them is the dull colour of their leaves, which do not look well by artificial light. The best Aralia I know for the purpose is A. leptophylla, which has the same style of growth as A. Veitchii, with leaves of a fresh green colour.

When the arrangement consists principally of leaves there is plenty of scope for variety of colour and design. A surprisingly beautiful effect can be produced by the green, variegated, and



autumnal tints. They look well when arranged as arcs of a circle joining a continuous line around the table, or at the base of the dessert dishes, candlesticks, or the epergne, if one is used. A little practice will soon enable a person of taste to work out various combinations of form and colour far better than I can describe in writing. I will enumerate a few kinds of leaves that are very useful for the purpose: *Coleus*, *Fittonia*, *Berberis aquifolia*, *Cissus discolor*, *Ampelopsis*, *Abutilon*, *Ivy*, and *Cannas*. I have attempted to write these few remarks with the hope that many will be induced to state their experience of this subject, of increasing importance, in the study of which many an evening hour may be pleasantly and profitably spent. —H. DUNKIN.

### JUSSIÆA GRANDIFLORA.

We are indebted to Carolina for the plant our figure represents. It is said to have been introduced in 1872, but appears to have found little favour amongst cultivators. Loudon pays a poor compliment to this family of plants, regarding them as unworthy of the name of Jussieu. *Jussiea grandiflora* is an aquatic plant. A greenhouse is suitable for its cultivation. Though possessing no great beauty it might be included in the collections of those desirous of growing plants of this nature. It



Fig. 61.—*Jussiea grandiflora*.

may be increased by seed sown as soon as ripe, in pots drained and filled with a compost of loam and sandy peat and placed in water; also by division. Where there is no aquarium large basins or bowls may be substituted. I have sometimes beaten clay firmly in the bottom of ordinary garden pots for some of my aquatic pets, and they have succeeded beyond my expectation. It is to be regretted that there is not more interest taken in the various species of water-loving plants, which when once established require but little attention.—N.

### TOMATO PLANTS FROM AUTUMN CUTTINGS.

THERE is no better way of obtaining healthy fruitful Tomato plants early in spring than by taking cuttings now, rooting them, and afterwards keeping them in an intermediate temperature until January, or into spring if necessary, before fruiting them. Propagation by cuttings has many advantages. In trying a batch of seedlings, if one or two turn out extra good, probably they may have been fertilised by some of the inferior ones when in bloom, and if seed is saved from a fruit of this kind, the progeny may be grievously disappointing; but if cuttings are taken of the best varieties, kept throughout the winter, and fruited by themselves next season, there will be no danger of deterioration. From a batch of many I have this year selected one as being the most robust grower, freest fruiter, largest and most handsome I have seen, but few seeds will be saved of it this season, as we have a large number of young plants which were recently inserted as cuttings. All Tomato plants have many young growths on them at this time. Some of the most robust of these should be taken at once, made into a cutting in the usual way, placed singly into the smallest sized pots, plunged in a gentle heat, and in ten days they will be rooted and ready for placing on some light airy

shelf for the winter. As they show an inclination to grow the point may be constantly kept pinched out of the leading shoot, as there is no reason in having them tall until they are shifted into larger pots and started into growth for fruiting; and about Christmas or after the new year will be early enough to begin operations of this kind, and it is then the great advantage of having cutting plants to deal with will be felt, as they will fruit much earlier and be more prolific than any plants which could be raised from seed sown now or in spring.—A KITCHEN GARDENER.

### THE OLD NURSERIES, MAIDSTONE.

THOUGH the establishment of which Mr. George Bunyard is the active and practical head is entitled to the prefix "old," as the business was established in the last century, the term only applies strictly to the comparatively small home surroundings, the chief nurseries, one two miles west, and the other the same distance east of the town being young, the oldest just rising into manhood, for neither of them has attained its majority, and both have as healthy an appearance as the most critical observer could desire to see.

Kent in August is beautiful, the forests of Hops which clothe the sides of the hills and spread down the tortuous valleys then approaching their prime, while the far-stretching orchards sparkle with red and golden fruit. In October the outlook is somewhat dingy, for the Hops are picked, the bine lying in black heaps on the land, and the poles piled in cones like a lot of huge dark-fluted extinguishers that are not exactly ornamental; the fruit, too, is gathered, or most of it, only a little now remaining, the crops of early Apples especially, having been better, perhaps, than is supposed by far-away dwellers from the "garden of England." But if we cannot see the fruit we can see the trees—old trees in fields, not a few of them scraggy and approaching the end, with young trees in the nurseries to take their places, and enough to spare for other districts. To see these young trees in various forms, immense numbers, and of superior quality, we find our way to the Allington Nursery.

This, as before observed, is about two miles westward of Maidstone, and it is scarcely possible to conceive a site better adapted for the growth of fruit trees. The soil is of the best—a medium sandy fertile loam, thoroughly drained, and the position fully exposed—conditions for producing free and healthy growth and its satisfactory maturation. Not many years ago the great extent of ground occupied with fruit trees was a wild wood. This has been cleared away, the roots "grubbed," the land trenched, tons of ragstone excavated, and the whole is now clean as a garden. Work of this kind extending over forty or fifty acres so well accomplished, and the ground cropped as it is now, is no light achievement. The ground is boldly undulated, and gentle slopes are to be found to almost every point of the compass. This is of advantage in the disposition of the trees and Roses, and experience teaches the positions in which the different kinds succeed the best. The configuration of the ground also renders the nursery picturesque, and a tour of the grass paths which intersect the groves of trees is both agreeable and instructive.

The fruit farmers of Kent are somewhat exacting in their requirements, and it is of no use *telling* them the stocks are good. They must see and examine for themselves, and the grower who has not something to show that will bear critical examination is not likely to have many visitors. They require trees that are clean—that is, the wood free from canker or blemish of any kind, also essentially fruitful without being stunted in growth. Such trees they have been in the habit of finding at Allington since the nursery was established, and they can find them now. The proprietor having found that he could satisfy what may be termed his county clients, was justified in making his resources widely known, and the result of his enterprise has led to the expansion of his business in a remarkable manner. What was once a small but respectable local nursery has developed into an establishment that ranks with the best of its kind, having a "nation of customers."

And there is room for all. A glance at the decrepit character of orchards all over the country and the acres of ground that are occupied with inferior varieties of the most useful fruit, with a knowledge of the fact that young orchards of great extent are being established in countries which, though distant, are brought near enough by fast steamers to exert a powerful influence on our markets, must lead to extensive planting "at home" if British growers are to compete successfully in the production of useful, wholesome, marketable fruit. There is no valid reason that they should not do so. The climatal impediments that exist here are not absent over the water; and if bad fruit years have to be admitted so have bad cereal harvests from time immemorial; yet farmers have continued, and will continue growing grain, and fruit-growers have continued and will continue planting trees; in fact, they must continue, or they will lag behind, and only be famed for second-rate produce that cannot be profitably grown. The fruit of the future must be of the best, and this can only be secured either on a large scale for supplying the markets, or in smaller quantities for home consumption by regularly and periodically planting healthy young trees of the foremost varieties.

In nurseries such as this, where trees do not remain long in stock, we do not expect to find any great quantity of fruit, yet some of the two and three-year-old bush and pyramid trees are usually found bearing. In October the early Apples were gathered, such as the Lord Suffields and others; but some fruit was seen on later sorts good in size and of remarkable colour. Such richly coloured Cellini Apples are rarely seen—dark reddish crimson. Is there "something in the soil" to account



for this wonderful colour, or is it due to atmospheric causes? Perhaps both exert an influence; certain it is the fruit fully exposed to the sun was the darkest, but that on the shaded sides of the trees is of a richer rosy red than it is often produced in the sun. The heavily laden trees of this free-bearing variety were very handsome. Particularly striking, too, were sturdy examples of Lord Derby, bearing huge fruit bountifully. This is evidently a most abundant early-bearing Apple in a dwarf state, and is thus admirably adapted for bushes, from which the heavy fruit is less likely to be blown than off more exposed standards. Lady Henniker, Stirling Castle, and Ecklinville Seedling are amongst the free-bearers in a small state. The Melon Apple bears heavily its handsome well-formed fruit, which was brilliantly coloured; and Annie Elizabeth is increasing in repute, the tree being a good grower and bearer of fine solid Apples. The useful Apple, Pott's Seedling, is notable; the New Hawthornden, heavily laden with splendid fruit, as also are the handsome and productive Loddington Seedling and Grenadier, both grand culinary varieties. A Russian Apple, Rambour d'Hiver, is a strong, sturdy grower, and the fruit very large and fine; and very beautiful are fruits of The Queen, for which Messrs. Saltmarsh had a certificate two or three years ago. Warner's King ranks among the best of the late Apples, bearing noble fruit.

Amongst dessert kinds, Cox's Orange Pippin is fine in size and colour on healthy fruitful trees, and the Ross Nonpareil is particularly attractive, while the profitable and popular King of the Pippins commands attention. Those are a few of the many good varieties bearing superior fruit.

Particular attention is given in establishing the different varieties on stocks that experience proves to be the most suitable. Some are worked on the Nonesuch, others on the Doucin, some on the Broad-leaved Paradise, and a few even for dwarf work on the free stock—a Crab, but not the wild Crab of the hedgerows. The French Paradise stock is very sparingly employed, if at all, as it restricts the growth of the trees too much for Mr. Bunyard's practical and discriminating clients, who grow fruit in the moderately fertile soil in fields rather than in rich and deep ground in gardens.

Budding is the method of propagation usually adopted, and by no other process is it possible to effect better unions. Trees intended for standards are also budded not far above the ground, the stem being formed of the variety added, not of the stock, and the lateral growths are not trimmed off smoothly the first year as if trimming walking sticks, as the growths feed and strengthen the stems. The growths from the bud this season vary from 5 to 7 feet, many of the Plums exceeding that height, and strong in proportion.

Standard trees are not standards in name merely, but have stems of 6 feet and upwards, so that when the trees are planted the ground can be cropped between them, and horses and cattle pass under the heads if required. Of these standard trees there are miniature forests of Apples, Pears, Plums, Cherries, and Damsons, one flat of the latter, Crittendens, numbering some 10,000 trees ready for planting; and this is just an example of the different kinds of fruit. It is surprising to see the number of Pears grown as standards, the varieties consisting mainly of the Hessle, Caillot Rosat, and Lammas Pears for orchards, and many choice sorts for gardens, as indicated in the catalogue. Of Plums the number is surprising, showing that the demand must be great; it is perhaps greatest of all for Victoria and The Czar, while Rivers' Prolific, Belgian Purple, Pond's Seedling, and Grand Duke are evidently popular favourites; and it is not surprising this should be so when their great productiveness and useful fruit are borne in mind.

Peaches and Nectarines are well grown, trained, and ripened, the season having been favourable for them; but the most remarkable are standard trees under glass trained to wires in a huge orchard house. These trees have been budded low, with the object of obviating the bulging of the stems where bent to the wires, as too often results when the union is effected there; or in other words, the trunks of the trees are not Plums but Peaches; and finer stems and heads for the age of the trees—two seasons' growth from the bud—were never seen. They are capable of bearing excellent crops on the long yet strong and well-ripened shoots.

Among the small fruits all the most famous of the Lancashire prize Gooseberries are grown; but for field and market culture, such as Early Sulphur, Velvet White, Warrington, Crown Bob, Lancashire Lad, and Rifleman are mainly relied on and provided in thousands. Of Currants, the favourite red is Victoria, and of Blacks, Baldwin's and Lee's Prolific; Carter's New Champion being also represented. The favourite Raspberry for growing by the acre in fields is Carter's Prolific, being sturdy and fruitful, but for quality and culture in gardens Prince of Wales is not perhaps surpassed, and for late bearing Belle de Fontenay. Nuts are of course represented, suckerless young trees just as they ought to be and must be to satisfy experienced cultivators, all the leading varieties being represented; and here, too, we find amongst other things a true stock of the excellent Hawkes' Champagne Rhubarb, which has had the honour of being certificated by the Royal Horticultural Society.

Then there are Roses in thousands on all sorts of stocks, also on their own roots, with Rhododendrons, American plants, ornamental trees and shrubs; in fact, something of everything to make a nursery complete.

For forest trees and Conifers of all the useful kinds we must go to the eastern nursery, known as the Chiltern Hundreds, and we find them in plenty, as, for example, 40,000 Ash trees in one batch, and so on, these being grown for walking sticks; but if we go on enumerating there is no knowing when the end will come, therefore much must be passed that might be noted; but this must in justice be said, that for excellence of stock, both as to variety and quality, with the order and neatness that

prevail, also the evidences of care and good management everywhere, these nurseries of seventy or eighty acres are a credit to Mr. Bunyard, and to the great fruit-growing county of Kent, in which he is so honourably known and widely esteemed. Although absent when the stock was inspected the attentiveness of his courteous representative, Mr. A. Robinson must not be overlooked by—A CASUAL VISITOR.

#### NOTES ON LATE GRAPES.

LATE Grapes should be fairly well coloured now; in fact, Lady Downe's should be perhaps the best of all in this respect on account of the fruit of this variety being cut for bottling early, in my case before Christmas. Gros Maroc is still the earlier of the two in colouring, though far from being ripe. Alicante is always good in colour, yet it has been hinted to me that, strange as it may appear at first sight, this very useful Grape has not generally the dense bloom usual to this variety, owing to the very hot season. I can see a more reddish tint than usual in the Grapes here, and in one house I have just seen Grapes which have been ripe some time and are fast losing their freshness. How many growers of Gros Colman, those especially who grow for market, can say their Grapes are coloured? Mine certainly are not, yet I do not fear; a striking peculiarity of this variety being that it will colour even up to November, and then will keep. Of course we have plenty of Gros Colman bunches in good condition, but quite half the crop has yet to finish.

The past warm season has not been very favourable to the production of foliage unless kept clean, which in many cases owing to scarcity of water was hardly possible. Few, I expect, will have such a superabundance of foliage on Gros Colman as to dispense with a leaf, much less a lateral, for owing to the natural curl of the leaf plenty of sun and light is readily obtained to finish and keep the fruit.

With regard to Lady Downe's, if rods 3 feet apart and laterals at the usual distance were stopped regularly during the season the foliage should be none too heavy for Grape-keeping purposes. I find that my wire is 15 inches from the glass, leaving 6 inches between the foliage and the glass. I might, speaking advisedly, say that for this month at least every leaf in well-trained Vines will be better growing. Nothing spoils the colour of black Grapes so much as direct sun or too much light. True, Grapes hang and keep after the foliage has fallen, but then this is in the dull days of autumn. The first damp foggy days of November necessitate great attention for Grapes.

Removing laterals now to my mind shows a mistake in the summer culture. I cut Grapes, then shorten the laterals or sub-laterals as the case may be, believing that by so doing I am keeping the sap nearer home to the bud for next season. I have proved that the earlier the laterals are shortened the sooner the remaining foliage dies or loses colour, and to do this, if Grapes are to hang, is decidedly wrong. I should not suppose late Vines gain much by having fruit cleared off before Christmas, but I would then have all Vines cleared ready for pruning. Heavy cropping should be avoided if possible; but heavy cropping with plenty of foliage is better than light foliage or scanty laterals.

GROS COLMAN.—The more I study the peculiarities of this Grape the more I am convinced that to have it in perfection now or even by the end of October the crop must be cut at the latest by New Year's day, so as to give the Vines two months' rest. I consider March 1st a good time to begin forcing this variety. The Grapes themselves do not prevent Vines resting, but the fire necessary to keep the fruits does the mischief. The date I give for clearing is decidedly too early for making the best market price and bottling is necessary to prolong the season through February. Not having tried this system of keeping, I would thank any of your correspondents or readers who have bottled this variety to give the results. First, is it necessary to maintain a higher temperature than for Lady Downe's? and, secondly, will they keep so that they travel safely? I can keep Lady Downe's till April, and am anxious to try Gros Colman rather largely. Keeping fruit hanging a month too late and starting a month late are two very grievous errors. We learn as we go, and oftentimes by accident, yet I cannot fail to notice the superiority of Vines of Lady Downe's of which the fruit was cut at Christmas, and of Alicante which was cut a week later, to what they were in the previous season when I left the Grapes hanging much later. Bottling will lessen early forcing, for who will force when Grapes can be kept good until April and May at a tithe of the cost? and certainly Lady Downe's in April is superior in flavour to new Black Hamburgs. Of course, my remarks in the latter sentence refer more particularly to growers for market.—STEPHEN CASTLE, *West Lynn, Norfolk*.

#### YEARLING ROSES.

THREE or four sentences of my last week's letter on this subject having disappeared under editorial supervision, I fear my argument was not very clear. The gist of it was simply this:—That the meaning of the word "maiden" (for which, if necessary, see a dictionary)—in which meaning it is strictly used, both in the stud farm and the cricket field—has nothing to do with a first year or first appearance, and is, therefore, unsuitable for yearling Roses, or, as I said, for public discussion. That the kernel of my argument should be considered undesirable to print, though indeed I thought it was harmless, is surely a stronger proof than I could bring of the unfitness of the term.—A. F. M.

[We have not heard that the argument of our correspondent was otherwise than clear. The words accidentally omitted were "a maiden over at cricket is not fertile of a run." If that sentence is read with the



fourth paragraph on page 346 the matter can scarcely be misunderstood even by non-professional cricketers or rosarians.]

### NOTES ON APPLES.

MUCH might be said about Apples, and yet leave a large amount of interesting matter untouched. Now, although this is not an Apple year, yet it is a season in which we can learn, perhaps, more practical lessons than we did in an overflowing year like the last, and I am very sure that were gardeners and others interested in Apple culture to forward to the Journal such notes of experience as that printed from Mr. Gilbert at page 237, we should all of us be much wiser than we are at present. One of the most important points to be learnt in a season like the present is the variety of Apples to plant and to increase, and which kinds to avoid. True no doubt it is that locality, which includes in one common expression soil and climate and other matters which go so far towards success or failure, has a very decided influence on many varieties, but there are a few sorts which do well wherever Apples will fruit at all. In a previous communication I named those which I could place the greatest reliance upon. The one named Cockpit, and for which I have had a number of names, I was told this week by some noted pomologist was not Cockpit, though in some respects like it. Coalston Pippin is the latest name given it, and I hope the correct one. It is to be hoped that the labours of the Apple Congress will do something to help Apple growers, but I am afraid the work of one year is far too limited to be of value proportionate to the labours undertaken. The R.H.S. ought to have a permanent Committee to examine and name Apples at stated periods throughout the season. There was no possibility of arriving at correct nomenclature in the case of varieties which were gathered and presented to the naming Committee of the Congress in a condition of unripeness. Four meetings throughout the time home Apples are in season would be sufficient to include all varieties. Varieties which were not known might be grown at Chiswick and compared with those already there. Nurserymen especially ought to make sure of having their stock true to name; unfortunately it does not always happen that they have, and a really good sort may be condemned for this reason, or a bad one by having its name attached to a good variety be praised.

Reverting to the influence which seasons have on the Apple crop, it is very necessary to guard against exceptional circumstances. If I were to form a judgment as to the bearing qualities of varieties from the experience of this season alone, that judgment would be of slight value. Keswick Codlin is a total failure this year, so is one tree of another variety, which is a most persistent cropper, but the name of which I cannot secure. The reason for failure in these cases arose from the very exceptional crop the trees bore last season, and for permitting which I blame myself. I have had Lord Suffield fail in the same way. It is one of the good points of Warner's King, Ecklinville, King of the Pippins, Alfriston, and some others that they do not have excessive crops in even a good season, and in a bad one they do not fail. Though "Thinker" and Mr. Abbey are both perfectly able to look after themselves, I am sure they will not object to my noticing one or two points which "An Old Gardener" has mentioned. There is much which I must agree with in that communication, but to the whole of his deductions I cannot. I have not the slightest doubt myself that the difference between the Apple crop in Kent and in Northumberland, to which he alludes as finishing the argument he produces, has occurred as much owing to overcropping last year in the former county as from frost in spring. It would be idle to say that frost has no effect. It, unfortunately, has an effect, but it is blamed without discrimination as to facts. I have repeatedly found, when flowers were developed sufficiently to examine, that the organs of fructification were abortive and the fruit germ itself sometimes wanting. I have found this occur with most kinds of hardy fruit, and even with Peaches grown under glass. It happened this season very extensively with Apples here, and the result, I am afraid, would have been much the same, frost or no frost. How am I to account for good crops on certain varieties of Apples, some of them quite as good as last year, while others are absolutely barren? Strong growths early ripened in autumn produce healthy well-developed flowers, and in that term I include not only the floral covering, but the all-important rudimentary fruit. Ripening means to me a continued process—not suddenly brought about and finished in a hot summer, but rather a work undertaken in genial autumn. When we experience a "good" autumn the chances are in favour of a heavy crop of fruit the succeeding year, for the very obvious reason that varieties which mature slowly are not checked in the process. I would respectfully draw, not only the attention of your correspondent to this phase of the subject, but also that of your readers generally, and particularly to the rapidity with which buds swell through autumn—in fact, it is the natural means of removing the no-longer-required foliage, and also to examine the quality of blossom in spring. There is also the unknown process undergone by the trees throughout the "resting" period. What changes occur then we do not know, but this fact every gardener is aware of, that a certain season of "rest" is absolutely necessary for fruits. Try to force them too quickly and failure results.

I pass on to another interesting question which has been prominently brought before us—the fruiting of Apples on one-year-old shoots. And what I have to say here is to ask how Apples grown in orchard houses produce their fruit? Perhaps some of your readers may have noticed—Mr. Douglas, for instance, who at one time grew Apples thus. As to the fact that Apples do fruit on the preceding year's growths we cannot doubt. This season, for instance, two trees of Keswick Codlin, budded on August 24th, 1882, each bore fruit, but in my experience this is not com-

mon. I should imagine that under warmer skies than we experience, and especially more genial late and autumn months and springs less subject to east winds, that the bearing of Apples on the previous year's wood might be not so much an accident as it is with us now.—R. P. B.



**THE HORTICULTURAL CLUB.**—The first meeting and dinner of the Club in their new quarters, Henrietta Street, Covent Garden, was held on Tuesday evening the 14th inst. There was a large attendance, including the Revs. T. Flintoff and F. H. Gall, Professor Michael Forster; Messrs. B. S. Williams, George Deal, William Bull, J. S. Cousens, J. Cutbush, H. M. Slotenhoff, H. Briscoe Ironsides, A. Bull, C. T. Druery, H. J. Adams, H. Balderson, J. Wood Ingram, Shirley Hibberd, &c. Much satisfaction was expressed at the arrangements which had been made. Some interesting plants were shown, notably the remarkable form of *Scolopendrium* called *Helwezii* by Mr. Slotenhoff, and a remarkable form of *Blechnum spicant* by Mr. Druery. Mr. Balderson of Comer Hall, Hemel Hempstead, contributed ten varieties of Grapes grown in one house, including Golden Champion, Muscat of Alexandria, Foster's Seedling, Mrs. Pince's Muscat, Buckland Sweetwater, and Duke of Buccleuch. These were in excellent condition. The Secretary also contributed some good examples of *Doyenné du Comice* and *Comte de Lamy*, the two best October Pears grown. A pleasant and interesting evening was spent, and many good wishes expressed for the prosperity of the Club. Two new members were admitted.

— **RICHARDIA ALBO-MACULATA.**—This is an excellent plant for the decoration of the flower garden in summer. It only grows about 1 foot in height, and in outline the leaves are of the handsome Lent Lily type, but far prettier, as their bright green is beautifully dotted over with little white spots. I lately saw a fine batch of it in Messrs. Wheeler's nursery at Gloucester, and I thought then it was one of the best fine-foliage garden plants I had ever seen. In foliage or sub-tropical beds it would be a difficult matter to find a more effective plant, and I am surprised it has not been more used in all gardens.—M. M.

— **A TWIN-FLOWERED CYPRIPEDIUM LAWRENCIANUM.**—Dr. Paterson, Fernfield, Bridge of Allan, N.B., sends us a specimen of an extremely fine twin-flower stem of the above-named *Cypripedium*, a departure from the ordinary form that is rarely seen in this Orchid, though it is not uncommon in *C. insigne*. The flower stem is 2 feet long, proportionately stout; the flowers are 5 inches in diameter across the petals, and the dorsal sepal is 2½ inches in diameter, beautifully marked with rich purple on a white ground. Both flowers are equally fine, and very seldom do we see such a strongly grown sample of this handsome *Cypripedium*.

— **NERINE FILIFOLIA.**—Flowers of this pretty bulbous plant, also from Fernfield, accompanied the *Cypripedium*, and are scarcely less interesting. It is one of the small-flowered species, with very narrow pale pink wavy petals, the blooms being produced in umbels of ten to twelve in scapes 8 or 9 inches high. For arranging with other cut flowers this is most graceful, its delicate colour and elegant flowers rendering it charming. Like another celebrated orchidophile, Baron Schröder, Dr. Paterson has a great partiality for the *Nerines*, and, like him, grows them extremely well.

— **ROSES IN OCTOBER.**—From the same source we have received some fine Rose blooms, proving how favourable the weather still continues in sunny sheltered Bridge of Allan. Two are particularly good—namely, *Marquise de Castellane* and *Captain Christy*, the former very large, substantial, and of excellent colour.

— **RHUS RADICANS.**—Amongst plants with richly tinted autumn leaves this comparatively scarce species of *Rhus* is very remarkable. For training on a wall or the side of a house it is admirably adapted, as a number of small rootlets are emitted from the sides of the stems and branches, which adhere to any surface and support the plant. The leaves have three ovate leaflets which assume rich shades of red and



yellow at this season of the year, remain attached to the plant for a considerable time. The colours are extremely bright, surpassing the *Ampe-lopsis Veitchi*, and, though not so rapid in growth as that, it soon covers a good space. We recently noticed a good example of this plant at Leigham Court, Streatham Hill, where it is growing freely up the side of the house.

— IT is with unfeigned regret that we have received the intimation of the DEATH OF BARON DE CATERS of Antwerp, which took place at his Château of Wouw (Holland) on the 12th inst. Baron de Caters was born at Antwerp on the 11th of June, 1811, and was consequently in the seventy-fourth year of his age. He was a familiar figure in all that pertained to the advancement of horticulture and agriculture in Belgium, being President of the Royal Horticultural Society, member of the Superior Council of Agriculture, and as a naturalist President of the Royal Zoological Society. Kind and amiable in his bearing to all, his genial smile and hearty shake of the hand will be missed by many whose privilege it was to meet him and co-operate with him in those pursuits in which he took so much interest. We sincerely sympathise with his afflicted family in the severe loss they have sustained.

— FRUIT AND VEGETABLE SHOW.—We are informed that the Exhibition which will be held on Tuesday, Wednesday, and Thursday next in the conservatory of the Royal Horticultural Society, being the last of the series of the most successful meetings which have been held in connection with the International Health Exhibition, will be of more than usual interest and extent. It has been decided by the authorities to allow it to remain open until the close of the "Healtheries" at 10 o'clock P.M. on Thursday, the 30th inst. All exhibits to be removed on Friday morning, the 31st October.

— DEATH OF DR. RODEN.—It is with much regret that we learn of the death of Dr. Roden of Kidderminster, whose name will be familiar to our readers in connection with Strawberries that were raised by the diseased gentleman and figured in our columns from time to time. Dr. Roden was a medical man of high repute. In 1836 he received the diploma of the Apothecaries' Society, in 1842 he took the degree of M.A. at the University of St. Andrew's, and in 1844 that of M.D. of the same University. In 1857 he became a Fellow of the Royal College of Surgeons, and in 1860 a Licentiate of the Royal College of Physicians, Edinburgh. He has also held various honorary positions in connection with medical associations. He was four times Mayor of Kidderminster, and discharged the duties of Chief Magistrate with zeal and ability. He took great delight in his garden, in which he worked scientifically and successfully, and his contributions to the horticultural press were invariably suggestive, instructive, and met with general acceptability. Dr. Roden died on the 12th inst., aged 70 years.

— CATALOGUE OF ROSES.—The second edition of the National Rose Society's Catalogue has appeared in a considerably enlarged and improved form, with the addition of a catalogue of garden Roses. It comprises five lithographed representations of Roses to show the types of the groups, with 1, Cupped; 2, Imbricated; 3, Globular; 4, Globular high centre; and 5, Flat blooms, the varieties selected being respectively—1, Baroness Rothschild; 2, A. K. Williams; 3, Pierre Notting; 4, Alfred Colomb; and 5, Souvenir de la Malmaison. The garden Roses are arranged in two large groups—Summer Flowering and Autumn Flowering—the first including the Provence, Pompon, Moss, Miniature Moss, French, Damask, Hybrid China, Bourbon and Noisette, Austrian Briar, Scotch, Sweet Briar, Boursault, Evergreen, and Banksian Roses. The other group contains the Hybrid Perpetual, Bourbon, China, Tea and Noisette, Hybrid Tea, Polyanthæ, and Japanese Roses. The date of introduction, form of flower, colour, habit, and remarks on the general character, are given with each variety, rendering the catalogue of especial value. It is published by Charles Dickens & Evans, 24, Great New Street, and can also be obtained post free for thirteen stamps from either of the Hon. Secs., Rev. H. H. D'Ombraïn, Westwell Vicarage, Ashford, Kent, and Edward Mawley, Esq., Lucknow House, Croydon.

— PROPOSED TESTIMONIAL TO DR. ALEXANDER PATERSON.—A Committee of the leading inhabitants of Bridge of Allan, N.B., has been formed to obtain funds for a testimonial to be presented to Dr. A. Paterson in recognition of the services he has rendered as medical practitioner during forty years in that district. By his writings and personal influence he has also contributed greatly to the deserved popularity of the place as a resort for invalids. To readers of this journal Dr. Paterson is well known

as an enthusiastic and advanced Orchid grower, whose efforts to extend the "cool" system of treatment have been so successful. The Honorary Secretary of the Committee is Mr. Robert P. M'Cagie; and the Honorary Treasurer, Mr. John Graham, Bridge of Allan, to either of whom letters may be addressed.

— NATIONAL CHRYSANTHEMUM SOCIETY.—The second meeting of the Floral Committee of this Society was held on Thursday evening last at the Old Four Swans Hotel, Bishopsgate; E. Sanderson, Esq., presiding, and with only one exception all members were present. A number of very fine blooms of Chrysanthemums were exhibited, and first-class certificates were awarded to Colonel Mallack for Japanese Chrysanthemums *Monsieur Astorg* and *Monsieur Tarin*. A sport bloom from a Japanese variety was also exhibited by Mr. Penfold, Leigh Park, Havant; but it was decided to defer any award until the sport was thoroughly fixed. The next meeting will be held on Thursday evening October 30th, and growers (whether members of the Society or not) are invited to send specimens of new or rare varieties for inspection.

— APPLE TOWER OF GLAMIS.—An Irish paper gives the following:—"In the garden of Mrs. Hamilton, Bayview, Caw, there is an Apple tree which has this season produced fruit of extraordinary size. One of the Apples grown on the tree weighed 17½ ozs., and seems to be quite sound, though not perfectly shaped. The fruits were few in number, but they all weighed from 12 to over 17 ozs. Mr. William Orr is the gardener, and the produce of the orchard does him credit."

— PINE APPLE CULTURE IN BRAZIL.—The *American Cultivator* thus describes the method adopted with these fruits:—"As the fruit ripens in January the young suckers from the roots are taken off in April or May and planted in newly cleared fields at a distance of 1½ to 2 feet apart, the strongest producing fruit the following year. These seldom weigh above 3 or 4 lbs.; but the later ones grow very large, and their fruit often weighs from 10 to 12 lbs. Slovenly growers allow the old hills to continue fruiting, but the best results are obtained by annual plantations."

#### ROSE-COLOURED NYMPHÆAS.

QUESTIONS are from time to time asked regarding the hardiness of the rose-coloured variety of our common Water Lily, and also the variety *rubra* of *N. odorata*, not only north of the Tweed, but many lovers of the beautiful aquatics in the south are not at all sanguine of its success outside. That they are hardy enough even far north there can be no doubt, sufficient time having elapsed since their first introduction into cultivation in our gardens; and where the anxiety to have them has overcome the doubt of their hardiness they have surpassed all hopes, and within the last half-dozen years their capacity for standing even the hardest winters has been thoroughly tested. With them, however, as with many other aquatics that adapt themselves to our trying climate, planting near the surface of the water should in all cases be avoided—from 2½ feet to 1½ foot at the very least being about the depth usually recommended, as deep planting not only serves to protect the crowns from frost were they likely to be injured, but it also, I find, serves as an inducement to freer flowering.

*Nymphaea alba* var. *rosea*, which is confined to Sweden, was first introduced into this country about the year 1872, and since that time has been cultivated with, I believe, unvaried success in several places where aquatic plants are a speciality; indeed, wherever the *N. odorata*, *N. tuberosa*, and *N. alba* can be grown there will be no trouble with the rose-coloured variety in question.

Of *N. odorata* var. *rubra* much the same may be said, and as they both form quite a novelty in the way of hardy aquatics, we may yet hope to see our lakes made beautiful with a colour that unfortunately has been too long associated with glass houses and hot-water tanks.

In the matter of soil they are not fastidious. Strong loam, to which has been added a good half of cow manure and rough sand, will be found a good mixture in which to grow them; and, instead of lifting or disturbing the plant when fully established, preference may be given to a good top-dressing for the first two or three years, or until a failing is detected.—M. S.

#### LEONOTIS LEONURUS.

At the meeting of the Royal Horticultural Society last week, Messrs. H. Cannell & Sons, Swanley, exhibited several specimens of an old but little known plant from the Cape of Good Hope, which bears the botanical name given above, and the popular title of the Lion's Tail. The plants were shown in pots, fine bushy specimens 3 or 4 feet high, and bearing a profusion of bright orange-coloured flowers in dense whorls in the axils of the branches. They were very strong in appearance, the flowers being tubular, slightly curved, and 3 or 4 inches long, suggestive of their near relative the genus *Phlomis*, or in some degree of the stove *Æschynanthuses*. The plants had been grown throughout the season in the open



air, but were lifted and potted a week or so before exhibition, and though they are said to be hardy, they are much more useful for conservatory or

Chrysanthemums are in their prime, affording abundant bright blooms, and after that time forced plants begin to appear on the stages.



Fig. 62.—LEONOTIS LEONURUS.

greenhouse decoration, for which they are admirably adapted. The time of flowering, too, is much in their favour, because October is a rather dull month in such structures, more so than November, for then the

Several other species of *Leonotis* are known, but they all have a strong family likeness, except that two or three are annuals, while *L. Leonurus*, *L. intermedia*, and *L. parvifolia* are perennials.



## TASTE IN FLOWER GARDENING.

NOTWITHSTANDING your correspondent's display of literary ability on page 355 in endeavouring to defend himself by the ingenious use of parallel paragraphs, I fail to see that he has disproved the truth of the statements contained in my previous article. I also fail to see in what way I have distorted his views. My object in criticising his previous article was to defend hardy plant culture from what I then and still consider was an unjust comparison of their value with ordinary bedding plants for flower garden decoration. I have had ample experience of the hardy and ordinary bedding plant question, and I still contend that the greatest amount of pleasure and beauty is to be obtained where the preference is given to hardy plants forming the principal feature of flower garden decoration. Hardy plant culture is rapidly rising in popularity, and as gardeners become more educated in the beauty of form and colour, their adaptability to our climate, and their good qualities, the more their great merits will be appreciated. It is simply ignorance of the qualities of such effective plants as Pentstemons, Snapdragons, Marguerites, &c., to include them under the term of "wild gardening." These plants are far too beautiful and effective to be classified as synonymous with roughness and untidiness.

Your correspondent asks me to furnish him with names of places where ordinary bedding plants are grown on a large scale, requiring from six to nine months' preparation before bedding out. This I decline to do publicly, but I can furnish the Editor with many examples, if necessary, of gardens where geometrical and carpet bedding is carried out on such a large scale as to require a great amount of glass and labour, which might be more profitably utilised if hardy plants were judiciously employed. With reference to the alleged discrepancy in the amount of time absorbed in the preparation of bedding plants, that is simply a clerical error which should have read "nine," and not "six" months, as printed. "Sylvanus" says "there is very much that is crude and misleading" in my statements anent the preparation and housing of bedding plants, but I fail to see what foundation he has for making this charge, as all gardeners who have to deal with the propagation and preparation of bedding plants know too well that immense quantities of Pelargoniums, Alternantheras, Iresines, &c., have to be stored in heat during the winter; and in spring, too, their propagation and growing-on requires the assistance of heat, as well as hardening off in frames, before they are finally planted out. For what purpose are these extraordinary efforts made? For a three-months display in the flower garden. The real question, then, is, Are the results commensurate with the advantages? My experience, and that of other hardy-plant advocates, is that they are not.

I repeat again in substance what I had written in my previous article, that I have no wish to see the ordinary bedding plants dispensed with, but I contend that ordinary bedding plants are employed to a greater extent than their merits justify. Bedding plants employed judiciously in conjunction with hardy plants is what I advocate. Of what possible beauty or interest can the long monotonous ribbon borders be to persons of taste? Surely such borders as are occasionally seen filled with hundreds of *Caleolarias*, scarlet *Pelargoniums*, *Pyrethrums*, &c., would be rendered far more attractive if planted with a good selection of hardy plants. By judicious selection and planting a hardy plant border is full of interest during nearly the whole of the year. The mixed border is the most attractive way of growing hardy plants. In this you can plant attractive groups of bedding plants, such as the many varieties of Zonal *Pelargoniums*, *Ageratum*, *Iresines*, and others, and a splendid effect can be obtained by a combination of the two materials. Hardy plant culture has not had a fair trial in consequence of their being relegated to most unsuitable positions in out-of-the-way corners, where they oft-times linger and die, and, indeed, are looked upon as "rubbish." If gardeners of the bedding-out school only tried hardy plant culture with the same amount of zeal and enthusiasm as they do for geometrical and carpet bedding flower gardening would be more attractive and beautiful than it now is. Assuming that many hardy plants require the support of stakes, as stated by your correspondent, the time required to attend to this trifling matter once a year—and it need not be done oftener if well done at the first—would not occupy so long as the pinching and pegging down of certain plants in carpet beds.

As a proof of the correctness of my statements and of the gradual decline of the bedding rage, I may point to Hyde Park and Kew Gardens as examples where hardy plants are now being extensively employed for embellishment of beds and borders, instead of so much of the vulgar bedding formerly carried out therein. I quite admit the truth of "Sylvanus's" assertion that if the proprietor of a garden wished his garden to be managed in a certain manner he has a perfect right to have it so, but instances are very rare indeed where owners of gardens possessing good taste raise an objection to the employment of hardy plants for decorating the borders of the flower garden. The credit of the revival of hardy plant culture is not due to gardeners, but to gentlemen of culture and taste, who know how to appreciate the most beautiful in gardens.

I am charged by your correspondent with possessing conventional ideas on flower gardening. I fail to see wherein the conventionality exists. I repeat again that the ordinary system of flower garden decoration needs considerable reform ere it becomes satisfactory, as also does the formation of the flower garden itself. The rage for terraces, fountains, and statuary, regardless of their fitness and suitability for the situation in which they are employed, has happily had its day. There is too much similarity of style, especially in small gardens, which have the appearance of being turned out of one mould. We possess an immense wealth of hardy trees, shrubs, and flowers, and let us make a more rational use of

them. We can only do so by closely studying Nature, and if we call in the assistance of art we shall do much towards producing an ideal garden. Can the intricate and formal blocks of beds, with walks of coloured gravel, which are often to be met with situated in the middle of an open lawn or adjacent to the windows of the mansion, filled in the summer with masses of gaudy colours and in winter bare, be called beautiful? This vulgarity is often considerably aggravated by the absence of a background of trees and shrubs, or a proportionate amount of greensward to tone down the glaring effect of the gaudy colouring. These ideas are far from being conventional.

"Sylvanus" finally says that the most naturally formed rockeries are highly artificial. I beg to differ from him again. The grandest sights in Nature are the rugged and naturally formed Alpine rocks. These have been formed by Nature alone, and she has provided their special vegetation for growing thereon. If we wish to cultivate these special rock plants we must provide a suitable home for them, and in providing that home we must accept Nature as our guide. If we do thus, we shall reproduce Nature, and thus add beauty to our gardens and avoid the formalism so conspicuously present where the strictly artificial features of statuary, fountains, and terraces exist or can be dispensed with. The situation should form the keynote to the arrangement, and were this rule followed we should see more of Nature and less of meaningless artificiality in the formation of flower gardens. Finally, gardens can be made beautiful and enjoyable without having to graze them with "Highland cattle" or "Southdown sheep."—ADAM.

## CHRYSANTHEMUM AND FRUIT SHOWS, AUTUMN, 1884.

As will be seen from the list appended, no less than thirty exhibitions are announced to be held during November this year, and these numbers afford conclusive proof of the rapidly extending popularity of the Chrysanthemum. As usual, the most important shows will probably be those at Kingston, the Royal Aquarium, Westminster, Birmingham, and Liverpool, valuable prizes and cups being offered at each. At Kingston the third champion challenge vase, value 25 guineas, will be offered for forty-eight blooms, twenty-four incurved and twenty-four Japanese. It is offered under the same conditions as the previous two—namely, that an exhibitor must win it twice, not necessarily consecutively, to claim it; but if it be won by three different exhibitors in the first three years the competition in the fourth will be confined to the winners.

The National Chrysanthemum Society have a very strong and liberal schedule, the leading classes being those for the best group of Chrysanthemums, in which £8, £5, and £3 are offered, and for forty-eight Chrysanthemum blooms, twenty-four incurved and the same number of Japanese, not less than eighteen varieties of each, prizes being £15, £7, and £4. The first prize in this class is the largest amount offered at any show as one prize for Chrysanthemums, and may be expected to bring some powerful competitors. At this exhibition a number of valuable special prizes are also offered for vegetables.

At Hull two very good classes are provided—namely, for forty-eight blooms, the prizes being £10, £7, £4, and £2, or a total of £23, thus ranking next to the leading class of the National Society in amount. For twenty-four blooms, £5, £2 10s. £1, and 10s. are also offered, and these should bring a good display of fine flowers.

The Liverpool Horticultural Association provide for a general show of cut flowers, stove and greenhouse plants, fruit and Chrysanthemums, a total of £180 being offered as prizes, including several of substantial value for the last-named plants and blooms.

October 28th, 29th, and 30th.—Fruit Show at South Kensington.

November 5th.—Ealing.

" 6th and 7th.—Southampton.

" 7th and 8th.—Havant.

" 10th and 11th.—Stoke Newington.

" 11th.—Putney; Royal Horticultural Society's Meeting, South Kensington.

" 11th and 12th.—Kingston, Croydon, and Lambeth.

" 12th and 13th.—Royal Aquarium, Westminster; Bath and Colchester.

" 13th.—Watlington-Thames.

" 13th and 14th.—Richmond, Brixton, Teddington, and Tunbridge Wells.

" 14th.—Reading.

" 14th and 15th.—Crystal Palace, Huddersfield, Canterbury.

" 18th.—Winchester and Lincoln.

" 19th.—Wimbledon.

" 19th and 20th.—Northampton and Birmingham.

" 20th.—Taunton, Dublin, and Aylesbury.

" 20th and 21st.—Hull.

" 22nd.—Loughborough.

" 25th.—Manchester.

" 25th and 26th.—Liverpool, Basingstoke.

## CACTUS AND OTHER DAHLIAS.

In a recent issue I referred to single Dahlias, their comparative merits and future prospects. A box of blooms of the above from Mr. Cannell seems to come as a gentle reminder that I had not referred to them. As they are increasing rapidly, and possess all the desirable staying or holding qualities I noted as deficient in singles, I will refer separately to some of those, together with newer introductions not, so far as I know, yet in commerce.

*Juarezii*.—Among Cactus Dahlias I still think this peerless. The warm rich crimson colour is not its least commendation. The blooms are produced in great profusion, and last at this time of the year perfect for at least two weeks. For the last two years I have not been able to flower it before October outdoors. Perhaps some reader would give me a hint how to have it earlier. Mr. Cannell has now a purple shade of it.



*Tait's Oporto Cactus* (White).—Constance or Ariel was the old form of this, but now seems likely to be superseded by this Portugal introduction, though for the present many are likely to do as I shall—grow both. For cutting or for any purpose for which white flowers are utilised, such as church decoration, funeral wreaths, &c., this seems a great acquisition. In the box of blooms just referred to I find one labelled "Scarlet Constance," a new form not yet, I believe, distributed. Like the original, the florets are at first pointed and ultimately expand flat. This makes half a dozen distinct varieties.

*Cochineal*.—This seems to belong to the last-named class, but instead of being scarlet is bright crimson or velvety red, and having the florets more distinctly pointed in true Cactus fashion.

*Picta Formosissima*.—A very distinct old variety, in floral formation like the preceding, but in colouring unique. Each floret has a band of orange-yellow down the centre, and this is deeply margined with crimson-red. With me it has proved a strong vigorous grower, but I think I shall lift and pot it before frost comes, as, like most of the Cactus Dahlias, it blooms late. With little sun heat most things lift well now.

*Germania Nova*.—Unlike any other Dahlia hitherto introduced. The colour is a delightful soft rosy pink. Instead of being rounded it is slightly flattened, and so numerous and close are the petals as to take away almost completely the character of a Dahlia. This is sure to be welcomed by all.

*Mr. Miller*.—This has most of the characteristics of a Fancy Dahlia, but the colouring is very peculiar—black shades off into velvety dark red and ends in white. I have still to notice Glare of the Garden and its variety, but enough has been said to prove that this section of Dahlias is likely to be much heard of by-and-by.—W. J. MURPHY, *Clonmel*.

### FUCHSIA FULGENS TRAINED AS A STANDARD.

THIS lovely old plant is again becoming a favourite, and should continue so. Some years ago it was seldom seen, its beauty is now better known. Scarcely a greenhouse now-a-days but has the *F. fulgens* as one of its occupants trained in the ordinary "pyramid" form. The flowers are not seen to advantage, being almost entirely hidden with the large leaves that plant possesses. Grown as a standard the long flowers are seen, and look well. A plant here with a stem 3 feet high and a head the same in diameter, carrying some twenty racemes of flowers, has been very effective since the month of May, and is still blooming freely. Along with this I send you a cluster. It is treated the same as the ordinary Fuchsia, the principal object being to have the wood thoroughly well ripened to secure plenty of flowers the following season.—J. J.

[The example sent is very good, the raceme containing thirty-three bright scarlet tubular flowers, and a still greater number had evidently been produced on the stem and fallen in the ordinary course of decay.]

### AUTUMN-LIFTING PEACH TREES.

HAPPILY for "Thinker" he has not had to grow Peaches where, on the open walls, the trees are ever-green. If so, I think he would find that neither deep, shallow, narrow, wide, calcareous, silicious, clayey, nitrogenous, nor any other soil, however suitable may be its constituents for the growth of Peach trees, or however well or badly drained the borders may be, would compensate for autumn lifting. The borders here are 8 feet wide, 20 inches deep, with good drains  $4\frac{1}{2}$  feet deep in front of border. Another border is much wider with concrete bottom under each tree, rubble stone and brickbats over concrete for drainage, and 18 inches of soil, which consists of loam taken off limestone, a little wood ashes and old mortar mixed with part of our garden soil, which is neither too impervious to rain nor yet so open that it drains away too quickly; neither is it over-rich in nitrogenous matter, for, unfortunately, this is often too scarce for other crops.

I think the cause of our Peach trees retaining their leaves so long is in consequence of cloudy summers and the very mild autumns and winters with abundance of rain. We often have no more than 8° or 9° of frost in winter, and this only for a very short time, and being situated so near the Atlantic the atmosphere is saturated with moisture at a time when dry frosty weather is needed to check the sap and harden the wood. We unfortunately have to resort to rather cruel measures—viz., early autumn lifting to check the flow of sap.

I should have hardly troubled you with these notes had it not been that many are in similar situations, and where the squire, who is a constant reader of your valuable journal, on Friday morning brings out the paper half cut. Having opened the paper just at the notes where it says, "It is unnecessary to autumn-lift Peach trees," he calls out, John. John hastens to his master's call, and then the oft-repeated words ring in John's ears: "You remember I told you last year, when on a visit I called to see Lord D's garden, and such a crop of fine Peaches, as regards size and colour, that I never before saw. I inquired of the gardener how he was able to get such a fine crop, what kind of soil and manure he gave them, and here the gardener gave the history and treatment of the trees."

"Thirteen years ago last November I prepared this border by well draining. I then got a quantity of loam from our deer park, made the border 2 feet deep. Twenty-four trees in good condition were procured from Messrs. Z. & Co. The soil, being dry and loose, was well trodden, stations prepared 18 feet apart; the trees were planted carefully with roots as near the surface as possible. Well, sir, we have done nothing to their roots since, except giving a top-dressing after pruning and nailing every year, and we get fine crops, as you see." Lord D's garden is situated where the rainfall is about 26 inches each year, with dry autumn

and moderate frost through the winter, soil chemically and mechanically suited for the growth of the Peach trees, with a situation sheltered by high belts of trees from the north and east winds, and situated that the trees could hardly fail to give a crop. Not so with the squire's poor gardener John. His average rainfall is 45 inches, with a low situation, say 45 feet above sea level (as with us), cloudy dull summers, with mild and wet autumns and winters. John has tried everything as regard soils, drainage, &c., but without success. He at last asks the squire, who is really the head gardener, if he will allow him to try autumn lifting. "No, John," is the reply, "Lord D's gardener can grow fine crops of Peaches, and he has not touched his roots for thirteen years, and I see no reason why you could not do the same;" and, reading "Thinker's" note to John upon the unnecessary labour of lifting Peach trees in early autumn, is more than ever confirmed in his opinion that John does not understand his duties, and consequently John has to give place to one that is equally incompetent, and the squire learns that there is something necessary besides soil and drainage for the successful fruiting of Peach trees.—W. O., *Fota, Cork*.

### THE LONDON PARKS.

#### HYDE PARK.

DURING the present season a very beautiful display of brilliant flowers and tastefully designed carpet beds has been provided in the great fashionable West-end park, amply sufficient to maintain the fame this establishment has long enjoyed and to furnish useful hints to those in charge of less extensive gardens. In the ordinary flower bedding one very notable feature is that large numbers of varieties of Pelargoniums are annually grown, some new or little known forms being introduced for trial every season. This is very useful, as it affords an opportunity of selecting varieties of distinct character and sterling merit, of which points it is necessary to be well assured before propagating in large numbers, as it is very serious to find, after raising a stock of a new variety, that it is not superior to, or perhaps not equal to, others already in cultivation. In Hyde Park there are especial facilities for growing large numbers of plants; it is no additional trouble to try some new varieties every season, and a bed or two are sufficient to show whether the new comers possess any qualities to recommend them for further use. By having a good number of varieties there is also another advantage—a greater range of variation in colours is obtained, and the richer brighter tints can be readily selected.

The Zonal Pelargoniums employed in Hyde Park this season are the following, amongst which will be noted several old forms that still hold their position for bedding purposes:—*Louise*, pale delicate pink, good flower, and large truss; effective in contrast with any dark-foliage plant. *Henry Jacoby*, still unsurpassed in depth of colour; one of the darkest in cultivation. *Atalanta*, finely formed flower, warm cerise. *Lizard*, very distinct and effective, of a peculiar shaded salmon pink colour; good truss. *Miss Wakefield*, a strong grower, with large bold flowers of a brilliant scarlet tint, but not very free. *Aida*, very pale pink; rather dull and not to be recommended, judging from the examples in this Park. *Constance*, a beautiful variety, with large pink flowers having a white centre; they are borne in dense trusses well above the foliage. *Sir W. Scott*, brilliant dark scarlet, very showy; truss dense and large. *Lady Byron*, a neat and pretty variety of compact habit, with clear bright pink blooms in a fine truss. *Rev. E. Atkins*, brilliant scarlet, very large bold truss of good habit; a fine bedding variety. *Lady Bailey*, an extremely bright pink dwarf and free-flowering variety. *C. Schwind*, dark scarlet, tall habit, free flowering, and fine truss. *Leopold*, peculiar shaded salmon pink; distinct. *Hettie*, cerise scarlet; tall, free, and effective. *Triomphe*, an effective dwarf compact floriferous variety, with rather loose pink flowers. *Pirate*, very bright scarlet, showy; of moderate height. *Ellen*, an excellent variety, dwarf and free, with good flowers of a bright shaded pink. *Bacchus*, warm cerise, fine and free; flowers large. *Dr. Rawson*, large truss, rich scarlet, very handsome. *La Vestale*, pure white, fine flowers, but not very free. *Zuleika*, rich cerise flower of great size; handsome. *Lucy Bosworth*, bright pink, free and good.

As usual, the principal portion of the bedding display has been confined to the beds near Park Lane, extending from near the Marble Arch towards Piccadilly. Proceeding along this route, there is first a series of oblong beds, having central blocks of Zonal Pelargoniums, variously edged with other variegated Pelargoniums, such as *Princess Alexandra*, which is the chief favourite, *Fuchsia Cloth of Gold*, *Coleus Verschaffelti*, and *Iresine Lindeni*. Some mixed beds have also been very attractive, notably *Verbenas* of various colours, *Lobelia cardinalis*, and *Viola Blue Bell*, *Iresine Lindeni* and *Pelargonium Stella variegata*. These mixed beds, when the plants employed are judiciously selected, have a beautiful appearance, and are more generally admired than the stereotyped mode of planting in formal lines.

From near Grosvenor Gate a series of beds or pairs occupy a raised strip of turf with a path on each side. These have been extremely fine. They are very carefully and effectively planted, and have afforded a most brilliant display of colours. Many of these have been planted in a similar manner to those already noted—namely, with Pelargoniums in the centre, but having several marginal lines of the following. The dark-coloured *Iresine Wallsi*, with *Pelargonium Golden Fleece*, and *Lobelia pumila magnifica*; the silver edge *Pel. Miss Kingston*, with *Lobelia Porcelain Brilliant*; *Pel. Verona*, and *Fuchsia Cloth of Gold*; *Iresine Lindeni*, with *Lobelia Omen*; *Iresine Herbsti*, white *Lobelias*, and *Herniaria glabra*; *Pel. Golden Harry Hieover*, with *Lobelia Bluestone*; *Iresine Wallsi* and white *Lobelias*; *Pel. Princess Alexandra* and *Lobelia Swanley Blue*, the latter very free and of a brilliant blue tint; *Pel. Crystal Palace Gem* and *Lobelia Bluestone*. Here again some beautiful mixed beds have been much admired, very prominent amongst the best being a combination of *Viola Blue Bell* and *Pel. Princess Alexandra*. Another of *Grevillea robusta*, *Carnations*, and purple *Verbenas* has been attractive. *Abutilon marmoratum aureum* and purple *Verbenas* afforded a pretty mixture; *Eucalyptus globulus*, *Violas*, and *Carnations* produced a good effect, and several others of a similar character proved how much can be done in this direction to increase the interest and beauty of flower garden displays.

Carpet bedding has been remarkably well carried out this season, the



designs mostly very tasteful, varied, and distinct. The favourite plant for the groundwork is the dark-coloured *Herniaria glabra*, and the result proves the correctness of the choice, for the rich tints of *Alternantheras* and the softer *Sedums* and *Mesembryanthemum* show much better in contrast with this than with the lighter green of *Mentha gibraltaria*. One large oblong bed has been very striking. The foundation consisted of the *Herniaria* with outer bands of *Golden Feather*, *S. mpervivum tabulæforme*, *Sedum glaucum*, and *Sedum elegans*. There were large end panels of *Alternanthera aurea*, with smaller ones of *A. versicolor* and *A. amœna*, with a large central panel of *A. magnifica* surrounded by *Antennaria dioica*. Several small tufts of *Spergula aurea* dotted about on the dark ground also had good effect. Most of the other carpet beds were planted in a similar style, the shape and disposition of the panels of *Alternantheras* being varied, but no very elaborate or intricate designs were attempted, and the simpler ones are decidedly the most generally pleasing.

The sub-tropical beds are distributed over the park in several suitable positions, some in the dell opposite the Park Lane beds, others near Rotten Row and towards the bend of the Serpentine. All the best and boldest Palms, *Solanums*, *Cannas*, &c., are employed, but there is nothing specially new to note. It need only be added that every portion of the park indicates by its excellent condition the most careful and considerate superintendence.

#### BATTERSEA PARK.

The "People's Park" has been gay for several months, and though the autumn is fast depriving it of its charms, it even yet possesses some attractions. Preparations for the coming winter are, however, now actively proceeding, beds are being cleared, and the sub-tropical garden presents a striking contrast to its condition two months ago. From June to August Battersea Park is unquestionably one of the most beautiful in the metropolis; there is more diversity of surface, more true landscape effect, than can be obtained in any of the others. In the neighbourhood of the lake in particular there is scenery on a small scale which, as an artificial work, could not be easily excelled, and is very often not equalled in the arrangement of trees and shrubs for graceful effect. Then, too, there are fine expanses of turf for sports, abundant pleasant walks, and ample floral attractions, so that the popularity of the Park rests upon good foundation. As an agreeable and convenient resort for Londoners Battersea Park is an establishment of considerable importance in its effect on the welfare of the people, and it is most satisfactory to note that every care is exercised not only to preserve its beauty, but also to increase it in every possible way.

The two departments of bedding-out, for which this Park is especially famed, are the sub-tropical and carpet bedding. The ordinary flowering plants, amongst which *Pelargoniums* are the most important, are also largely employed, but with the exception of one series of beds near the Albert Road, they are chiefly employed for ribbon borders and as margins to the shrubberies. Sub-tropical plants succeed admirably there, owing to the sheltered position provided for them and a certain natural moisture, which is wanting in more exposed and elevated places. These advantages induce a free vigorous growth, which gives the plants a fresh healthy natural appearance, such as they must always have to look really well. That noble plant, *Wigandia caracasana*, for instance, has been and still is magnificent in several beds, 8 or 9 feet high, with leaves 2 feet long and as much in diameter, the effect of such specimens being unrivalled by any of the large-leaved *Solanums*, *Cannas*, or other plants of a similar character. *Eucalyptus globulus* has been made a feature this season, and this antipodean tree is fast advancing in popularity for the sub-tropical garden, though as a permanent tree it appears unlikely to be of much service without protection. Some really extensive beds are filled with small trees 10 or 12 feet high, their silvery leaves and stems having a beautiful appearance. *Cannas* are freely employed of several varieties, and they make some effective beds; but one of them demands a special note. This is named *Adrien Robini*, and is certainly one of the best of the dark-coloured varieties; the leaves are of good size, and the plants of medium height, but the colour is a peculiar dark red, most distinct in contrast with the silvery foliage of the *Eucalyptus*. Bamboos, Palms, Tree Ferns, *Dracenas*, *Polygonum cuspidatum*, and even the common Hemp are also employed with good effect in suitable positions. One little-known but very old plant, *Geranium anemonifolium*, is used largely this season as a margin for many of the sub-tropical beds and shrubbery borders, and might be advantageously employed in gardens generally for this purpose. It has divided palmate leaves 6 to 8 inches in diameter, of a bright shining green colour, and rising on stout petioles to about a foot in height. They form a dense tuft, and have a most distinct appearance employed in the way indicated. It is strange that this plant has been known in English gardens for nearly 100 years should be so rarely seen when it might be so usefully employed.

The carpet beds have been as bright and tasteful as the most fastidious could desire, and several have been exceptionally fine. This is particularly the case in the walk leading from the sub-tropical garden by the lake, where there are several very distinct beds. One of these deserves especial notice, as it is the most effective and at the same time the most simple that we have seen this year. The bed is a large one, oblong in form, having in the centre a chain of broad circles of *Alternantheras*. The two end circles consist of *A. amœna*, the two next of *A. aurea*, one on each side of the two central circles of *A. magnifica*. Connecting these are what may be termed narrow links of *Mesembryanthemum cordifolium variegatum* edged with *Echeverias*, while each circle is margined with two rows of *Echeverias*, separated by a narrow band of *A. aurea*. Outside this is a band of *Mentha gibraltaria* running round the whole bed, and then a margin of *Antennaria* with small elliptical panels of *A. amœna*. This bed has been greatly admired by visitors, as, though not possessing the intricacy of design which some people prefer, it has all the merit of simplicity and taste. Several other pretty beds could be noted, but they are mostly in the usual style, with panels of *Alternantheras* on a ground of *Mentha*.

It has been already mentioned that ribbon borders are freely employed in different portions of the park, and some of these are very attractively planted. In addition to the ordinary *Pelargoniums*, *Calceolarias*, *Lobelias*, &c., *Pentstemons* are largely planted with excellent results. Two very fine varieties are grown, one purple, and the other bright red with a white throat. Both are selections raised in this park, and are admirably adapted for planting on a large scale. Other distinct herbaceous plants are appro-

priately employed, *Sedum spectabile* being abundantly used as margins with good effect, its broad green fleshy leaves and trusses of bright rosy red flowers being most pleasing.

Walks, turf, shrubberies, and every portion of the park are kept in the neatest condition, such as any gardener might be proud of, and additional features of interest are constantly being added wherever the surroundings will admit.

#### CHELSEA GARDENS.

Passing over the Victoria Bridge, Pimlico, from the north-west corner of Battersea Park is Chelsea Hospital, the grounds and gardens of which are bounded by the Thames Embankment just opposite the Park. A large portion of the Hospital Grounds (Ranelagh Gardens) are open to the public; but the fine terrace in front of the noble building is not. It is the private garden of the Governor of the Hospital, Field Marshal Sir Patrick Grant, G.C.B., and is, with the Ranelagh Gardens, under the able superintendence of Mr. Gibson, whose ready courtesy enables gardeners to inspect what is to be seen on the terrace in summer.

Nearly or quite all forms of flower gardening were represented this season, mixed beds of plants hardy and tender, ribbon borders, and carpet bedding being well carried out. Each form no doubt has its admirers; but two carpet beds were, after all that is said against this style of decoration, the chief



Fig. 63.—CARPET BED.

#### METHOD OF PLANTING.

- |   |  |
|---|--|
| 1.— <i>Chamæpuce diacantha</i> and <i>Sedum glaucum</i> . | 7.— <i>Alternanthera versicolor grandis</i> .    |
| 2.— <i>Echeveria glauca metallica</i> .                   | 8.— <i>A. paronychioides aurea major</i> .       |
| 3.— <i>Santolina incana</i> .                             | 9.— <i>Echeveria secunda glauca</i> .            |
| 4.— <i>Alternanthera amœna</i> .                          | 10.— <i>Iresine Lindenii</i> .                   |
| 5.— <i>Golden Pyrethrum</i> .                             | 11.— <i>Echeveria Peacockii</i> .                |
| 6.— <i>Pachyphyton bracteosum</i> .                       | 12.— <i>Pachyphyton bracteosum</i> .             |
|   | 13.— <i>Alternanthera paronychioides aurea</i> . |

points of attraction to visitors of every rank and degree. One of these beds was so striking that its design and method of planting is given. The bed is 18 feet in diameter, and its effect was greatly enhanced by the broad sloping border containing the beds 12 and 13, eighteen inches in diameter. The groundwork of the bed, composed of the very dark *Alternanthera versicolor grandis*, brought out with great effect the silvery *Chamæpuce*, also the neutral-tinted *Echeverias* and *Santolina*, with the narrow lines of *Golden Feather* and the shield-shaped panels of the *Golden Alternanthera*. Designs have been given from time to time of beds in every one of the London parks, but the plan now represented differs from them all. It is, we believe, the production of Miss Grant, who also suggested the mode of planting.

#### SEASONABLE NOTES ON FLORISTS' FLOWERS.

OCTOBER is a busy month with all gardeners, but especially so with those who cultivate florists' flowers—so busy that if he cultivates many kinds he hardly knows which way to turn. *Chrysanthemums* have to be housed, *Auriculas* moved to their winter quarters, *Carnation* layers to be taken up and potted, *Pansies* to be potted, *Dahlia* tubers to be taken up, *Hyacinths* to be potted, and various other minor operations to be carried out, so a few words may be seasonable and helpful to many.

AURICULAS.—Whatever may have been the case more northwards, it has been a trying season for this part of England. The drought of nearly four months' duration, the intense heat during so long a period made it very trying, and as a consequence I fear there is a good deal of autumn blooming. I was myself the victim of a singular mishap. We had a grand day here on the reopening of our church, on which we had expended upwards of two thousand pounds. We had to provide luncheon for 105 people, to arrange for the horses and carriages to be taken care of. What wonder, then, that the poor garden was forgotten! The *Auricula* frames



were in the shadiest place I can command, but that is not shady enough. My man was engaged from morning to night about the church, and, in a word, they were forgotten. The thermometer was at 80°, and judge of my horror when on the following morning I went to my frames and found the plants frizzled. And why is it that the best varieties are always those that are sure to suffer in such mishaps? So I can only say now, the best thing is to get your plants into their winter quarters at once, the frames to be facing south, and air to be given at all suitable times.

**CARNATIONS AND PICOTEES.**—The drought told on these also. They had continually to be watered, and hence I suppose many of the layers failed, as the earth was washed away from them. Still the grass is fine and healthy. I am writing of those in beds. The layers should be taken off and potted in good sandy loam, one in a small pot, two in larger ones (48's) placed in a cold frame and kept close for a few days. The frame should then be placed in the same situation as the Auriculas. When they are grown in beds, as with me, I take the layers off, place them in an empty bed, and then when I have the bed prepared for them plant them on any suitable day. This is by far the least troublesome way of growing them, but will hardly do for exhibition purposes, and makes the operation of layering somewhat difficult; but for those who grow for their own pleasure it has a great advantage over growing in pots.

**CHRYSANTHEMUMS.**—There are two ways of growing these—for exhibition purposes, and for blooming at home and for cutting. I grow for the latter. My plants are bushy and full of bloom; I do not disbud, as I prefer quantity to quality. Perhaps not quite as much as the host who, seeing that his guests rather hung fire over the claret at luncheon, said "Fire away, my lads; I know it's not very good, but there's plenty of it!" Still, I do prefer seeing a plant with plenty of flowers on it to one run up to two or three stems, but a giant mop on the top of it. They ought now to be housed and supplied occasionally with liquid manure. If I may judge from my own plants there is a prospect of a good season.

**GLADIOLUS.**—I have grown these for well nigh thirty years, but I never recollect having such well-ripened corms and so few losses as this year. The season has no doubt been favourable to them. The seed pods should now be all cut off, and as the foliage shows signs of decay they should be lifted, taking care not to rub off the spawn, for I am sure that it is to this cultivators must look if they wish to continue their growth. One of your correspondents recommends that when taken up they should be laid earth and all in a frost-proof shed to dry. In my light soil there is hardly ever any earth adhering to them if lifted in dry weather. My plan is to lay them out in a cold pit or any similar place where they will not get wet, and to dry them off gradually. When quite dry I stow them away either on shelves or bags, take off all the spawn carefully, keeping them in small bags.

**PANSIES.**—When grown in frames this is the best time to plant them out, taking care to secure them with a stout stake, as the wind is apt to loosen them, and then the water gets in about the roots. When grown in pots they should be placed under cover ready for repotting by-and-by. Alas! my operations in either line are this year nil.

**ROSES.**—A busy time indeed with those who grow this queen of flowers, which can hardly be called a florists' flower. It will be best now to examine the beds to see what plants are to be discarded, what new varieties are wanted, which old ones replaced. The beds should now also, when the weather is favourable, be mulched with well-decayed cow or horse manure. My plan is before doing so to draw earth up to the plants, so as to protect the roots in case of frost, and then to put on the top-dressing. Manure retains frost very much, and this plan I think obviates that danger. Long shoots should be shortened, and if persons are anxious to increase their stock of own-rooted plants now is the time to put in cuttings. They should be about 9 inches long, and inserted about 6 inches in the ground, the lower buds rubbed out, just leaving two or three eyes above soil.—D., Deal.

### CONCAVE FLOWER POTS.

RELATIVE to "Crute's concave flower pot," described and illustrated on page 261, our issue of the 18th ult., Mr. John Matthews of Weston-super-Mare informs us that he has made pots of this character since 1876. Mr. Matthews has also placed before us a number of letters which give the whole history of the pot from its first conception to its ultimate manufacture in the year stated. The first drawing of this kind of flower pot is by the writer of a letter to Mr. B. S. Williams, which letter (before us) was sent to Mr. Matthews on February 1st, 1876; on the 12th of the same month Mr. Williams requested to have samples of different sizes, and on July 13th of the same year 333 pots in five sizes were sent to the Holloway Nurseries by Mr. Matthews.

Also in April of the same year what was known as the "Sutton" reservoir pot was manufactured by Messrs. Wheeler Brothers at Reading, and advertised. Mr. James Blackley of Leyton, as is clear by a letter before us, dated April 10th, 1876, suggested an important improvement on that pot. In the "Sutton" pot water could only escape from the crown of the raised bottom. Mr. Blackley suggested that provision should be made for its escape at the extreme bottom, thus avoiding the collection of water that would become stagnant and injurious to the roots of plants; however, the same provision was made by Mr. Williams' correspondent, as is shown in the original drawing above referred to.

Mr. Matthews has further sent us one of the pots that were made in 1876. It is substantially the same as the sample sent to us by Mr. Crute; but there are differences of detail. In the "Matthews" pot there is no hole in the crown, provision being made for the escape of water by three holes in the sides of the pot at the base of the crown, or quite at the

bottom of the inside of the pot, the water passing through to the outside. In the "Crute" pot there is a hole in the crown as well as three others at the base, but the water passes inwards—that is, under the pot, provision being made for its further escape by small semicircular orifices in the rim on which the pot stands.

In principle the two pots are the same, and they will answer the same purpose in the cultivation of plants; but according to the evidence supplied to us, to Mr. Matthews must be accorded the priority in the manufacture of these concave flower pots.

### NOTES ON PLANTS.

**FERNS FOR CUTTING.**—While there are no Ferns so generally in demand for cutting, and which possess such characteristic lightness as the Adiantums, still there are a few that are very acceptable, and especially so when at a certain season the Maidenhair Ferns have from constant picking become destitute of fronds. While the Adiantums under certain conditions are the most valuable for all bouquet and buttonhole arrangements, yet there are cases when they are useless. In the winter and spring seasons when Maidenhair is valued beyond measure, it is very difficult to get well-matured fronds, therefore the plants must now be furnished with abundance of young ones in various stages of development. During the autumn months Maidenhair Ferns should have plenty of room and receive every attention, so as to guarantee proper development, sun and air being admitted consistently with their well-being. To harden them thoroughly in a cooler temperature is also important. A light airy vinery is an excellent place wherein to harden these plants, which serves also as a rest for those thus treated, since instances have often occurred where the crown is literally packed with fronds ready to unfold as soon as the old crop is gathered and they are once more placed into heat.

Apart from the Maidenhair Ferns, *Pteris scaberula*, when grown for the purpose, is useful for cutting. It is light in texture, of free growth, and elegant. We recently saw quantities of this Fern in Messrs. Heath's nursery at Cheltenham, where it is grown extensively for small bouquet work, for which it is well suited. It is not grown in pots in the ordinary way, but planted out on the front stages of several houses wherein are Camellias, Lapagerias, Himalayan Rhododendrons, or similar plants, preferring a cool temperature. These stages are from 12 to 30 feet in length and about 2 feet 6 inches wide, the sides boarded up, making a bed about 5 inches deep. Here it has ramblled for several years, till the beds are now densely clothed with abundant foliage. It only requires protection from frost, and it is better suited than some others to withstand exposure to cold. The fronds are gathered from these beds of *Pterises* as required, and as soon as one is cleared, it is, after a slight rest, again started into growth. This Fern is well worthy the attention of gentlemen's gardeners who require Fern at all seasons, and seeing that it rambles with equal freedom beneath the stages, it may, with the aid of a few stones, make that portion of the house attractive.

**ROSA RUGOSA.**—From time to time attention has been called to the value of this interesting species. Its numerous claims on all true lovers of gardening are these. Primarily it is adapted to almost any situation or soil, next to which it is highly decorative in foliage or in flower. For isolated positions it has few equals. Whether placed on the lawn or on the tops of mounds it is everywhere a good plant. It is not well known unfortunately, and there are very few plants possessing such distinct and pleasing characteristics—viz., beauty in foliage, in flower, and in fruit. In foliage its shining leaves are widely distinct from any other species; in flower it surpasses nearly all in regard to size, the colour being bright rose; and, thirdly, the large scarlet fruit in autumn produce an effect almost unique. It is fragrant, too, especially in the early morn. Like some other species it is rather impatient of the pruning knife. It comes from Japan, where, we believe, the fruit is used as a preserve.

**BOUVARDIAS PLANTED OUT.**—It is now fairly established that the value of Bouvardias is increased by adopting the outdoor planting system. Bouvardias form one of the most continuous and floriferous groups of plants which we possess. For some time past growers have adopted the outdoor system, comparatively few, however, planting them out. Grown in pots plunged in ashes in the open, the wood has a double opportunity of being thoroughly ripened, and which is so conducive to their floriferousness when transferred to the greenhouse for the winter. It is seldom that we meet them flowering during the summer with such freedom as we saw them quite recently in the College Nurseries, Cheltenham, where they are grown by the thousand in this way. We were also informed that from the time they were planted out they had been flowering with remarkable freedom, and judging by the abundance of terminal and axillary



trusses of flowers there to be seen, a goodly number will be guaranteed till the end of the year. Not the least perceptible improvement was the clean, healthy, vigorous, and short-jointed growths; indeed, the plants were compact bushes nearly a foot through and quite different from Bouvardias which have had to endure a stove temperature; even *Humboldtii corymbiflora* is much more compact and dwarfer than usual. Besides all this, there must of necessity be a great diminishing of labour in favour of this system over all others, which is a point gained, to which add clean-grown bushy plants; all the varieties, both single and double, are grown in this way which are worth cultivating. The plants are turned out as soon as weather permits each year, and it seems so far well worth copying. Good fibrous loam with plenty of burnt ballast mixed with it is the soil used for them.

**AGATHEA CÆLESTIS.**—Long before Tom Thumb *Pelargonium* had its being this charming plant had a home in many gardens, but it is not so now. Gardeners of the old school prized it and used it extensively as a bedding plant, and we admire their choice; but it seems to have gone with the host of other plants which had to give place to the scarlet *Pelargonium*. Such being the case, we have the privilege left us still to recommend its use as a bedding plant. One of the few cases of which we know where it is used as such is in the gardens of S. E. Bouverie Pusey, Esq., Pusey House, Farringdon, Berks, where Mr. Brown, the gardener—who, by the way, seems an ardent admirer of old-fashioned plants—has a considerable quantity of it in various ways in the bedding arrangements, the effect of which is very pleasing. It is extremely floriferous; the colour in bouquets is a good one, and as a conservatory plant for cut bloom in the winter months it is unique. Some industrious nurserymen have caused its somewhat wider distribution of late under the new appellation of the Blue Marguerite.

#### GIVING LIQUID MANURE.

I APPRECIATE "Thinker's" resolutions with regard to personalities this week, and as I have not indulged in any myself nor suggested them to "Thinker" I need say no more on that point.

As to the reasons why I did not apply our hose sooner to the Potatoes (which affords a basis for "Thinker's" assumptions on that head) I have only to say that that is a subject outside the question, which is the correctness or otherwise of "Thinker's" thoughts about liquid manure; but I may explain that I did not apply the hose sooner and oftener because there was no water in the reservoir above the fire-supply mark owing to the drought and other matters, and the watering I did give was obtained by special permit. I have for a good time this season been, and am now, carting the water for all purposes. The hose is laid down for the fire supply, but as our gathering ground is limited, so also is the garden supply from that source, especially in seasons like the present.

My contention is simply that "Thinker's" theories are contradicted by common practice, from which none of the evils he predicts follow. Between applying guano to crops in a soil parched with drought as soon as a shower falls sufficient to wash it in, and applying guano in the same way and washing it in with a hose or a watering pot, I say there is no difference, nor has "Thinker" shown there is; and it is the same with liquid manure made before applying. If there be a difference, then my contention is wrong, and if there be no difference "Thinker" is in error, and I trust he will see that it remains for him to accurately explain that difference. This he can surely do without writing so many paragraphs. "Thinker" takes up quite new ground this time. At first it was "injury to the plant" he dwelt on; now it is the "waste of the manure"—dry soils, it appears, absorbing less liquid manure than moist soils, which is a new notion to me, and amounts to saying that a bottle already half full of water will hold more than one that is quite empty. Surely soil must hold most when its interstices are empty. I did not speak of soils that had "lost their absorbent power," as "Thinker" puts it this week, but of ordinary soils and states of the ground that gardeners are accustomed to deal with. I decline also to notice or accept what "Thinker" calls "his case theoretically," and relating exclusively to "a horse." I am more at home in my own domain, and to make a theory in regard to a horse and then apply the same to a plant is what I would never think of doing. I wonder "Thinker" does not see the grotesqueness of such a mode of reasoning.—NON-BELIEVER.

P.S.—When I wrote last I did not speak of nor contemplate the example of a *Chrysanthemum* allowed to get dry "while the leaves wither," but of "Thinker's" advice "never" to give liquid manure "when the soil was dry," apprehending the writer in no exaggerated sense, but in the ordinary way.—N.-B.

#### ANDROSACE CARNEA.

THE genus to which this little gem belongs is rich, in numbers almost endless, of these true alpine beauties, and this one of which I shall now speak is one of the most beautiful. It inhabits the highest summits of the Swiss and Pyrenean Alps, where it nestles peacefully and happy beneath its snowy mantle during the long-continued winter months. When this has disappeared its tiny rosy flowers are ready to open. It is easily

recognised from other cultivated forms by its small pointed leaves, which are suggestive of *Saxifraga juniperina*. It possesses the merit of being one of the easiest managed of a somewhat fastidious and lovely genus, so that special care and attention should be bestowed it. Unlike many other species with downy leaves, and formed into tiny rosettes, it does not succumb to our variable English winters; nor is it a victim to damp, as is the case with some. It is by no means a difficult plant either to cultivate or increase, and should be planted in deep well-drained soil, peat and rich sandy loam in equal parts, with abundance of grit, to which add about one-sixth of leaf soil thoroughly decomposed. In its mountain home it receives copious supplies of moisture from melting snow, and must in no case be allowed to suffer in this respect, or failure must ensue. Its roots descend to a considerable depth when established, when it will endure with impunity a long-continued drought.

There is no reason why such a plant as this should not be grown in numbers in our gardens, but they are rarely met with, and nurserymen soon dispose of their generally limited supplies. We are, however, by no means confined to such narrow limits as these, for it is a surprising fact how great a number of plants may be transmitted through the post for a few pence, and carefully packed in transparent oilskin stays evaporation considerably. I have received in this way small consignments of rarities such as these quite as fresh as though they had been just collected, so that anyone having friends abroad might with advantage use such a medium; or, as the majority of the species seed freely, seeds may be gathered and be equally acceptable. These should be sown as soon as ripe in soil similar to the above-named, taking care not to cover it too deeply or to allow it to become dry. To prevent continuously watering newly sown seeds cover the pots or pans with a sheet of glass which has been previously thickly smeared with paint or clay. This not only saves watering, but, what is of considerably greater moment, it often saves a batch of seedlings which cannot endure excessive damp in their earlier stages.—J. H. E.

#### WINTERING FLOWER GARDEN PELARGONIUMS.

THE past summer has been a very favourable one for these plants. The hot weather in June and July rather retarded their growth, but this was not a misfortune, as in wet seasons they often grow too much and produce a superabundance of wood and leaves, but comparatively few flowers, and this is not so satisfactory as the hardy short-jointed growths produced in such warm seasons as we have had this year. The blooms this summer were wonderfully profuse, and their richness of colour was equally remarkable. All the fine variegated *Pelargoniums*, too, were most brilliant in their markings. But the profusion of flowers and bright-coloured leaves are not the only favourable results of this season, as after the extra good ripening the wood has had there will be much less difficulty in keeping cuttings and old plants healthy during the winter than has been experienced many times. In large gardens and where the varieties are not specially valuable, the old plants are seldom lifted and preserved through the winter, as young plants from cuttings inserted during August or September require less space for storage, and are generally more convenient for filling neatly arranged beds than the tall plants; but there are many afraid to trust their entire stock as cuttings, and both old and young are kept. In other instances only old plants are dealt with, but in many cases the autumn stores are sadly thinned before April or May, and it is with the view of averting decay in all kinds of stock that these notes are written. It is no use trying to winter *Pelargoniums* successfully unless they have plenty of roots in the autumn, or by November cuttings in pots or boxes, which are sure to decay freely before March. Well-rooted cuttings may be kept in cool airy frames until frost comes, but those with few or no roots should have the benefit of a little heat to improve them; but the worst of this is when heat is applied now it cannot be discontinued with advantage in the shortest days, and the best of all ways is to have the young plants well rooted and quite hardy now. As yet our *Pelargonium* cuttings are in the open air in the boxes which were filled with them in August, and they are very dwarf, hardy, and well rooted. Unless frost comes they will go through the greater part of the winter without fire heat. Before taking them into a cool Peach house or vinery the dead leaves and all the flowers and buds will be taken from them, and a heavy sprinkling of sand will be shaken over the surface of the soil amongst the plants, and not one in a hundred will perish during the winter. Abundance of light and plenty of air should be constantly admitted, and water should never be given unless actually required. No superfluous water should be used in moistening the soil, and in wet weather the soil and the foliage must be kept dry. If these conditions are strictly observed many *Pelargoniums* may be safely wintered in frames with little or in some instances no artificial heat. In dry sunny days full ventilation should be given, and in wet foggy weather keep the house closed. Many attempts are made to keep old *Pelargoniums* over the winter. Some succeed very well, others fail; but the latter is generally brought about by coddling the plants too much in the autumn, and thereby making them too tender to bear the trials in spring.

To lift *Pelargoniums* from the open beds now, and place them in close frames or warm houses, is ruinous, as tender young growth is produced, which cannot bear the shortest days, and as they decay then the whole plants are affected and soon perish. It is not safe to allow plants intended to be kept through the winter to remain in the open beds after this time, as frost might occur any morning, and then their chances of keeping well during the winter would be greatly reduced. Take them up at once, and shake the roots free from soil, cutting the roots moderately close in, taking the tops off at the same time. Cut well into the hard



wool, and when done with the roots will not be more than 3 inches in length, and the branches only a little more. To the inexperienced the plant would then look very unlike a plant to be easily wintered; but never mind that, as it is in the best possible keeping condition. They should be packed as closely as possible in shallow boxes, filled with a rich light mixture and fine sand on the surface, and then they may be wintered without difficulty in greenhouse or frame. Were the leaves and tender-pointed shoots allowed to remain on they would begin to damp and decay at once, but when these are removed there is little left for the damp to affect but the hard stems, and these will keep hard and fresh until spring, when many young growths will be emitted, and the result will be a fine stock of very bushy dwarf plants.—J. MUIR.

### ORCHID NOTES.

**ZYGOPETALUM MACKAYI.**—I was recently asked when visiting a garden what was the matter with this grand old plant, for I was told it had declined in health and vigour during the past few years. It was clear that unless some improvement took place the plants would ere long have to be conveyed to the rubbish heap. Some years ago I had charge of these plants; they made their growth in the stove during the summer months, and were then placed while in flower in the conservatory. Under this simple treatment the plants grew vigorously and increased rapidly in size. Since then the Orchids have been all placed together and kept the whole year round in the heated structure in which they are grown, with the above results. The new system of treatment deprived the plants of that complete season of repose so essential to health and vigour. The secret of growing this old Orchid well is to give it heat and moisture during the season of activity and complete rest while in flower. The conditions of the conservatory or any similar structure will suit it exactly where a temperature not higher than 45° to 50° is maintained. This plant will continue growth slowly under ordinary stove treatment where the night temperature ranges from 60° to 65°, according to the weather. To ensure complete rest in such an atmosphere the plant must be dried severely at its roots, and even then the season of rest received under such conditions is not really beneficial to the health of the plants. The large pseudo-bulbs and thick fleshy roots of this plant enable it to withstand drought for a very long time, but complete rest, so essential to luxuriant growth, is better brought about by subjecting the plant to a lower temperature. Little or no water at the roots will be needed while the plant is allowed to remain in the temperature advised. Not only is this *Zygopetalum* generally benefited by a lower temperature, but the flowers if allowed to expand under cool conditions are larger in size, brighter in colour, and they last nearly twice the length of time. This Orchid does well in a pot or pan in a mixture of peat fibre, lumps of charcoal, or broken crocks or both, and a little sphagnum moss. During the season of activity, if the pots are well crammed with roots, weak stimulants occasionally assist the plants wonderfully. This is one of those grand old Orchids that should be grown in quantity where choice flowers for conservatory decoration are required during the autumn and winter months. The flowers are highly fragrant, very suitable for cutting, and last for a long time in water.

**MAXILLARIA PICTA.**—This is not generally found in gardens where rare, new, and handsome Orchids are largely grown. It is, however, just the Orchid for those who want abundance of flowers during the season when they are rather scarce. Not only are the deliciously sweet blooms of this plant useful for cutting, but the plants when in flower may be employed in rooms without the slightest injury. Plants for this purpose are the most useful in 5, 6, or 7-inch pots. Where these plants have been grown in heat they will have completed their growth, and should have been kept since rather dry at their roots. When in this condition they should be gradually hardened and placed in a cool structure for a time. The *Odontoglossum* house will do provided the plants are kept dry, if a position with a drier atmosphere cannot be found for them. They must not be moved direct from a warm to a cool house, or the foliage will assume a sickly yellow hue. They may be rested from one to three months, according to the time their flowers are required, for they are soon produced from the base of the pseudo-bulbs after they are again placed in heat. If the plants are only given a short rest they may be again rested after the flowers have been cut; but the preferable system is to rest them thoroughly before they are forced into flower, and then they can be grown afterwards without any check.

**EPIDENDRUM VITELLINUM MAJUS.**—The spikes of scarlet flowers of this lovely and useful Orchid are very beautiful for association with *Odontoglossum* vexillarium; the two mixed together show each other off to great advantage. This is another cool species, easy of cultivation, invaluable for cutting and decoration. It flowers with great freedom, and will without doubt become very popular as Orchid culture becomes more general and useful kinds rise in public estimation in preference to a large number of species and varieties. The day for variety is passing away, and good plants, whether new or old,

that will give the greatest return with a minimum of labour and trouble are being eagerly sought for. This is one of those Orchids that does not require any particular skill in its cultivation, and grows with great luxuriance when subjected to the coolest treatment.

Imported plants if they arrive in good condition start freely into growth when placed into pots nearly full of drainage and only just sufficiently large to hold them. The pseudo-bulbs should be secured in their pots by means of peat fibre and a small stake until the formation of new roots. The moisture of the *Odontoglossum* house will be ample for the first two or three weeks after arrival, when the plants may be dewed over lightly with the syringe twice daily until they commence growth. As soon as growth and root-action have commenced the supply of water may be gradually increased until they can be treated in this respect the same as established plants.

The best time to repot these plants is just as they are commencing to make new roots. Peat fibre, lumps of charcoal, and the surface mossed are very suitable. The temperature of the *Odontoglossum* house suits these plants admirably.

### BOUVARDIAS.

ON page 352 of the Journal "J. B. H." in referring to my note on Bouvardias in a previous issue, does not consider it possible to grow these useful plants so well in cool frames as under warmer treatment; but as I have seen both methods of culture, and therefore have had opportunities of judging which was the better of the two, I have no hesitation in saying that the cool system produces the better results. As "J. B. H." seems to be a little confused regarding the term "cool treatment" as used by me regarding Bouvardias, I may state that the plants referred to were put out into cool frames on the 2nd of May, and allowed to stay there until they came in bloom. These plants have produced and still are producing abundance of fine flowers. "J. B. H." says his plants grown as stove plants have made growths as thick as a lead pencil; our plants grown in a cool frame have made similar growths, and I maintain that wood which has been grown slowly in this way, and thoroughly ripened by exposure to the sun, will certainly produce more satisfactory results than that which has been grown in a warm humid atmosphere, which produces rank succulent shoots, but wanting the stamina contained in the others.

Evidently "J. B. H.'s" plants are not in bloom yet, as he says that his "plants thus far are very fine, having growths," &c., but no mention is made of flowers. Perhaps he will by-and-by discover that appearances are deceiving.—CALEDONIAN.

WILL J. VINING or anyone else say what is the cause of mildew in Roses and Chrysanthemums? I have been much troubled with it of late years, but I think if I knew the cause I could prevent it. I read of many cures, but I have no book which tells me the above.—F.



### KITCHEN GARDEN.

**Carrots.**—All these from seed sown in spring or early summer should be taken up and stored for the winter. As in the case of other roots, only a dry day should be selected for working amongst the Carrots, as they keep very much better when taken in dry. With care in storing Carrots may be kept fresh until April or May, and all who know how much valued they are in the kitchen will be of opinion that to do this is worthy of attention. The short thick Horn varieties may, as a rule, be drawn up freely by taking hold of the stems and pulling them, but the Intermediate Long Surrey and others of this class cannot be drawn easily, and as many of them may be broken in doing so the best way is to take a fork and ease them out of the soil. In sandy land they will turn out clean, but in adhesive soil it may be necessary to rub the hands round them to clear off the soil. The stems or leaves should then be cut close off and all sorted. Never put small ones and large ones together, as they are seldom required at the same time or for the same purpose. Store them in two heaps and in two sizes, putting plenty of sand or ashes amongst them and over them. In a cool shed, outhouse, or cellar they may be safely stored.

**Parsnips.**—These should also be left in the ground unless they are growing in a very wet soil where they would be likely to decay, and they may be treated like the Carrots. Allowing dead and dying leaves to remain about the crowns of the roots will soon cause them to decay. It is from this cause that many Parsnips rot so much at the tops.

**Endive.**—This is one of the most useful of winter salads, therefore do not allow it to fail by want of proper attention now. The early batches are now almost full grown and quite ready for blanching. The best way of doing it is to tie all the leaves in a bundle at the top. If this is done when they are quite dry and they are tied rightly the water and rain will be thrown off without any of it getting into the centre to cause decay. Endive keeps much better green than blanched, and no more



should be tied up than are wanted for immediate demands. Before the frost comes severely lift a good batch, and pack the plants closely in dry frames or on the inside border of an airy Peach house or vinery.

*Celery*.—All Celery should now be earthed-up, and much of it may be finally attended to in this way. We have often repeated how to do this, and need only say now that if the soil is allowed to get into the centres of the plants they will certainly decay and be spoiled. In cold damp situations it is a good plan to use ashes for earthing-up Celery, as they keep it clean, and it does not decay so fast in winter amongst ashes as in soil.

*Peas*.—Sutton's Latest of All is still affording us some gatherings. It is a dwarf robust grower and a capital sort at this season, but, like all the others, it will soon be past, and a general clearing away of all Pea haulm should take place. Seed of any variety ripening now will not be very good, and it will need great attention and a very dry place for storage before it can be induced to keep. The same remarks apply to Kidney Beans at this season.

*Vegetable Marrows*.—These are at a standstill now, and will not grow any more. Late fruits only half grown or in a smaller state will not keep, and may be thrown away. Those which have gained full size and have assumed a yellow hue should be cut and put into a dry cool room, where they will remain good for some months, proving useful throughout the winter. All the old plants should be thrown away. Where they have been growing on manure heaps these will now be set at liberty, and may be used on the quarters being dug over.

*Asparagus*.—Do not cut over the stems of this until they have quite decayed. Many of the growths have been unusually fruitful this season, and are now clothed with red berries. These should be collected for seed, but none should be gathered except those which have developed better than the ordinary crop.

*Manure Heaps*.—As the time is fast coming when these will be in great demand attention should be given them now. The old refuse which has been collecting from the kitchen garden, potting shed, pleasure grounds, and everywhere throughout the summer, may now be rather much decayed; but if all the old vegetables, fallen leaves, and a quantity of manure from the cow-shed or stable be added to this, the whole turned over and formed into a good square heap, it will be useful for all quarters by the early spring. Road scrapings should also be got in, and if one cartload of lime is added to every half dozen or so of this material where limestone is not used it will soon form an excellent mixture for all kitchen garden ground.

#### FRUIT FORCING.

*Figs*.—*Earliest Trees in Pots*.—Trees that have been some time at rest may now be prepared for forcing. If thoroughly established in large pots, and it is not considered necessary to give them a shift, all roots that have found their way over the rim may be cut off and cleared away with the mulching and plunging material. After this is done any barren shoots that are not required should be cut out, and old stakes removed preparatory to the annual scrubbing with soap and water, when dry painting them with some approved insecticide. Place new stakes, and tie in the young wood in a horizontal or drooping position, allowing plenty of room for the even development of the young foliage. Readjust the pedestals on which the pots are to be placed in the fermenting bed, and replace the trees. With a sharp-pointed piece of iron work well down the inside of the pot to a depth of about 9 inches, removing the soil and supplying fresh rich compost. Ram firmly, and give the first of a series of waterings to render the soil well soaked by the time the house is closed in November. Where there is plenty of space several varieties may be grown, but Brown Turkey is unquestionably the best for giving an abundant crop of fruit of the highest quality. Brown scale and red spider are very troublesome on Fig trees grown under glass, and as these pests increase very rapidly too much attention cannot be paid to the winter dressings of the trees, and the thorough cleansing of every part of the structure in which they are grown.

*Planted-out Figs*.—Trees that have been in bearing since mid-summer are now commencing to rest, and may be divested of the old foliage as soon as it parts freely from the wood when touched by the hand. If planted in inside borders, and the growth is considered too strong, the present is a favourable time for root-pruning, an operation that can scarcely be overdone, particularly where the space is limited. All inert soil should be cleared away, strong roots cut out, and the drainage examined. The young roots may then be relaid in new compost, firmly rammed, mulched, and left dry until the time arrives for forcing. The young shoots that have been allowed to grow up to the glass will be thickly studded with embryo fruits, which must be protected from injury when the trees are cleaned, as well as from the effects of sudden and severe frosts, by being unfastened and drawn down below the trellis until the time arrives for thinning out the branches that have reached the extremity of the trellis. The best soil for Figs is a good friable loam with a liberal addition of lime rubble, broken bricks, and bone dust. Stimulants in the form of solid manure or liquid should always be applied to the surface when the trees are growing.

*Cucumbers*.—Keep the day temperature by artificial means at 70° to 75°, with 10° to 15° rise from sun heat. Ventilate carefully, avoiding currents of cold air, closing early, so as to make the most of sun heat. Avoid overcropping the plants, which in most cases will be inclined to fruit too freely during the autumn months. This must be prevented by at once removing all superfluous fruits as they appear. Remove any damaged portion of wood or leaf as they appear, and let the stopping, thinning, and tying of the shoots be proceeded with as necessary.

*Dung-heated Pits and Frames*.—The linings will now need to be regularly attended to, making them up weekly or fortnightly according to circumstances, and the lights should be covered with a double thickness of mats on cold nights. When mildew appears dust with flowers of sulphur. If aphides are present fumigate with tobacco on two or three consecutive evenings moderately. Canker is sometimes very troublesome, and is only to be arrested by preventing a close stagnant atmosphere, ventilating early on favourable occasions, and keeping the stems free from moisture. Rub quicklime well into the affected parts, repeating it until they become dry.

#### PLANT HOUSES.

*Eucharis amazonica*.—When the blooms of these plants are required in succession during the autumn and winter, plants that have completed and matured their growth should be selected and given two or three week's rest at the very least. In resting these plants they may with safety be placed in any cool structure, provided cold draughts are not admitted directly upon them. Before their removal from the stove they should be kept somewhat drier at their roots, in which condition they should remain while at rest in a cool structure. If the soil is wet about their roots, and it is kept in this condition while the plants are in a low temperature, the majority of their roots will perish. When strong flower spikes with large bold flowers are required the roots must be kept in a healthy state. By selecting a few plants at intervals of a few weeks and resting them, it is not difficult to maintain a supply of flowers during the whole winter.

*Epiphyllums*.—It is easy to bring these into flower in a very short time if required, especially plants that were assisted by heat and moisture to make their growth early in the season. If these plants have been properly treated they should, since the completion of growth, have been in a cool light airy position to thoroughly ripen and harden them. Plants subject to this treatment will be showing flower buds in abundance, and if introduced into heat will soon unfold their beautiful bright-coloured flowers. All plants that are retarded by being kept in a cool house should be most carefully watered at their roots, or they are very liable to perish. These plants require considerably less water than has been the case up to the present time; sufficient only should be given to keep them fresh and plump. It is a mistake to allow their growths to shrivel.

*Impatiens Sultani*.—Plants that have been in a cool house up to the present time will flower much more profusely in a night temperature of 55° to 60°. These are admirably adapted for cool-house decoration during the summer months, but at this season of the year growth is too slow under cool treatment to render them effective. They are very gay during the winter in the stove, and for this purpose should be grown in quantity. Seedlings are decidedly the best when large bushy plants are required, for they branch with greater freedom than those raised from cuttings. Those from cuttings are very useful in small pots, and are very effective when freely intermixed with other small decorative plants. They will grow well in any light moderately rich soil, and will strike freely on a shelf close to the glass in any warm structure where the atmosphere is not too moist. If the cuttings are kept close and confined they are very liable to damp instead of striking freely.

*Carnations*.—Tree varieties that have been standing outside up to the present time should be placed under cover without further delay. If worms have entered the pots while outside they must be removed, or they will soon choke the drainage, and the plants afterwards will not long remain healthy. One good application of lime water in a clear state will be ample to remove the worms from the soil. When taken indoors these plants should occupy a light cool position where abundance of air can be admitted on all favourable occasions. Any attempt at forcing in a close confined atmosphere will end in failure, and the plants will grow weakly. Aphides often infest the shoots of these plants during the winter months, but these are easily destroyed by fumigating the house with tobacco smoke.

*Chrysanthemums*.—All the early-flowering varieties grown for decoration should now be under cover, for we might have a frost at any time that might prove too severe for them. They should be housed in vineries, Peach, and orchard houses where they can be kept cool night and day. Abundance of air must be given—in fact, the ventilators should not be closed only during frosty and stormy weather. Those grown for very late flowering should be arranged in a sheltered position outside to keep them back as long as possible. Some mats or tiffany should be arranged in readiness to draw over them in case of severe frosts. With care these plants may be kept outside for some weeks longer, which will wonderfully retard them. In a cool house the buds during mild weather swell very rapidly, but outside they remain almost stationary unless the weather be very mild. Pompons and other dwarf varieties propagated late may now be placed in cold frames, the lights only being put over them when the weather is unfavourable. These plants with us are in the most backward condition this season, and will be retarded for late flowering as long as possible. Chrysanthemums from this date must be liberally supplied with stimulants, for they need assistance more from this time than at any time during the season's growth. Mildew must be carefully watched for, and upon its first appearance syringe the plants well with 1 oz. of soft soap to a gallon of water and a good handful of flowers of sulphur intermixed. If this is allowed to remain upon the plants for two or three days the mildew will be destroyed, when the sulphur may be washed off with clear water.

*Zonal Pelargoniums*.—All plants that have been outside during the summer months for winter flowering should now be placed under cover where they can be protected from frost and heavy rains. The plants intended for late flowering will do in cold frames for some weeks longer.



provided the lights are thrown off during fine days, and the watering is done during the early part of the day. These plants would quickly come into flower if required and placed where a little heat can be given at night, with plenty of air during the day. Double varieties intended for cutting only should be housed by themselves, when a temperature of 55° to 60° at night can be maintained to keep them growing and flowering. All prominent flowers may be removed if not required, and the plants kept cool for some weeks longer. It is unwise to unduly start these plants directly they are housed, for if brought forward gradually at first they will flower more profusely afterwards. Supply water carefully, and feed liberally all plants that have their pots full of roots. Young stock in 3-inch pots intended for flowering early in spring should be placed on shelves close to the glass, where a steady sturdy growth can be ensured. If the points of the young plants have not been removed this should be done to induce them to branch. If room is plentiful and the small pots are full of roots they may be placed at once into others 2 inches larger, and thus become established before winter. If potting is done at this season of the year the soil should be pressed into the pots as firmly as possible, and water applied carefully afterwards.

#### THE FLOWER GARDEN AND PLEASURE GROUNDS.

**Replanting the Flower Beds.**—In many low-lying positions early frosts have completely destroyed the summer occupants of the beds, and whether the beds are to be replanted with spring-flowering plants or not they should be at once cleared of the now unsightly tender plants. Where a certain number of hardy edging or carpeting plants have been employed, this will much simplify the refilling of the beds, as they will be also available for winter and spring decoration. This is especially the case with carpet beds, as, supposing the groundwork of the design is formed with such hardy green-foliaged plants as *Herniaria glabra*, *Veronica repens*, *Sedum Lydium*, and the grey *Sedum glaucum*, the panels can be quickly and effectively refilled with Golden Pyrethrum, *Ajuga reptans rubra*, dwarf *Silenes*, Daisies, including the lovely golden variegated sort, *Aubrietias*, *Arabis*, and other dwarf flowering and fine-foliaged plants. We, however, prefer to rely exclusively on fine-foliaged plants for the carpet beds, and employ the *Ajuga*, Golden Daisies, Golden Pyrethrum (sown in July for this purpose) *Sempervivum californicum*, *Cerastiums*, late-raised *Cineraria maritima*, and small highly coloured Beetroot, the latter withstanding a fairly severe frost, and forming fresh growth early in the spring. For "dotting," or single prominent plants to relieve the excessive neatness in the carpet designs, we use neat little specimens of such highly ornamental Conifers as *Cupressus Lawsoniana albo-variegata*, *erecta viridis* and *lutea*, *Retinosporas ericoides*, *obtusata aurea nana*, *plumosa argentea*, *plumosa aurea*, and *squarrosa*, *Taxus baccata aurea* and *elegantissima*, and *Thuja aurea*. *Yucca recurva* is also available for a similar purpose, and much may be done with strong clumps of *Iris foetidissima variegata*. The latter divides readily, and can be effectively employed in any arrangement of hardy plants. In these carpet designs the panels should be closely filled, as but few of the plants employed will grow at all freely.

**Plain Winter Bedding.**—As many of the plants employed for this purpose are of a "hungry" disposition, they naturally greatly exhaust the soil; much more so, in fact, than do the summer occupants of the beds. Where it is possible, then, it is advisable to liberally dress the beds, prior to digging, with leaf soil or half-decayed manure—this in preference to manuring the beds for the summer plants. The work of preparing the beds and replanting should be pushed on rapidly during the prevalence of dry weather, as this admits of work being done cleanly and thoroughly, particular regard being paid to the necessity for firmly fixing all the plants employed. Should the present exceptionally dry weather continue it will be necessary to well water all the different plants to be moved a day previous to removal, as it is of great importance that all should be transplanted with a good ball of soil about the roots. We would also advise that a watering be given after planting in all cases where the soil of the beds is at all approaching dryness. Plant rather thickly and firmly, the latter both to insure sturdy and hardy growth, and also to prevent upheaval by frosts. Small beds may be most effectively filled with about two kinds of plants, say with an edging of Daisies, common Primroses, *Arabis*, *Aubrietias*, dwarf *Silenes*, Pansies, &c., and the centre entirely filled with either *Myosotis*, *Saponarias*, Wallflowers, *Collinsia bicolor*, *Alyssum saxatile*, and other taller-growing plants that may be used. The larger beds may have a broad outer band of any of the smaller kinds, and the inner line of some kind of plant of medium height, the centres being filled with a mass of the tallest growing kinds, with perhaps a central plant of about 2 feet high, either of *Yucca recurva*, golden or silver variegated Holly, *Iris foetidissima variegata*, or some kind of Conifer. It is hardly possible to have the beds too gay in the spring, and for this reason mixing and the formation of several lines or circles should be avoided. Masses of colour are what are wanted, and with plenty of plants there ought to be no difficulty in arranging a display superior in many people's estimation to anything that can be done with the summer bedding plants.

**Hardy Evergreens and Conifers for the Flower Beds.**—A considerable number of these are in many places effectively grouped in the larger flower beds. In addition to the above-named Conifers, the following plants are available and suited to this purpose. Flowering plants—*Andromeda floribunda*, *Rhododendrons* such as *daphnoides*, *myrtifolium*, *ovatum*, and *Wilsonii*; *Mahonia aquifolia*, *Kalmia latifolia*, *Ericas herbacea carnea*, *mediterranea alba* and *rubra*, and *vulgaris aurea*. Berried plants—*Skimmia japonica*, and *Pernettyas*; and fine-foliaged plants—*Buxus (Box) japonica aurea foemina* and *longifolia*, *Cryptomeria elegans*, *Hedera (Ivy) arhorea Ragneriana*, *aurea*, *elegantissima*, and *fructo-lutea*, *Juniperus Sabina variegata* and *tamariscifolia*, *Osmanthus aquifolius*,

*aureus*, and *myrtifolius*, Myrtle-leaved Portugal Laurel, *Veronica decussata* and *Traversii*, and *Vinca elegantissima*. These, again, are most effective when each sort is massed in panels, the dividing lines being composed of one distinct sort.

**Bulbs.**—These now generally play an important part in the spring garden display. As a rule, fresh bulbs have to be purchased every season, as little or no dependence can be placed on the old ones. Fortunately, there is always an almost unlimited supply of cheap and good bulbs, many of which produce surprisingly good flowers. Whether they should be planted in masses or mixed among the flowering and fine-foliaged plants should depend upon circumstances. In any case they are most effective when the colours are unmixed—that is to say, when the lines or groups are all one sort or colour. They will also well repay for liberal treatment in the shape of good leaf soil or decayed manure well mixed with the soil prior to planting, and where sand is plentiful a little of this may well be disposed about each bulb. Scillas, Crocuses, and Snowdrops are best for edging the beds of Tulips. Hyacinths and Narcissus and a double band will always be much more effective than a single line or circle, the bulbs being dibbled in about 4 inches below the level, and 2 or 3 inches asunder. If the Tulips are dotted among other plants they may be placed about 6 inches apart each way, and 4 inches apart if they are the sole occupants of the bed. Narcissus may be given about the same distances, and Hyacinths, under similar circumstances either 12 inches or 9 inches apart, all being covered by about 4 inches of soil. Winter Aconite, *Chionodoxa Lucilæ*, various Anemones, Feather, Grape, and Musk Hyacinths, *Fritillarias*, *Hyacinthus candicans*, *Leucojum æstivum*, *Ornithogalum arabicum*, *Triteleia uniflora*, *Zephyranthes candida*, and *Alstræmerias* may all be planted at the present time. The mixed borders are the best places for most or all of these, as here they will continue to spread and bloom annually, provided, however, they are not disturbed. The ground should be deeply dug for them, and they will also be greatly benefited by a liberal addition of manure to the soil, and with a little sand about the bulbs or roots. Plant not less than 4 inches deep and in patches *Ranunculuses*, *Tropæolums*, *Tigridias*, *Oxalis*, *Ixias*, *Sparaxis*, *Babianas*, *Tritonias*, *Lachenalias*, and *Achimenes* are not unfrequently included in miscellaneous collections of bulbs, but all, with the exception of *Ranunculuses*, which may be planted in February, are only fit for pot culture.

## THE BEE-KEEPER.

### A RETROSPECT.

It is now some two years ago that, taking up an old number of the *Journal of Horticulture*, an article on bee-keeping arrested my attention. The next few days found me seeking for more articles from the same source, and by the middle of the following month I was inquiring all through the neighbourhood for "bees on sale." Now, in taking up this art my intention was not only to gain as much pleasure as possible from watching the busy movements of the insects and the internal economy of the hive, but also to keep a strict account, and if possible at the end of the year to be able to show a balance on the right side sufficient to induce others and poorer to try to eke out their narrow means of livelihood by adding a few hives and bees to their strip of garden ground, and managing them when they had procured them upon modern and humane principles—not robbing the bees of both their honey and their very lives, but taking the honey only and preserving the lives of the busy insects till the sunshine of another spring should cause them once more to wake up to gather the food and pollen wherewith to nourish the young, upon which the hopes of the bee-master so entirely depend.

After some time spent in inquiry a catalogue of a sale at a Cheshire farmhouse informed all embryo bee-keepers that several fine stocks of bees were to be sold. The day came, and with a friend I went to buy, hoping to get a bargain. How wet it was that morning, and how the wind did blow! but at last, after a tedious walk and a miserable railway journey of twenty miles, the farm came in sight. In short, two hives became mine at 12s. 6d. and 10s. respectively; then for four miles with a hive on either side I trudged to the dreary station. One hive, it must be said, had a glass super on it, and in it was a little comb. The continuous movement soon caused an uproar in the hive; all the bees began to rise into the glass, where they seemed more comfortable, until a passer-by touched the hive, thereby moving the glass sufficiently to allow many of the insects to emerge, and this when the train was almost due. A little smoke from a pipe got most of them in again, and soon we were off; then another walk of a mile and a half, and home was reached, after a bitter cold miserable November day. I was a bee-keeper. Next day the question arose where to put them, but this was easily solved—one hive, alas! proved to have no inmates save two mice, who evidently appreciated their honeyed quarters, and were loth to leave them. A few days later a small farmer having a hive to sell I bought it at £1, but amid the protestations of his wife, who declared they would "never do me any good," that the hive she retained would die in the winter



because she had sold her bees for coin. Well, she bought clothing to the value of the money, and so eased her superstitious mind.

Below are given the two balance sheets of last year, and this ever-to-be-remembered red letter year for bee-masters in most districts; but in Cheshire the spring was bitterly cold, and the winds cut off many a bee from the shelter of the hive by its pitiless blasts, at one time very seriously reducing the population of many hitherto strong stocks. May came with bright sun and little rain, but still the wind came with relentless energy from the coldest quarter. During the first weeks glass supers were placed on my three stocks (one a swarm last year), and were filled by the end of the month, notwithstanding the often untoward state of the weather and the often honeyless bloom. With June came a great change, and now was a great hum of content heard in all the hives, and the moisture ran out of the doors and trickled in a continuous stream down the boards, giving warning of swarms soon to issue from the crowded stocks. Super piled on super, however, averted the swarm, and secured me a magnificent harvest of honey both in glasses and sections; 150 lbs. from three stocks is the result of this year, and one small artificial swarm. Every pound of honey sold fetched 1s. 3d. per lb. from grocers in a neighbouring large town, and so, besides what was given away, a handsome sum was reached, sufficient to pay the rent of many a home in country districts, and so add comfort to those who need it most—the poor.

My stocks were in such small hives that thinking them too small, this year I have driven the bees, and with others purchased from different sources I have formed strong stocks in larger and better made hives, wherewith another year, if no mishap befall, to gather the honey from the sweet flowers and to fertilise the bloom, and so enhance the harvest of fruit while taking from the blossom their honey, instead of letting it waste.

1882-3.					
			£	s.	d.
Stock	...	...	1	0	0
"	...	...	0	12	6
"	...	...	0	10	0
Bar hive	...	...	0	12	6
"	...	...	0	6	0
Skeps	...	...	0	3	0
Sugar	...	...	0	7	0
Boxes	...	...	0	6	0
Boards	...	...	0	3	0
			£4	0	0

N.B.—This year the season was bad, and I had not got my stocks into good condition, owing to purchasing them so late in the year.

1883-4.					
Current Expense.			£	s.	d.
Sugar	...	...	0	7	6
Bottles	...	...	0	4	0
Supers	...	...	0	6	0
Sections	...	...	0	4	0
Sundries	...	...	0	5	0
			£1	6	6

1884-5.					
			£	s.	d.
Section crates	...	...	0	12	0
Hive	...	...	0	5	0
"	...	...	0	4	6
Bees	...	...	1	12	6
Feeders	...	...	0	6	0
Box	...	...	0	4	0
Fumigator	...	...	0	4	0
Sugar	...	...	1	10	0
			£4	18	0

Here, then, is the result of a very short experience; but it may, indeed, be one of some little use to those who, like the writer, were novices in this, the most interesting of all country pursuits. The most casual observer will see by a brief glance at the foregoing sheet that the capital account now stands at £8 18s., and that the nett profits of the two years amount to £9 2s. 6d., so that a very handsome sum has been culled from the various flowers that during the spring and summer months have opened and died away without having given any more practical good to man (save their beauty and their fragrance) than what the bees have saved to him. From other blossoms, too—those of Apple and Pear, Plum, &c.—the honey and the pollen have both been freely gathered; and here man has reaped a double good, for the honey is secured for his future use or profit, and the crop of fruit of every kind has no doubt been vastly increased by the honey bee flitting from flower to flower. Let bee-keepers always at an early season look to the hives that are another year to store honey, and see that they are strong in bees and stores. Then may they await with confidence the winter and the spring, and reasonably expect a good return from their pleasing labour.—T. MARRIOTT, Sandbach.

## QUEENLESS HIVES.

"G. F., Glenbrydan," wishes to know the cause of his bees leaving their hive between September 2nd and the 1st of this month. It is quite evident that the hive has been queenless for some time, and very probably has been infested with robbers. The killing of the drones may have been done by either the robbing bees or by the others, as the absence or presence of drones at this time of year is not a sufficient proof of the presence or want of a queen, even though no brood or eggs are to be found in the hive. We have to seek for other signs of the want of a queen in a hive—by the bees' general inactivity, never going in search of water, and carrying but small pellets of pollen, and their continual crowding about the doorway, always acting on the defence, but slightly less fierce than a hive with its queen. Bees in the immediate neighbourhood are always on the alert to find queenless hives; when this is observed the bee-keeper should at once satisfy himself as to the fact.

In regard to hives being queenless that have no eggs but lots of drones now. Had I taken the advice given by a contemporary as to this, I would have had only three hives in my possession, because nearly all my hives now (15th October) have numbers of drones, yet I am sure that I am not in possession of a single queenless hive. On the other hand, some queenless bees near me killed every drone months ago. Then bees will sometimes, to appearance, use rather roughly drones when they are perhaps thought by the bees to be rather sluggish at the time when a young queen is on wing. This is sometimes taken by inexperienced bee-keepers that it is the general onslaught. In conclusion, I may say that two years ago I had plenty of drones in several hives with breeding queens at the end of December.—A LANARKSHIRE BEE-KEEPER.

## TRADE CATALOGUES RECEIVED.

R. Pannett, Chailey, Sussex.—*Catalogue of Pelargoniums and New Fuchsias.*

Thomas Rivers & Son, Sawbridgeworth. 1884.—*Catalogues of Fruit Trees and Roses.*

J. Cheal & Son, Crawley, Sussex.—*Catalogue of Fruit Trees, Trees and Shrubs.*

L. Delaville, 2, Quai de la Mégisserie, Paris.—*Catalogue of Bulbs.*

Edmund Philip Dixon, Hull and Burton Constable.—*Catalogue of Trees and Shrubs.*

John Kennard, Swan Place, Old Kent Road, London, S.E.—*List of Horticultural Sundries.*

D. Cannon & E. Brace, Salbris, Loir et Cher, France.—*Price List of Forest Trees.*



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Treatment of Primulas and Bog Plants (*Palustris*).**—The Primulas you name can be wintered in a greenhouse or frame, but *P. rosea* is frequently left out in the rockery all the season without any protection. The soil should never be allowed to become dry, but care must be exercised to avoid rendering it excessively wet. The bog plants may be allowed to become partly dry during the winter, as they do not need to be submerged.

**Osiers (*J. E. H.*).**—We do not know to which species the names you quote refer. The purple Osier, *Salix purpurea*, is grown for fine basket work, as also is Forby's Osier (*S. Forbyana*); the Red Osier (*S. rubra*) growing much stronger, and is used for baskets of a larger and coarser description. Cuttings of this year's wood a foot long or more inserted half their length at the present time onwards through November will root freely. As there are withy beds in Sussex we advise you to inspect them, and you might gather useful information from their owners, and probably obtain the cuttings you need.

**Passiflora Jam (*Jam*).**—The fruit of *Passiflora edulis*, which is purple, is eaten as a dessert fruit, and may be also made into jam in the same manner as Plums are preserved. The fruit of the hardy *Passiflora coerulea*, which is yellow when ripe, is not eaten. The fruit of *Passiflora quadrangularis*—the Granadilla—is very large, greenish yellow, and is usually eaten with wine and sugar.

**Seedling Roses (*A. Bye*).**—We think your Rose well worth growing with the object of fully testing its merits. As autumn blooms the flowers are good; their fault is a lack of smoothness at the edges of the petals, but this



may disappear with well-developed summer blooms. In colour the variety appears distinct, rosy crimson with a faint purple tint.

**A Smoke Difficulty (Fred).**—We shall be very glad if any of our readers can inform you "if any particular kind of top can be placed on the chimney that will prevent the soot particles falling into the stove." Sooty particles can in a great measure be prevented entering greenhouses by stretching fine hexagon netting across the openings for ventilation, as these exclude much of the soot while admitting air to the houses. This plan is found of great service by florists in the vicinity of large smoky towns.

**Lapageria alba Unhealthy (J. H.).**—Taking up the unhealthy plant, potting, and placing in gentle heat, was quite right. We presume the decayed parts of the roots were cut away, and the whole of the soil washed off the roots by tepid water, fresh compost being employed, and rather rough, with a free admixture of sand and charcoal, good drainage afforded, and the soil well worked in amongst the roots. To facilitate root-action a bottom heat of 80° or 90° at the base of the pot would be an advantage. Before again planting out see that the soil is sweet and good drainage provided.

**Young Vines in Wide Border (Town Gardener).**—As the Vines have been planted three years, and we presume are growing well, we do not think it would be judicious to take out the part of the border not now occupied with roots, as, if it be properly drained, there is no fear of its becoming sour. Removing it would entail much labour, and perhaps no corresponding advantage would follow. It is well to make a border by degrees, a width of 4 to 6 feet being ample in the first instance, adding to it as the roots showing at the sides give indications of needing more space. We cannot express an opinion on the practice of your predecessor, and you will be consulting your own interests to refer to his practice as little as possible.

**Seedling Damsons (A. D.).**—Trees from stones will bear in due time without being grafted, but are usually less free than those raised from suckers, budding, or grafting, although they bear freely enough after the trees attain age. They make the free-growing and healthy trees.

**Sowing Perennial Poppies (Idem).**—We hardly know which of the Poppies to which you allude, whether the Welsh (*Meconopsis cambrica*) or the Horned Poppy (*Glaucium luteum*), which last is difficult to grow away from its native habitat. The seed is first sown in April, only just covering it with light soil, and keeping it moist. The plants may be pricked off when large enough, and should be shaded from bright sun until established. In autumn they may be moved to where they are to flower, or it may be done in spring, in each case it is necessary to move with a good ball. The seed may also be sown where the plants are to remain, keeping the soil moist, and thinning out the seedlings in good time.

**Gooseberries as Espaliers (J. F.).**—They do very well grown in the form in question; but instead of training them fan-shaped we prefer the method that is employed when they are trained to walls—namely, training two branches horizontally, and from these securing growths at intervals of 8 inches for training upright. We have seen hedges of Gooseberries, the growths having simply been secured in an irregular manner to stakes, so that all the space was occupied, and the rows were very productive.

**Twin-flowered Cypripedium insigne (J. J.).**—This peculiarity is of occasional occurrence, but not very frequent, and possesses nothing to specially recommend it more than ordinary good varieties of the species. In the opinion of some growers it is a distinct sport, but it seems to be chiefly influenced by some peculiarity in the soil or treatment, as plants which have hitherto produced the flowers singly will sometimes commence bearing the twin flowers, and continue doing so. The exact cause cannot be ascertained, as, like many other phenomena of a similar character, it depends upon conditions the operation of which it is very difficult to investigate. We have this week received a twin-flowered sample of *Cypripedium Lawrencianum* from Dr. Paterson, Bridge of Allan, which indicates by its great strength and length of flowerstalk very liberal culture, pointing to the probable cause of the same character in *C. insigne*.

**Top-dressing Vine Border (A Constant Subscriber).**—The present is a capital time to top-dress an outside Vine border. The most suitable compost is turfy loam of a light rather than heavy nature, to which add a tenth of old mortar rubbish, a twentieth of charred refuse or charcoal, and a fortieth part of bone dust, the whole well incorporated. Blood is a good manure, and may be mixed with the loam, one part blood to twenty of loam, it being chiefly valuable for the salts it contains. Remove the surface soil down to the roots and clear it away, then pick out any soil from amongst them that can be done without injury to them, and add the fresh compost, not covering the uppermost roots deeper than 4 inches. Mulch over the surface with short manure after making the fresh material firm, and put on the shutters for the present, but it would be advisable to close the ends on severe weather setting in. The shutters should have a sharp incline from the house to the front, so as to throw off the wet.

**Top-dressing Lawn (A. D.).**—The decayed manure and leaf soil would be a capital dressing for the lawn, and assist in a good turf being formed, making it thick and elastic; indeed newly formed lawns are often too much neglected, being left to take care of themselves, and as a consequence they are worse if anything the year following than in that of sowing down. If the lawn is somewhat open at the bottom and not very even in surface it would be well to mix the whole of the material at command, or so much as will be required together, which will be better suited for filling up any inequalities of the surface and not being so stimulating as the manure and leaf mould alone conduce to a less vigorous growth of plant, and so contribute to the development of the smaller grasses. It would be well to pass it through a half-inch sieve, which would save much after trouble in raking off the rough and picking up the stones; any that pass the meshes of the half-inch sieve would be readily disposed of by rolling. Twenty cartloads per acre would not be too much if you mix the whole together, or twelve of the manure and leaf mould, spreading it evenly over the surface, and now if you do not object to the appearance, or so soon after the middle of February as the weather is mild.

**Amateur and Cottager Exhibitions (J. C. R.).**—It is quite true as you say that in the catalogues of some flower shows there are two classes of

exhibitors—viz., amateurs and cottagers, and you would like to know where they draw the line between the two classes—viz., what qualification is necessary to show in the amateur class, and what qualification is necessary to show in the cottager class. In most schedules there is an explanatory clause on this subject, and there ought to be in all of them. It is usually to the effect that exhibitors in the cottagers' classes must be *bonâ fide* wage-earning artisans or labourers who are not employed in gentlemen's gardens. Amateurs, as distinguished from cottagers, are usually considered as persons who manage their own gardens with or without occasional assistance, but not employing a regular gardener. In very large exhibitions, where all the classes are divided between nurserymen and amateurs, all exhibitors are regarded as amateurs who are not nurserymen. In all cases of doubt it is well to write to the secretaries of shows and ascertain the meaning of the terms employed in their schedules, as there is considerable local variation in the matter, the definitions being often founded on custom and local circumstances.

**Names of Fruit (R. D. L.).**—1, Forge; 2, Franklin's Golden Pippin; 3, St. Germain; 4, Doyenné du Comice; 5, not known; 6, Winter Pearmain (Duck's-bill). (H., Notts).—The larger green-and-red Apple is Yorkshire Greening, the smaller one we do not know; the Pear is Thompson's. (B. J. B.).—1, Gravenstein; 2, Cox's Orange Pippin; 3, Ne Plus Meuris; 4, Yorkshire Greening; 5, Dumelow's Seedling; 6, Adams' Pearmain. (James Davis).—1, Not known; 2, Duchess's Favourite; 3, Scarlet Russet; 4, Herefordshire Costard; 5, Mère de Ménage; 6, Round Winter Nonesuch. (W. W. Brown & Co.).—1, Not known; 2, Winter Colman; 3, Scarlet Pearmain; 4, Trumpington; 5, Barchard's Seedling; 6, Margil. (G. Picker).—1, Margil; 2, Dutch Mignonne. The seedling is no improvement on existing varieties. The Pear is Van Mons Leon Leclerc. (R. Morse).—It is a beautiful Apple, but we do not know the Apple. (W. Hawley).—We should like to know something of the history of your Apple; it is remarkably handsome. We do not remember to have seen it before. (Lady King).—We have examined your Apple with great care and compared it with many others. It is very similar to if not identical with a variety that has been certificated this year by the Royal Horticultural Society under the name of Jacobs' Strawberry—a very fine early summer Apple, the origin of which we should be glad to trace.

**Names of Plants (E. S.).**—*Tradescantia virginica*. (C. T.).—*Æschynanthus fulgens*. (E. F.).—The plant is *Tropæolum tuberosum*, a native of Peru, introduced to this country in 1836. It requires protection during the winter, and grows very well in a cool house, such as a conservatory or greenhouse. (Subscriber).—1, *Pinus ponderosa*; 2, *Pinus Pinaster*; 3, *Quercus macrophylla*; 4, *Acer campestre*; 5, *Alnus glutinosa laciniata*; 6, *Abies Douglassii*. (W. S.).—*Begonia Evansiana*. (J. J., Lancashire).—1 is a species of *Eria*, and 2 a species of *Cælogyne*, but neither is of any horticultural value; 3 is *Oncidium prætextum*; and 4 is a variety of *O. Forbesii*.

#### COVENT GARDEN MARKET.—OCTOBER 22ND.

MARKET very quiet. All classes of goods in heavy supply, Pears alone being short. American and Canadian arrivals heavy, but samples indifferent and fetching low prices.

##### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. ..	½ sieve	2 6 to 3 6	Oranges .. ..	100	8 0 to 12 0
Chestnuts .. ..	bushel	0 0 0 0	Peaches .. ..	per doz.	3 0 8 0
Cobs, Kent .. ..	per 100 lbs.	55 0 60 0	Pears, kitchen ..	dozen	0 0 0 0
Currants, Red ..	½ sieve	0 0 0 0	„ dessert .. ..	dozen	1 0 3 0
„ Black .. ..	½ sieve	0 0 0 0	Pine Apples English ..	lb.	4 0 6 0
Figs .. ..	dozen	0 6 1 0	Plums .. ..	½ sieve	0 0 0 0
Grapes .. ..	lb.	0 6 4 0	Strawberries .. ..	lb.	0 0 0 0
Lemons .. ..	case	15 0 21 0	St. Michael Pines ..	each	7 0

##### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes .. ..	dozen	2 0 to 4 0	Lettuce .. ..	dozen	1 0 to 1 6
Beans, Kidney ..	lb.	0 3 0 0	Mushrooms .. ..	punnet	0 0 1 6
Beet, Red .. ..	dozen	1 0 2 0	Mustard and Cress ..	punnet	0 2 0 0
Broccoli .. ..	bundle	0 9 1 0	Onions .. ..	bunch	0 3 0 4
Brussels Sprouts ..	½ sieve	0 0 0 0	Parsley .. ..	dozen bunches	2 0 3 0
Cabbage .. ..	dozen	0 0 1 0	Parsnips .. ..	dozen	1 0 2 0
Capsicums .. ..	100	1 6 2 0	Potatoes .. ..	cwt.	4 0 5 0
Carrots .. ..	bunch	0 3 0 4	„ Kidney .. ..	cwt.	4 0 5 0
Cauliflowers .. ..	dozen	2 0 3 0	Rhubarb .. ..	bundle	0 4 0 0
Celery .. ..	bundle	1 6 2 0	Salsafy .. ..	bundle	1 0 0 6
Coleworts .. ..	dcz. bunches	2 0 4 0	Scorzoneria .. ..	bundle	1 6 0 0
Cucumbers .. ..	each	0 2 0 4	Shallots .. ..	lb.	0 3 0 0
Endive .. ..	dozen	1 0 2 0	Spinach .. ..	bushel	2 0 4 0
Herbs .. ..	bunch	0 2 0 0	Tomatoes .. ..	lb.	0 6 0 0
Leeks .. ..	bunch	0 3 0 4	Turnips .. ..	bunch	0 4 0 6



#### WINTER OATS.

"DESPITE the fact of Wheat being now much less in market value than Barley, almost as much land will probably be cropped to the former as usual, no class being more slow to move out of the groove of custom than farmers. The trammels of habit cause them to adhere to the old ways long after they have become unprofitable; consequently, although they ought to be well aware that Wheat is the most costly of the grain crops to cultivate, and that the winter varieties of Beans, Oats, and Barley would prove admirable substitutes



for the other cereal, and leave the ground much cleaner and at a considerably earlier period, only one here and there will take a common-sense view of things by endeavouring to grow something else instead of Wheat."

Proof of the truth of the foregoing observations awaits one at every turn. Wheat-sowing, so far as we have seen, is being done as extensively and quite as expensively as heretofore, and yet the outcry about the low price of Wheat and the certain loss which its culture has entailed upon the growers this year grows in intensity; yet custom and habit have such a hold upon the ordinary farmer that the manure carts have been busy as usual, and Wheat-sowing goes on day by day just as if that or nothing must be done. A fortnight ago we drew attention to the importance and value of other winter corn crops, and the matter is so important that we return to it now in view of inducing our readers to give that attention to the matter which it deserves.

Of all winter corn crops winter grey Oats is one of the most sure and profitable. We have recently sown as much land as we could spare with them, and have applied the autumn dressing of artificial manure recommended by Professor Jamieson, which is termed a half dressing to be repeated in spring. No hesitation was felt in applying the artificial manure now, because we knew that it would be taken up by the Oats as the roots spread in the soil, rendering the growth sturdy and vigorous. In spring the plant may be fed off with the effect of a second growth shorter in the straw than it would otherwise have been, but with a more abundant yield of corn, somewhat later in ripening. Unchecked by feeding, and with favourable weather, it is ready to cut by the end of June, or at the latest by the middle of July, and is followed by a root crop. On thin land it answers where spring Oats frequently fail or are half smothered by Charlock. It also answers well on gravelly soils, and for heavy soil very retentive of water it is a particularly safe crop if sown early before the weather becomes broken in autumn, all the risks of a wet spring being then avoided. Eighty bushels per acre may be considered a good crop of winter Oats. That it is a paying crop there can be no doubt. Old winter Oats are much in demand in hunting and training stables, and good samples command specially high prices. A fair comparison of the risks and advantages resulting from the culture of spring and winter Oats may be useful. Spring Oats simply afford a supply of grain and straw for winter use. In a wet spring the sowing is sometimes retarded so much that the crop is light and unsatisfactory, and in a wet harvest there is much difficulty in sowing the crop. Winter Oats, on the contrary, may be sown after Wheat soon after harvest, or after an autumn fallow—certainly always upon a clean seed bed. The crop affords us the highly important option of grazing or folding if necessary in early spring, and for that alone is one of our most valuable green crops. It ripens quite a fortnight before the general harvest time, just when the haymaking is usually over, and there is leisure to secure the crop in the best condition.

As farmers are driven by the pressure of hard times to give closer attention to paying or non-paying crops, the culture of winter Oats will certainly grow in favour along with that of Barley and winter Beans. To an intelligent thoughtful man this must be patent enough even in theory, and the best of all tests—practical experience—will prove it to be one of the things that must receive attention. Home farmers are accused, and not without reason, of farming extravagantly, but it must not be forgotten that many a home farm has hitherto—nay, still is the owner's hobby. Model farm buildings, pedigree cattle, the latest novelties in implements and machinery, the best team of horses in the neighbourhood—all tend to a balance on the wrong side. In point of fact no balance sheet has been thought about in many instances. As, however, farm after farm becomes vacant, and has to be added to the home farm for a time, if not permanently, hobbies have to be set aside, and well will it be for the home farmer if he can turn, as he must do, from easy-going abundance to the rigid profit-and-loss test of sound practical farming. A crop that pays then becomes of the first moment, and among such winter corn must still hold a prominent position. But all wasteful cultural practices must cease. The best way in the fullest broadest sense of the term of the preparation of the seed bed, the application of manure, the sowing, culture, and uses of the crops must be ascertained and followed as closely as possible. Hard work hurts nobody. The master's eye to guide and hand to lead makes the work to go on briskly and well as nothing else can do. We recently saw a man holding upwards of 200 acres of land driving a pig home himself which he had purchased at an auction sale. That man evidently did not mean to be beaten by hard times. Few men will be beaten if they will think hard, work hard, and be content to fare hard "till the clouds roll by."

#### WORK ON THE HOME FARM.

*Live Stock.*—Frosty nights, cold windy days with rain, sleet, and a snow shower or two give ample warning that the time has come again for housing cattle snugly at night. For some weeks the yards have been littered and the gates set open for the cattle to enter at will, and we prefer to make the change from open pastures and green food to close yards and

much dry food as gradual as possible. Calves now require special care. Snug lodges facing south or south-west with a small yard in front of each are the best places for them. The lodges should have a wide door with a strong hook to fasten it back to the side of the lodge when open to avoid risk of injury to the calves when it is open; for if a stranger enters a yard the timid cattle rush about and run great risk of being hurt against any post, door, or crib left out for them to run against. The doors are left open till the weather becomes stormy and cold, when the calves are always shut in the lodges at night. Calves of six months and upwards are put into these yards in batches of six: they are let run out upon the pasture upon all fine days, and are given about a pound each of crushed oats and Waterloo round cake with a little bran, which tends materially to keep them in condition and prevent scour and gripes. They should now be kept altogether off low damp pastures, or there will be much risk of the loose worm being taken up, which may lead to much suffering and loss. Warm well-drained yards carefully kept comfortable with plenty of fresh dry litter go far to keeping the animals healthy. The best hay should be saved for these. This winter there will be no trouble about hay, as it is all good, highly flavoured, and of the bright green colour which always denotes cheap well-made hay. Too much care cannot be taken about calves' food, and they will repay all care now and onwards throughout winter.

*Horse and Hand Labour.*—With the change to colder weather the roots have stopped growing, and the Mangolds are fast being pulled and the tops twisted off in readiness for clamping. The clamps are made on the side of the field, have a hard road outside parallel with the hedge, so that carts may draw up and be loaded over the hedge without entering the field. As the roots are pulled they are put in small heaps with enough leaves thrown over to keep off frost and left to dry for a few days; they are then carted to the clamp, care being taken not to bruise them. A few single stacks of 2-inch drain pipes from the bottom to the top of the middle of the clamp serve to prevent harm to the roots from any heating. Such pipe stacks are easily made by thrusting a small straight pole into the ground and dropping the pipes down upon it one above another. Make the clamp in the form of a ridge to be extended indefinitely, and cover with enough earth to keep out frost.

#### WHEAT FOR ANIMALS.

As Wheat is so cheap I propose to use it for my pigs and cows. Will you please inform me if it would be safe to give it without gradually accustoming the animals to it, as a full equivalent for meal and bran for pigs, and instead of cake and bran for cows, and the equivalent required in each case? Also please state whether it should be given whole or crushed.—I. E.

[Crushed and well-steeped Wheat proves a valuable food for pigs, forcing and bringing them to early maturity. It has an equally satisfactory effect upon sheep if boiled and mixed with short sweet chaff. For cows and horses use sprouted Wheat mixed with chaff alone, or with an addition of maize, bean meal, and pulped roots. To induce the Wheat to sprout quickly water it well with a watering pot, and when well soaked throw it into heaps 2 or 3 feet thick, and cover with bags to induce heating and to keep in the heat. It will be ready for use in a few days. Careful experiments have shown that the ratio of nitrogenous and non-nitrogenous constituents in food for animals should be nearly 1 to 5. Hence the value of Wheat for this purpose, for in it we have very nearly this proportion between the nutrient albuminoids and the non-nitrogenous carbo-hydrates and fats. Do not give cows a full quantity of Wheat at first, but begin with a small quantity, increasing it weekly. When so changing cattle food it is more than ever important that they should have free access to rock salt. Horses fed upon Wheat require a little common nitre, or sprits of sweet nitre, in their water twice a week. It is worth while remembering that a ton of Wheat at its present price is about equivalent in value to a ton of cake, and as the residual manure from the cake is of much greater value than that from the Wheat, would it not be well to sell some Wheat and purchase cake with the money?]

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.


DATE.	9 A.M.					IN THE DAY.				Rain
	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
1884. October.	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Sunday ..... 12	29.778	46.8	43.4	N.	48.8	52.5	38.8	88.7	33.8	0.055
Monday ..... 13	30.079	42.4	38.8	W.	48.2	51.1	35.8	88.2	30.9	0.052
Tuesday ..... 14	30.192	46.7	46.1	N.E.	47.7	57.1	37.1	84.8	32.1	—
Wednesday .... 15	30.303	47.9	46.1	N.W.	48.7	57.5	43.8	79.6	39.3	—
Thursday ..... 16	30.334	57.8	54.6	S.	50.2	63.9	52.3	95.6	46.4	—
Friday ..... 17	30.363	55.7	53.9	N.E.	51.8	59.8	51.9	72.7	47.3	—
Saturday .... 18	30.395	56.4	53.2	N.W.	52.3	61.3	50.4	87.1	43.1	—
	30.192	50.5	48.0		49.7	57.6	44.3	85.3	39.0	0.107

#### REMARKS.

12th.—Fine morning; showery in afternoon, then fine.  
13th.—Bright day and fine bright night.  
14th.—Wet early; fair day with a little sun.  
15th.—Fine and pleasant.  
16th.—Fine, warm, and generally bright.  
17th.—Fair, but rather dull.  
18th.—Fair throughout with some sun.

A fine week with high barometer and average temperature.—G. J. SIMONS.





## COMING EVENTS

30	TH	Fruit and Vegetable Show at South Kensington.
31	F	
1	S	
2	SUN	2 ST SUNDAY AFTER TRINITY.
3	M	
4	TU	Royal Horticultural Society's Fruit and Floral Committee Meetings.
5	W	Ealing Chrysanthemum Show.

### THE GRAPE SEASON.

**I**T may safely be premised that the season now fast drawing to a close has been an eventful and most interesting one to all concerned in Grape culture. I do not remember having seen or read of so many fine examples of different varieties being shown, not merely at the leading horticultural exhibitions but also at many local meetings, and on all sides there were or are now to be seen really fine crops of good Grapes. I have certainly seen during previous seasons a few better examples of one or two varieties than this season; but on the whole a general improvement is to be observed, this being by no means due to the favourable season experienced. On the contrary, I would attribute it to the fact that all are becoming more enlightened and enthusiastic in the matter, and more disposed to depart from old hard-and-fast lines. The recent works on Grape culture, and what has at various times appeared in the gardening periodicals, have had much to do with the improvement effected, and not a few have gained valuable information from various successful growers they may have been fortunate in meeting or visiting. We are not so selfish as we used to be, and few gardeners make a secret of their practices or go to the trouble of locking themselves in the potting shed while they are mixing a mysterious and presumably valuable compost. This is a digression, however, as it is about the merits of the varieties of Grapes I have had some experience with that I am setting myself to write, and if what is advanced provokes a controversy so much the better, provided it is conducted solely with the view of deciding which are the best varieties.

The question is often asked "Will the Black Hamburgh ever be generally superseded by any new variety?" and I have never yet heard anyone assert that it would be. At present it is the most serviceable Grape we have, and it may be safely asserted that half the Vines in the country are of this good old sort. When well grown no other variety is more admired by gardeners generally, or is much more pleasing to the palate, and no other Grape will so long continue to be fairly satisfactory under bad treatment. For amateurs, for pot culture, forcing, and cool greenhouse treatment it is still invaluable; but I do not think so many Vines of it are now grown for the late supplies, as there are several excellent sorts—some well known and others fast coming to the front—which, if slightly inferior in quality at times, are easily grown and much better keepers. Several of the latter are successfully grown in a few cases with little or no fire heat, but they are under the charge of practical men, and it is very doubtful if novices would succeed with them. It is very evident there are inferior forms of Black Hamburgh in cultivation, these not unfrequently serving to puzzle and disappoint good cultivators. I do not, however, go so far as to say there is a distinct variety of red Hamburgh, although I have seen this season more than one heavy crop the colour of which was nearer red than black, the quality and the size of the berries fortunately being first-

class. This want of finish may be accounted for, but unless there are forms of the variety it would be a difficult matter to account for the dissimilarity of the crops on Vines growing together in one border. Some produce compact bunches and fine berries, and others large and loose bunches and much smaller berries. The fine Black Hamburgh Vines in the large vinery at Longleat, and from which were cut the first-prize bunches that were recently shown at South Kensington, are not of the best variety, as in spite of the liberal and intelligent treatment they have long received they never produce such fine berries as might reasonably be expected.

No doubt there are numerous Vines of Mill Hill Hamburgh grown as Black Hamburgh, and this may have much to do with numerous failures, as it is by no means so easily grown as the true Black Hamburgh. For a time it will do well with ordinary Black Hamburgh treatment, and produce compact bunches, very fine berries, and colour fairly well; but later on it is less free in fruiting, especially if closely spurred at pruning time, and the berries, though still large, are nearer red than black in colour. According to my experience it is the most difficult to keep rooting near the surface, and requires to be lifted every two or three years. It is best grown on the long-rod system, though it will continue to bear fairly well on the spur system, provided three or four buds are left to each spur. Owing to its thin skin it does not keep well, and on the whole it is an unsatisfactory variety, and those who have it under a mistake will act wisely in planting in its stead a Vine of the genuine Black Hamburgh.

Muscat Hamburgh is perhaps the richest flavoured Black Grape we have, and is also the most disappointing variety I am acquainted with. The name and description has, to my knowledge, beguiled more than one novice into buying it, thinking it possessed some of the well-known characteristics of the Black Hamburgh, whereas it resembles it in colour only. Dr. Hogg, in his "Fruit Manual," describes it under the name of Black Muscat of Alexandria, and under this name it should be catalogued by the vendors. It grows freely and is very fruitful, but unfortunately very few growers ever succeed in effecting anything approaching a perfect set, One-third or perhaps one-half of the berries may swell to the full size or thereabouts, according to the number of stones, but the remainder become no larger than peas, and this completely spoils the appearance of the bunch. The most perfectly set bunches of this variety that I have seen for a long time were at Heytesbury under the charge of Mr. Horsefield, and perhaps on reading these remarks he may be induced to give us a few hints as to the treatment given. Venn's Seedling is now generally considered synonymous with Muscat Hamburgh, though the raiser, an experienced and practical man, still considers them distinct.

Madresfield Court, where the berries do not crack badly, has become a great favourite—in fact, this tendency to crack is its only drawback. It possesses a good constitution, forces well, keeps fairly well, will ripen without fire heat equally as well as the Black Hamburgh, forms fine tapering bunches, sets freely, colours well, and is of most pleasing quality. Altogether it may be said to be one of the most attractive of black Grapes, and everyone possessing a vinery should give it a trial. From what I can learn, the tendency to crack is almost entirely due to the character of the soil in which it is growing. In some places cracking of the berries rarely occurs, while in others the greatest difficulty is experienced in preventing it. At Gunnersbury Park, where some of the most perfect examples of this variety I have yet seen were grown, Mr. Roberts prevents cracking by keeping the inside borders in which the Vines are rooting much drier at the final ripening period than would suit any other black Grape; while at Elvaston Castle, where remarkably even and well-finished bunches are annually grown, the laterals beyond the bunches are encouraged to extend, with apparently the best of results. We have a Vine of this variety



rooting solely in an outside border, the soil of which is of a very heavy nature, and a great difficulty was experienced in preventing cracking till the Elvaston plan of allowing one or more laterals beyond the bunches to extend freely was adopted. A Muscat temperature, in my opinion, considerably improves the quality of Madresfield Court, and the berries colour extremely well without greatly lowering the temperature of the house.—W. IGGULDEN.

(To be continued.)

### GLADIOLUS NOTES.

THIS has been a grand season for the Gladiolus, a season which it is to be hoped will be the first of a series of the same kind. Gladiolus have been practically under a cloud since 1875, some seasons being good, some bad, but in no one first-rate like the present, the lowest depth being reached in 1879, when we had to lift and flower a very large number under glass, the consequence being that many of the corms were only half grown and badly ripened. From what I can see of the corms this season they are likely to be large, full grown, and well ripened, though it will be only safe to lift any green plants and ripen them off under glass. The disease as a disease I am glad to know nothing about. A few years ago among a lot of bought-in corms were over a dozen which either did not grow or made the weakest attempt possible. Last winter some more were bought. Remembering the experience of the past these were all examined, and some dead corms were found. These our seedsman changed, and this season there has been no cause for further complaint. Of course I do not mean to insinuate that others may not have a disease among their stock. My own difficulty with home-grown Gladiolus has been, that in order to get fine spikes and large flowers, too much manure has been given the plants for their welfare. In order to produce fine corms treatment suitable for Potatoes is exactly what the Gladiolus want; but then it is the tubers of the Potatoes we want, not the flowers, while with the Gladiolus exactly the opposite is the case. I find the greatest difficulty in keeping the tubers of strongly grown Dahlias. The better they are grown the less of tuber as a rule there is to keep. Strong-grown Hollyhocks are also more difficult to winter than those which have been left to their own resources. I know it was the case with a nursery firm who a few years ago produced and exhibited very fine spikes, under a strong manurial system, that they found the corms were so small as to be worthless.

The practical question is, How are fine spikes to be produced unless we apply manure heavily? I think we shall have to change our system entirely, doing away with fresh manure in the soil, and trusting to chemical manures under ground solely for a food supply. I imagine we also plant rather deeply. Some of ours were planted almost close to the surface this spring and afterwards earthed up, and the results are such as to encourage a more extended planting on that system another year. A slight mulching of fresh horse droppings when the spikes begin to appear is advantageous. I do not think it is beneficial to be always pouring water into the plants. They like a damp and dull climate in order to produce the finest examples, as the many fine spikes exhibited in this and past years from the west of Scotland show, and as anyone who has grown Gladiolus will have found out, a few dull days elongating the spikes and adding size to flower with an intensity in their colouring which no artificial means can produce.

This spring I saw in the garden of an enthusiastic lover of flowers a failure through trying to bring them on too rapidly. Planted out in the borders, owing to the lateness of the district they failed to bear flowers, and the good results following the starting of the plants in pots by a neighbour induced him to go and do likewise; but he had planted out too early, and a frost cut off at once his Gladiolus and his hopes. It is quite early enough to plant from pots towards the middle of May where it is found necessary to give the plants an early start, for it must not be forgotten that plants are much more susceptible to frost in spring than they are in autumn, more especially when they have been tenderly nursed before having to meet the "cald blast." A point worth considering in very late districts would be the advisability of growing early varieties only. I have had Shakspeare flowering since the middle of July, and I really do not know that any great advantage, or an advantage at all, would have been reaped by having a dozen varieties of much the same colour blooming through these three months instead of that one variety. Of course where growers exhibit they like to have a large variety; but here as with many, perhaps all, the products of our gardens a selected number is more reliable than growing

too many. Exhibitors must also note that any variety will not do for taking prizes. I have seen more than one case during the past season where first prizes were lost through small-flowered though long-spiked varieties being staged. Judges are to be gained more by fine individual flowers than by mere numbers without regard to quality. This should be well noted by would-be prizetakers. At the same time it is not advisable to buy up expensive or new varieties. Some of the best are still those which were grown a dozen or more years ago, while new untried varieties are more likely to give disappointment than yield any help towards making up a good stand. The poorest sorts I had this year were new and dear varieties, some of them costing as much for one corm as would have purchased a score of some tried old variety.

Though it is not yet the time to purchase I will attach a list of sorts which give good spikes and fine flowers. The first twelve are cheap and really good. Colbert, Zenobia, Brennus, Picturatus, Penelope, Velleda, Rosea Perfecta, Belladonna, Homère, Celi-mene, Madame Basseville, Adolphe Brongniart, Horace Vernet, Murillo, Caprice, Sylvie, Lady Bridport, Ondine, Orphée, Le Phare, Andre Leroy, Madame Desportes (rather uncertain), Shakspeare, Panorama, Archduchess Marie Christine (a very grand variety), Carnation, Camille, Jupiter, Leander, L'Unique, Violet, Ambroise Verschaffelt, Psyche, Mabel, Baroness Burdett Coutts (very fine), De Mirbel, Amalthée, Anna, Canova, Giganteus, Le Vesuve. When well grown brenchleyensis is good—immeasurably superior to other very cheap kinds, such as Le Poussin.

Before closing these notes I may add that I do not think it would be an extravagance to purchase a supply of new corms every year in cases where it is found to be too much trouble to look after the old ones. A five-pound note will purchase from 100 to 200 corms in a few good sorts, and for what is really the most beautiful of autumn flowers that is not much of an outlay.—R. P. B.

### APPLES AND PEARS.

Good dessert Apples are appreciated by most people, but those of handsome appearance with good flavour combined are the varieties most appreciated on their tables. It will repay any cultivator, when the supply mainly depends on a few old trees, to plant at once a few cordons of the best varieties in any vacant spaces about the walls, as these will supply some very handsome fruits for any special occasion. Small trees could also be grown as bushes in the open; these come into bearing well the second year after planting, and we have gathered many fruits from these small trees the first season after they were planted. The fruits should also be thinned early in the season when they have set too thickly. These small trees are very interesting when in fruit, as a good selection of varieties may be grown in a limited space. Many gardeners do not approve the idea of growing a good selection of Apples on small trees, and point to large old standards loaded with fruit as the trees they prefer. This is very well, but many gentlemen, and we may say the majority, like to see a change on their table, especially when there is much company, and these small trees supply the want without waiting above a year for some results. The following selection of varieties would be appreciated on a gentleman's table:—Mr. Gladstone, Margaret, Red Astrachan, Kerry Pippin, King of the Pippins, Pine Golden Pippin, American Mother, Margil, Cox's Orange Pippin, Mannington's Pearmain, Golden Russet, Ribston Pippin, Melon, Scarlet Nonpareil, Duke of Devonshire, Lodge-more Nonpareil, Court Pendu Plat, Lord Burghley, and Braddick's Nonpareil. There are many more excellent varieties, but the above are all handsome when well grown.

The planting season will soon be here, and young head gardeners probably are considering what are the best varieties of Pears to plant so as to give a succession of useful good-flavoured fruits. Many Pear trees are undoubtedly planted by gardeners which are not worth the space, large showy varieties seen on the exhibition table being often selected. Triomphe de Jodoigne, General Todtleben, and Beurré Clairgeau are amongst the worthless varieties. The latter may be of fair flavour in some districts, but not generally. Doyenne Boussoch is a very handsome melting Pear, but it must be taken just at the right time, and it may be termed an unreliable variety. Duchesse d'Angoulême is a well-known Pear, but it is not often melting in this country. The only time I ever tasted it melting was this season, and it occurred in the following manner. I noticed some fine-looking samples in a fruiterer's window the first week in September. They were very green and apparently unripe, but I was informed they were quite ripe, and was given one to try. To my surprise it was quite melting. They had been grown in the open near



Conway, North Wales. I have often wondered since if we allow them to hang too long on the trees; I also think it ought not to be grown on a wall.

My estimate of good Pears will not include any of the early varieties, but only those which are termed melting, as in my estimation others are not worth growing for dessert. *Beurré d'Amanlis* is the first to ripen on the list. It is a very useful Pear. It succeeds well in the open. It is also excellent when grown on a wall. *Beurré Superfin* is an excellent variety. It succeeds well on a wall or in the open. When grown in the open it assumes a russet appearance, and the flavour is exquisite. *Louise Bonne* of Jersey is an excellent well-known Pear. It succeeds well in the open in the south. *Beurré Hardy* is a capital large fruited variety, and very rich in flavour. As a wall Pear it grows to a very large size; it also does well in the open in the south. *Marie Louise*.—This well-known Pear hardly needs any comment. It succeeds well in the open in the south; it is also very good when grown against a wall. With a few trees on different aspects a long succession may be maintained. *Doyenné du Comice*.—This useful Pear should be tried in every garden in the open and against a wall. It is one of the very best of Pears. *Pitmaston Duchess* is becoming very popular. With good culture it grows to a very large size. *Marie Louise d'Uccé*.—This is very hardy and well adapted for the north. *Beurré Diel* is an old favourite. Its flavour is liked by many; it is very hardy. The following Pears are best grown on south, south-west, or west walls. *Beurré d'Arenberg*.—Although this is not a large Pear it is of excellent flavour, and ripens at a useful time. *Winter Neis*.—Small, but very delicious. *Josephine de Malines*.—The flavour of this excellent Pear is excelled by no other variety. *Glou Morceau*.—Very good. *Emile d'Heyst*.—Very large, and of fine flavour. The following are also very good:—*Marie Benoist*, *Knight's Monarch*, *Passe Crassane*, *Bergamotte Esperen*, *Nouvelle Fulvie*, *Easter Beurré* (good in some districts, and does best in the open), and *Olivier de Serres*.—A. YOUNG.

### A GOSSIP ON NEW FRENCH JAPANESE CHRYSANTHEMUMS.

THE announcement in the horticultural press that the opening of the exhibitions in connection with the numerous local Chrysanthemum societies is at hand has no doubt been a source of considerable satisfaction to those of your readers who happen to be enthusiastic growers of that charming flower. For a long time past they must have noticed with no little astonishment a large number of new varieties brought out year after year, and more particularly so in the case of the Japanese section. That we are likely to have a still larger influx in the future is admitted among growers who are well acquainted with the work that is being carried on in various parts of the Continent by raisers who have already made their names famous wherever the Chrysanthemum is held in esteem. Whether this be an advantage or not I think the new comers must answer for themselves, but "it goes without saying" that many varieties of recent importation have proved their excellence on the exhibition stands of all the leading societies in this country.

It is to the French raisers that the credit of distributing the vast majority of the Japanese varieties now in cultivation among us is due, but it is principally to one firm that we amateur and professional English growers owe a debt of gratitude. As long ago as 1826-27 *Capitaine Bernet*, the first amateur in Europe, began to raise the Chrysanthemum from seed, and was rewarded by seeing his efforts constantly crowned with success in obtaining varieties of new and distinct kinds. The work which he inaugurated has been continued to this day by a band of amateur and professional growers in the neighbourhood in which he lived and worked, and at length, after a long-continued run of success, they began almost to think that they had run the length of possibility. But the importation of varieties from Japan soon made known a new type, and by the careful and intelligent crossing of the different varieties a fresh impulse was given to the already interesting culture of this flower. The results have proved a grand success, and the Chrysanthemum at the present time is a greater favourite and more extensively cultivated in this country than has ever been the case before.

There is, I think, much reason in assuming that the Chrysanthemum in a measure owes its still increasing popularity to the introduction of the Japanese varieties and to the subsequent improvements made by *Capitaine Bernet's* successors in the south of France, the climate of which has proved to be eminently suitable for ripening the seed; and it is in this class that the greatest advances have been made by them during a comparatively speaking short space of time.

Most people interested in this subject are now familiar with the leading varieties of French origin, and those who remember the very fine display of Japanese blooms at the Lambeth Amateur Chrysan-

themum Society's Show in 1877, which was mainly owing to the efforts of the Secretary, the late Mr. Summers, can scarcely be astonished at the very prominent position that has been given to them in all exhibitions since that date. When the leading French raisers sent out a set of twenty seedlings in the spring of last year they informed us that they had been selected from upwards of 4000 seedling plants, so that some little idea may be formed of the many hours of anxiety and the trouble that the production of these new varieties must necessarily entail. I do not know whether it will be of any interest for your readers to be made acquainted with the names of the collection to which I have just referred, but it may possibly be of some service, as nearly all of them are now to be seen at both of the exhibitions at the Temple Gardens and at well-known establishments such as Messrs. Cannell & Sons of Swanley, Mr. Davis of Camberwell, Messrs. Veitch of Chelsea, and others, and can be purchased of them or of any other respectable nurseryman who deals in the Chrysanthemum.

They are as follow:—*Angèle*, rather a pleasing variety, conspicuous by its lilac rosy petals; *Boule d'Argent*, *Brunette*, *Elise*, *Flamme de Punch*, a charming flower of extraordinary dimensions, the colour of which is a bright orange with a tinge of red; *Helvétie*, *L'Or du Rhin*, *M. Blanc*; *M. Tarin*, which comes rather early; *M. Astorg*, a fine silvery white, with a centre of very pale violet; *M. Deville*, *M. Henry Jacotot*; *M. Moussillac*, a large flower of a bright crimson red, with an incurved centre of bright gold; *Mdlle. Augustine Gauthet*, *Mme Deville*; *Margot*, very distinct, will attract much attention on account of its beautiful yellow violet rose petals, which droop in a graceful manner from its chamois-coloured centre; *M. Boyer*. *Mastic*: this, too, is very distinct, and is of a very dark yellow ochre colour, with a mingling of light straw colour; *Roseum superbum*, and *Souvenir d'Amsterdam*, a vivid crimson. From other sources we had *Bois-Rosé*, *Hérisson*, *M. de Vazza*, and several others, which, although unclassified, may ultimately prove to be of the Japanese type if one may be permitted to judge by the very elaborate descriptions that were given of them.

The imported varieties of the past and present year being now in full bloom have been pronounced by competent authorities to be the finest set of plants that has ever yet been distributed. Several of the 1883 set just mentioned have been awarded first-class certificates by the Royal Horticultural Society, and at the recent meetings of the Floral Committee of the National Chrysanthemum Society first-class certificates have also been gained by Colonel Mallock for *M. Astorg* (*Délaux*) and *M. Tarin* (*Délaux*), and by Messrs. Cannell and Sons for *Flamme de Punch* (*Délaux*) and *M. Moussillac* (*Délaux*). Messrs. Cannell also presented the same evening a bloom of a much more ancient variety—viz., *Richard Larios* (*Délaux*), the striking features of which are the dark rose and brilliant violet marking with tips of snowy white. This, too, was awarded a first-class certificate, but it is scarcely large enough for a show flower, although an exceedingly useful one for decorative purposes.

However, of all seasons the spring of 1884 was the grandest triumph for the French raisers, and one in which we shall in due time participate; and although only a young gardener myself, your subscribers who have been living witnesses of the gradual but certain progress that has been made will pardon my assuming that the French catalogues early in the year must have startled even the oldest growers by the unprecedented announcement of the distribution of between seventy and eighty new varieties of Chrysanthemums in the various sections, the majority of which are described as new Japanese varieties.

Those who possess a share of these novelties (for no one to my knowledge has ventured on the importation of so large a number as the entire set comprises) speak very highly of them, the greatest fault being that many are semi-early and are at their best too soon for the ordinary show purposes; and as these plants may probably be two or three years before they are eventually in the hands of the general public, it may be useful to know that out of the large number which have been imported by the English trade there are many, and probably the best of this more recent collection, to be seen at those trade growers, who make it a point of their business to import and distribute this very valuable November favourite.

For those exhibitors and growers who desire to acquire some of these newer varieties, and thus make a very fine addition to the collections which they already possess, I will specially mention *Belle Alliance*, a fine brick red with a golden centre; *Colibri*, an early bloomer of a dark crimson colour, with an incurved centre ball of gold; *Frizou*, a splendid distinct canary yellow with curly florets; *Madame de Sévin*, a very large bloom of beautiful amaranth rose with a fine white centre; *Brise du Matin*, a light pink-coloured flower, very full, and one that comes easy, and has already been awarded a first-class certificate by the National Chrysanthemum Society; *Fernand Feral*, another very large bloom of a light rosy pink; *Beauté des Jardins*, a light amaranth colour; *Anna Delaux* and *Aurore*



Boreale, two varieties of crimson yellow, which do not appear to be quite so large nor likely to prove so useful for show purposes as the others; M. Cochet, a very light variety.—A LAMBETH AMATEUR.

### STRIKING CUTTINGS IN WATER.

THIS method is an old one. I first saw it practised by a gardener thirty-five years ago, and the only two plants operated on were Cucumbers and Oleanders, the former for raising plants for growing in pots for a winter supply of fruit, and the Oleanders with buds set so as to have dwarf plants in pots for placing in boudoirs, as they were then much esteemed. Table and other decorations since then have necessitated the rearing of a number of plants large in head and small in size of pots, well furnished to the base, and as characteristic in the foliage and colour as they attain in specimens. We want a plant now in a 3-inch as large and as well furnished as were formerly had in one twice the size, and if it be one valued for its foliage it must have the marking as decided and clear as possible. To secure this a practice has obtained of taking much larger cuttings, and from parts that possessed the characteristics of the subject in the highest degree. To effect their speedy rooting and retain the foliage, close propagating houses, or frames, or handlights within houses, are resorted to; indeed so great is the demand for small plants in most establishments, that a propagating house is employed to maintain a supply. Even with these appliances the cuttings will lose their lower leaves, and the growth they make whilst rooting is not so good in colour or in growth as that of the cutting when detached, and some time must elapse after rooting before it is in a condition to be effective for the purpose intended. To attain the desired object various experiments have been resorted to with many plants, notably Crotons, Dracænas, &c.—viz., notching a well-coloured growth on a Croton or Dracæna immediately below a joint, or at two joints on opposite sides, and covering with moss and a ligature of copper wire to keep it in position, which kept constantly wet induced roots to form and permeate the moss. Another plan was to cut a notch, and instead of covering it with moss break a small pot in halves, and fix it so to enclose the notched part in the pot, which filled with rough peat or cocoa-nut fibre refuse, and kept moist, resulted in roots being formed in about six weeks sufficient to cater for the plant, as it were, when detached. The pot was held in position by stakes and copper wire, the hole being enlarged to admit the stem of the cutting below the notch. Both these plans are good and applicable to many plants besides Crotons and Dracænas, and may be practised with some that are difficult to propagate from cuttings through their being slow rooting, and possess the advantage over detached cuttings in not requiring shading, or anything different from the general treatment of the parent plants. It has the disadvantage, as compared with those detached and struck in water, of being somewhat awkward-looking until the parts operated on are rooted and detached, and it has another where stock is a consideration, that a cutting detached at once will cause the parent to push fresh growth and afford other cuttings by the time the layered ones are rooted.

Striking cuttings in water is a very simple and certain operation. All that is needed is some clear rain water, some pieces of charcoal, and some clean bottles; pint champagne bottles are as good as any, but others with flat bottoms will do. Place in each a few pieces of charcoal about the size of a walnut, then fill the bottles with water, and stand where you intend them to be whilst the cuttings are rooting, which is best where they will be shaded from the direct rays of the sun. When the bottles have been in the house twenty-four hours, by which time the water will have become warmed to the mean temperature of the house, take the cuttings prepared as if they were to be inserted in soil, cut transversely below a joint, and remove only as many leaves as will allow of the stem being put in the bottles to the extent of a couple of inches, or at most three. The base of the cuttings should be in the water, and be covered about half an inch, which will be suitable for the first week, but in the second the cutting may be pushed lower into the water, yet never deeper than an inch. No shading is necessary, or anything different from that in which the parent plants are grown, and the little attention needed is to keep the bottles replenished with tepid water as needed, and in due course roots will be emitted plentifully, and when they have grown so as to be of a length and quantity that can be placed in a 3-inch pot, remove and pot at once. Just a little shade may be needed until the potting is recovered from, and the plants in a few days are as good as ever they will be for decorative purposes, provided, of course, they were in good condition to begin with, but if small they may need growing. This mode of propagation may be practised at any time of year. All that is necessary in the case of Crotons and Dracænas is to secure a little firm wood to the base of the cuttings, and not put them in when they are making young growth.

How many other plants can be propagated in the same way I am not prepared to state, but I have no doubt that many could be so increased. It is a most interesting mode of propagation, and well deserving of more attention than has hitherto been bestowed upon it.—G. A.

### PLANTING RASPBERRIES.

THIS is no new subject in the pages of the Journal. It has been well treated by some of your very able correspondents; yet as time brings new readers it may perhaps not be out of place to again allude to it as a reminder to those who intend planting that the season for preparation is at hand. Briefly, then, I will give the mode of procedure which has

resulted in canes, some 7 feet, the majority 6 feet long, from ordinary nursery canes planted on the 8th of November last.

The ground intended for the Raspberries had been occupied between six or seven years with Strawberries, and unfortunately was overrun with Bindweed, with roots long enough for shoe-strings. To exterminate this it was evident more than ordinary care in trenching was necessary. The soil is a medium-textured loam, about 18 inches deep, on a gravelly sub-soil. Commencing at one corner an opening was made down to the gravel, then with forks the soil was worked forward in very small quantities, thoroughly dividing it to get out every portion of the roots. By this means the whole body of soil was thoroughly incorporated together and rendered open, which has conduced very materially to the success of the canes.

After being thus trenched the ground was again levelled, and other trenches opened 5 feet apart, 18 inches wide, and about 9 inches deep, into which 4 or 5 inches thick of well-decayed manure was placed, covered slightly with soil, and then the canes planted 18 inches apart. A wire trellis was put up consisting of three wires  $1\frac{1}{2}$  foot, 3 feet, and  $4\frac{1}{2}$  feet respectively from the ground, to which the canes were tied, and were then mulched with dry litter. The foliage was still green when the plants were received from Messrs. Smith & Co. of Worcester. This was carefully preserved until it fell naturally, when the canes were pruned to the lowest wire.

Their culture since has consisted in a good mulching of short grass from the lawn, and securing the young canes to the trellis as they grew. I can look with pleasure now upon the 65 yards of trellis well clothed with these sturdy canes with great hopes as to what I expect to get from them after such a favourable season to ripen them. The variety is the Red Antwerp.—J. COPSON, *Down Ampney*.

### PHŒNIX DACTYLIFERA.

THE genus Phœnix is distributed over northern Africa and tropical Asia, although one or two species seem to have strayed from their original home, being found in south-eastern Africa. All the species have long pinnate foliage, the lower pinnæ in some of the species being reduced to mere stout spines. Some have tall and stout stems, whilst others are dwarf, and in some instances stemless. The plant under consideration belongs to the arborescent section, and although numerous varieties are distinguished by the Arabs, and each named after some peculiarity, in every case it is a tall handsome tree, attaining a height of from 50 to 80 feet, bearing an immense quantity of nutritious fruit, and yielding most of the articles of life necessary to the Arabs and their domestic animals.

Stating the height which Palms and various other tropical trees attain often has the effect of deterring many from commencing their culture. This is because they imagine they cannot accommodate them, quite forgetting that under cultivation it frequently takes very many years before the plants reach their greatest altitude. And so it is in this case. When about three years old the Date Palm is an elegant plant for the dinner table, and the remarks it excites among the guests upon its products and their application might conduce considerably to the entertainment of a number of intelligent persons. Then for an amateur who desires a good window plant here is Phœnix dactylifera, which will grow and thrive in a sitting-room, and will always have a cheerful effect. As it increases in size our fair readers may wish to have it removed for something smaller, but it by no means follows that the plant must be discarded. It will form a magnificent ornament for the hall or the landing upon the top of the staircase during the winter months, and in summer it may be planted, or rather plunged, out of doors in the garden, either as a single specimen on the lawn or as the centre of a group of broad-foliaged plants, in which positions it will be at home, and very much enhance the tropical appearance of the summer garden. We must, nevertheless, not ignore its beauties as an indoor plant, for if grown in a stove it affords a pleasing contrast to other subjects—those having gay flowers or those whose chief attraction is the ornamental character of their leaves; and when well grown it is a telling plant either in a collection of Palms or a mixed collection of stove and greenhouse plants.

Much more could be said respecting this most interesting Palm, but we may conclude this brief summary with a few remarks upon its cultivation, and this to anyone having a little acquaintance with plants will be found of the simplest character. The soil we prefer for potting is half loam and peat with a liberal allowance of sand, and if a little fine cocoa-nut fibre refuse can be added it will materially encourage the roots. Soil such as that described, good drainage, plenty of water, and stove heat are the leading features of the system adopted with Date Palms until they are about three years old, at which time they should have assumed their normal state and be neat little plants, with several of their distinct-looking pinnate leaves fully developed. Some may



then be gradually inured to the temperature of the greenhouse, and when this is effected they may be used for window decoration or any other purpose in a low temperature, as the taste of the owner may dictate. The others, if required for stove decoration, or if it is essential that they should be grown quickly, may be kept in the hothouse, supplied with an abundance of water, and repotted from time to time as may be necessary.

As the plants increase in size it is beneficial to decrease the quantity of peat and substitute loam for it. For old plants about one part of peat mixed with three of loam forms a very good and nutritious compost, in which not only the subject of the present paper, *Phoenix dactylifera*, but the other species of the genus in cultivation, will be found to flourish.—E. C.

#### THOUGHTS ON CURRENT TOPICS.

I DEVOTED so much attention to "A Non-Believer" in my last budget of thoughts on the subject of applying liquid manure, that other matters

subject some years ago, and have had ample opportunity of testing the soundness of the teachings of your correspondent on page 299, and I think not many can err by procuring the varieties there recommended and planting them as soon as possible.

TUBEROUS Begonias have been to the fore of late as plants for flower gardens. I was interested in the notes of "A Traveller" on the great display at Forest Hill, also on the remarks of "W. J. M." on examples of culture in Ireland. As with *Violas*, so with these Begonias. I have been thinking about them for a few years past, and long since arrived at the conclusion that starting the plants too early, "drawing" them under glass and allowing them to get root-bound in pots, were primary evils to be avoided, and by avoiding them previous failures were averted. Store the tubers as if they were choice Potatoes, start them steadily in frames in April, plant out in due time in very rich soil, and they will grow luxuriantly and flower splendidly if they have plenty of water. Where the rainfall is greatest and the soil the richest, growth is the strongest; at least that is what I think after reading about, observing, and cultivating these beautiful summer and autumn flowers.

I AM bound to say that my thoughts run quite counter to the opinions of Mr. Muir as to Brussels Sprouts "not being in season" in September. Of Cabbages there has been a surfeit by that time, Cauliflowers pall on the appetite, and a change is wanted from Peas. For years I have been trying to get "Sprouts" as early as possible, both by sowing in autumn with Cauliflowers, and in heat in spring, and never succeeded in having them too soon. A first-rate dish of Brussels Sprouts in a collection of vegetables in September will, I think, always have weight with judges. Such a dish affords evidence of good culture, and I am sure the produce is welcomed by those for whom it is grown. I am told by "one who knows," that Brussels Sprouts are in use in all the leading hotels and clubs in September, which I think is pretty good evidence that they are "in season" at that time. As long as I have vegetables to grow I shall endeavour, as hitherto, to have a few Brussels Sprouts in September, and if I show them I shall hope your correspondent will not be one of the judges.

UNDUE importance is, I sometimes think, attached to lengthy articles. No doubt they are useful, and many of them are certainly very good, even so good that I almost envy the writers on their ability; nevertheless, if persons who can convey a useful hint in a short one would not hesitate to do so they would do good service. Many a "wrinkle" is lost, the possessor thinking it not worth writing about because he cannot spin out a long story. That is a mistake. Mr. Young and Mr. Burton occasionally contribute a pithy practical note, and both have referred to white Pinks for forcing. I think I may as well join in too, and air my egotism by telling of the simplest of all methods of preparation. Take hold of a good handful of stout growths round the outside of a strong root in the garden; with the other slip off the growths as low as possible; twist these into a pot, working soil amongst them, and pressing it firmly, the growths resting snugly on the surface; place the pots in a frame, keep the soil always moist; introduce into gentle heat in due time, and if the clumps do not flower about as well as if they had been left in the garden they will be different to mine. I have tried all sorts of schemes to get plenty of white Pinks for the early London season, but this is the easiest and the best of them all, and now is the time for potting.

I OPENED my eyes very widely when I read the short note of "A. L. M." commendatory of Belle Lyonnaise Rose, for I, too, have long grown it on the north side of a wall in a sheltered garden, and it has given a wealth of magnificent blooms, quite surpassing those of Gloire de Dijon on the same wall. I thought at first your correspondent must have been describing my Rose, but I perceive it is not so, for his other Rose is Madame Lambard. I join with "A. L. M.," then, in describing Belle Lyonnaise as a "true and trusted friend;" and as the planting season is approaching advise all who can do so to give a trial to this beautiful Rose. It is a child of Gloire de Dijon, and I for one prefer it to the parent. This denotes "progress."

"PROGRESS!" Mr. Iggulden regrets I do not belong to that "party," because I do not think the time has come for judging Tomatoes by tasting the specimens staged at exhibitions. I fear I shall not get the "chou-chou pickle" that is promised conditionally that I think the matter over again "differently." True progress in my view consists, not in progressing by "leaps and bounds," but by steady certain steps, seeing your way clearly, and then treading firmly. I cannot see my way at present to the adoption of the palate test, which is not adopted for judging Cucumbers that are eaten uncooked to a greater extent than Tomatoes are. There is no recognised standard of quality in Tomatoes. A certain number are admittedly good, and a certain number indifferent; and if a judge is not acquainted with these he is not fit to be entrusted with determining the awards by his uneducated "taste." Let us go by degrees by first giving prizes both for smooth and for ribbed sorts, and then see. After this I must not hope for the "chou-chou," which must



Fig. 64.—*Phoenix dactylifera*.

were passed, not because they were not worth thinking about, but because there is both a limit to mental exercise and to the space whereon I can hope to rely for the recording of my impressions. I am quite disappointed with the rejoinder of my friendly assailant; but of that more anon, a few other subjects commending themselves to momentary attention.

A SHORT time ago a very excellent article appeared on *Violas*, and I thought when I read it that the writer pointed out in a sentence the great cause of failure of those deservedly popular and undoubtedly beautiful flowers. The failure consists in late spring or early summer planting. Those who are in the habit of planting *Violas* with other bedding plants in May—and thousands of *Violas* are so planted—have no right to expect the plants to flower freely and continuously. The right time to plant *Violas*, as Mr. Jenkins has pointed out, is October, or as soon as the beds can be cleared and prepared for them. Make the soil fertile, plant deeply, and establish *Violas* before winter, and it will be a very extraordinary season if they do not give satisfaction. I thought about this



go to someone else who will be good enough to support your "advanced" correspondent in his views.

JUST as I have got my thoughts in the way of running smoothly, and with a dozen other subjects in mind that I could with pleasure review, up starts the "lion in my path." I had almost forgotten him, but he is there and must be faced. Happily he is not formidable. My leonine obstructionist is "Non-Believer."

A FEW weeks ago I was taken to task because I ventured to advise all whom the subject might concern "never to give liquid manure when the soil is dry." I was pinned to my words, which I was reminded admitted of "no qualification." Fortunately they were not jotted down at random, and from their natural meaning I have had no desire to recede. I have not the slightest objection to be rivetted by my own chains if they can be made to fit; but I cannot fail to observe—no one can—that he who would bind me so closely himself flies off into generalities, his answer being that my views are contradicted by "common practice." I had hoped for something much more cogent than that, which is really no reply at all, for no man living can condense into one common practice the variable methods of applying manures. As there is nothing definite or tangible there I will pass on.

YOUR correspondent next objects to the number of my paragraphs. For those I am quite willing to apologise, while I do not at all mind being considered grotesque in my illustrations so long as they "tell." When "Non-Believer" can demonstrate by scientific evidence or analogy that either he or the plants and crops he grows can drink or absorb water and reject what it holds in solution, then, and not till then, can he prove the unsoundness of what he calls my theory. But it is not my theory at all. I can claim no such credit. I accept it and believe in its truth. He challenged it by implying it is not true; let him then prove its falsity. At present he has simply "declined to accept," which anybody could do, and it is neither more nor less than a surrender.

WHEN I use the words "dry soil" I mean what I say. It is suggested that when it is so dry that the "leaves wither" of plants that are growing or languishing in it, that the sense is "exaggerated;" but "A Non-Believer's" own words were that he gave liquid manure to Peas that were drooping with the drought, and washed it in. Are not "drooping" and "withering" synonymous? So much for that objection.

I AM afraid I must trouble you with another paragraph or two. We are told that "dry soil absorbing less liquid than moist soils amounts to saying that a bottle already half full of water will hold more than one that is quite empty." I have heard of the "bottle trick" before. As an argument in this case I will show that it is utterly fallacious and has absolutely no legitimate application.

FOR testing the absorbent quality of dry and moist soil the conditions must be equal, or the so-called test is not a test at all, because not fair. The earth is not in a bottle, in its very nature water can pass through it; we imitate that as far as possible in growing plants in pots by making provision for the escape of water. Before the bottle can be fairly brought into comparison it must obviously be made like the flower pot—have a hole in it. The conditions are then equal, not otherwise. Now fill one bottle with soil and let it shrink and get so dry that plants if in it would "droop by drought," and another with soil so moist that it would keep them quite fresh. Pour exactly the same quantity of water into the soil in each bottle and catch what passes through. I have tried this with soil in flower pots; the result is very striking, and shows conclusively that moist, not of course saturated, soil holds by far the most water; in fact, every gardener knows that when the soil in pots gets too dry the water "rushes through it like through a sieve." So it would through a bottle if it could; so it does through the earth when dry in fields and gardens. The bottle argument, then, as used by my critic is entirely fallacious.

AND still he cannot see the difference between giving artificial or liquid manures to dry soil and washing them in, and applying them to soil after rain or when made moist by watering. It is strange. I imagine nine-tenths of competent gardeners can see the difference plainly enough. It is really important and fundamental. This latter, too, is the right way, the other the wrong one—right because economical, safe, and effectual; wrong because wasteful, unsafe, and often injurious, for the reasons previously stated and which remain uncontroverted; and, further, I have seen in agricultural experiments liquid manure do actual injury to pasture when given in hot weather and the soil quite dry, while liquid exactly of the same kind and strength given after rain or watering has been decidedly beneficial. I have seen both Turnips and Wheat positively damaged by nitrate of soda given under the first-named conditions, while under the latter the dressing was markedly beneficial. These are facts, and I for one cannot ignore their teaching.

I CANNOT help the increase of paragraphs. They seem to grow naturally, and I think necessarily, for if "Non-Believer" cannot understand the matter there must be many less experienced cultivators who need a few short homilies on the use and abuse of liquid manure. On one point the reply of your correspondent is conclusive—he could not

prevent the crops drooping if he had no water to give them; on all other points he is in error, at least that is the opinion of—A THINKER.

### AMONGST THE CHRYSANTHEMUMS.

A GLANCE at the long list of exhibitions given in another column of this Journal is amply sufficient to indicate that the Chrysanthemum is very far from declining in popularity, indeed there is strong evidence that the admirers of the Autumn Queen are rapidly increasing in numbers. Enthusiasm in the culture of this useful and welcome plant is more vigorous than ever, and owing to the freedom with which the best cultivators have published their practice there is a great general improvement observable. As far as can be determined at present, this is likely to be very marked at the leading exhibitions during the approaching season, and unless the weather proves unusually disastrous judges will in most cases, particularly around the metropolis, have no little difficulty in making their awards. There will, of course, as usual be some exceptionally fine blooms, but the uniformity of good quality exhibits will be notable, and indifferent blooms will have a poor chance at any metropolitan show. An idea has seemed to be prevalent lately that the majority of Chrysanthemums would be earlier than usual, and that on this account some of the exhibitions would fall short of their customary high position. This, however, appears to be unfounded, and in several cases collections are later than last year. The prospects altogether are most favourable to a busy and successful exhibition season. New competitors are expected at several of the leading shows, and some of the older exhibitors will have occasion to look to their laurels.

### LARGE PRIZES.

In the neighbourhood of London the two principal sources of interest are the £25 challenge cup at Kingston and the £15 prize at the Royal Aquarium, and on the whole the latter is probably exciting the greatest attention and is likely to bring the largest number of competitors. The challenge cup is a great temptation; it is a magnificent prize, and an honour to any grower who can succeed in winning it, but it has to be won twice, and may necessitate three years' hard work before it is gained. The National Society's prize, on the other hand, has to be won but once, and though forty-eight blooms are required a less number of varieties are needed, and that is a matter which can be fully appreciated by competitors in such classes. Then, too, the prize is the largest that has ever been offered in money at one show, and is amply sufficient to compensate for the most careful preparation and the strongest efforts. Some, indeed, have gone so far as to say the prize is too large, but that is a mistake, for, as with the Kingston challenge cup, an indirect stimulus is afforded to Chrysanthemum-growing in general, attention is aroused and some degree of enthusiasm excited which is beneficial in many ways. We cannot progress without this enthusiasm, and all branches of horticulture owe much to specialists in every science and art.

### THE NATIONAL SOCIETY'S CATALOGUE.

The National Society has done good work in offering substantial prizes, in instituting a committee of experts to examine and certificate new varieties during the season; they are also endeavouring in many other ways to increase the love and improve the culture of the Chrysanthemum. But there is another good work which they have commenced and which they will be expected by growers to carry out as usefully and thoroughly as their other work. The "first" edition of their catalogue is issued and is now in the hands of hundreds; it has been freely criticised, its weak points discovered, and many improvements suggested, and it is desirable that the Society will do their utmost to render the next edition more worthy of their name. As the first attempt to issue an authoritative list of the varieties in cultivation the effort deserves much praise, but some emendation and amplification are needed to render it what it ought to be—a standard work of reference.

### CHRYSANTHEMUMS AROUND LONDON.

To give some idea of the condition of the Chrysanthemums around the metropolis the following notes will probably possess some interest, as growers are always eager to learn the state of affairs in other districts. The season, too, is one which affords the gardener a little leisure to visit his neighbours, and perhaps at no other time of year is there so fitting an opportunity for a comparison of notes and a discussion of successes or failures. Visits are paid and returned, and many a valuable hint is so gained that can be advantageously utilised during the coming season. Just before the exhibitions commence, however, is a somewhat anxious time; blooms are carefully watched, and efforts made to retard the too precocious or hasten the later ones, and speculations are indulged in respecting the number of collections that can be entered with any probability of success, classes selected, and all preparations completed. Then comes a little patient waiting, the show arrives, and success rewards the skill of the exhibitor or failure teaches that there is something which he had not mastered. The present is, however, the period of expectation, and each one is anticipating a satisfactory result for his labours. Taking the collections of Chrysanthemums in the order they were visited the first to be noted is

### THE LILFORD NURSERY, CAMBERWELL.

This season Mr. N. Davis has provided a magnificent display of plants and blooms, and to accommodate them he has erected a spacious and handsome show-house, which is admirably adapted for the purpose. It is 65 feet long, 30 feet wide, and 14½ feet high, and contains 1700 plants, the majority arranged in a bed in the centre, and the others on the side stages



The central bed has a beautiful effect, considerable taste being exercised in the arrangement of the different colours to contrast or harmonise. The blooms are mostly of exhibition size and substance, clean and bright in colour, and a large number of varieties are represented, including the best of the new ones. Japanese and incurved are alike good, and a large collection of seedling Pompons, which promise some valuable novelties, are fast expanding. The majority of Mr. Davis's blooms are taken from the terminal bud, and in several cases he has tried the cutting-down plan upon plants of the same variety struck at the same time, and the results are striking as illustrating the comparative value of the systems. The cut-down plants have a greater number of flowers, are dwarfer and more useful for decoration, but the taller plants have much the finer blooms. By practising both systems a greater diversity in the heights of the plants is ensured, and they can be thus arranged to better effect.

Many of the varieties are not yet in their best condition, but the old favourites, James Salter, Fair Maid of Guernsey, with many others, are in splendid form amongst the Japanese, while of the incurved the Rundle type is fast advancing to perfection. The new varieties also deserve mention, for there are many that will take a foremost position amongst exhibition flowers. Some notes on them must, however, be reserved until next week.

#### MORDEN PARK, LOWER MERTON.

During several years the Chrysanthemum blooms shown by Mr. Gibson from Morden Park have gained high positions at the chief metropolitan exhibitions, and have excited much admiration. This year he appears likely to ably maintain the credit he has won, for his blooms are superb in size and substance, and though they are somewhat early he considers he will have them right to time. In previous years, and especially last season, his blooms have been somewhat too early, and if he can guard against this he will prove a formidable competitor wherever his productions are staged. About 400 plants are grown, the majority very tall, 6 to 8 feet high, and bearing about three blooms, or a few more in the case of the Rundle family and some of the Japanese. In most instances the blooms are magnificent in all the qualities esteemed in a Chrysanthemum, and especially notable in this respect are Fair Maid of Guernsey, Comte de Germiny (very large), Queen of England (superb), Empress of India (magnificent), Criterion (grand), Garnet (large and rich colour), L'Incomparable (handsome), and Prince Alfred (fine). There are scores of others nearly as good, and it is to be hoped they will be in condition to take the position they so well deserve on the exhibition tables.

It is worthy of special remark that Bendigo has been tried here, and the opinion formed respecting it, as in other establishments, is that it cannot be distinguished from Mabel Ward. It is curious, however, that a plant raised from a cutting struck in March is now bearing one fine bloom which differs slightly from that variety, but the different colour appears to be nothing more than is seen when early and late buds are taken on the same plant.

#### MR. G. STEVENS' NURSERY, PUTNEY.

A good general collection of incurved and Japanese varieties is grown by Mr. G. Stevens, and the plants are healthy with fine promising blooms, which may be expected to afford some effective groups at several shows. Two varieties are, however, largely grown—one the well-known Elaine, of which nearly 1000 plants are represented, and the other is the handsome reflexed variety certificated last year under the name of George Stevens, of which there are 400 plants. The Elaine blooms are obtained early, cutting commencing at the end of September or early in October, and some thousands are, during the season, despatched to market, where they are always in demand. The plants are all dwarf, strong, and bear large handsome blooms, while after the earliest and finest are cut, a second crop of smaller but useful blooms is obtained, which continues the supply up to Christmas. To the variety George Stevens a word or two of praise may be well afforded, and first it may be remarked that Mr. Stevens very strongly and reasonably objects to the description given of it in the National Society's catalogue. The colour is there said to be "chocolate brown," which does not convey the slightest idea of the true shade. When first describing this last year I used the term crimson-maroon as indicating the colour of the upper surface of the florets, and I cannot add anything to that now, except that it is an extremely rich shade, and, as remarked then, the under surface of the florets being golden and slightly incurved in the centre gives a very distinct appearance to the blooms. It is very free, strong, but compact in habit, and is easily distinguished by the very dark green foliage.

Several seedlings in the different sections are expanding their flowers, the majority of which are in their second or third year's trial, and as they well retain the characters which led to their selection we may expect to see something meritorious amongst them.

#### BRISTOL HOUSE, PUTNEY HEATH.

As the winner of the first challenge cup offered at Kingston Mr. Harding has gained a considerable degree of fame in the Chrysanthemum world, and as a careful intelligent cultivator he holds a high position. This season he has about 350 plants, mostly dwarf, 3 to 4 feet high, with some of the exceptionally tall ones as much as 6 or 7 feet high. They are, however, all of useful decorative size, and when arranged in the handsome new Rose house and vinery they will form a beautiful display. Mr. Harding recommends and practises cutting down to induce a dwarfer habit, enabling anyone to see the flowers, as he expresses it, "without climbing a ladder." The success of his method is manifest, and he further considers that it is as easy to obtain six to a dozen good blooms

on a well-grown plant so treated as it is to have three or four on the taller unstopped specimens. Opinions may differ on this point, but he has good grounds for his statement when he points to his previous successes. The few-flowered system does, however, result in the largest blooms unquestionably; the only evil is, perhaps, that they are liable to err on the side of coarseness, and thus defeat the object of the grower. As regards neatness and symmetry Mr. Harding's blooms are excellent, and they are certainly not too forward, but seem to be expanding at exactly the right speed to be "in" at show time.

It may be added that Mr. Harding considers the 20th of June the best time for cutting the plants down, a few days earlier or later according to the season and the varieties to be treated. Many cultivators, however, even in the same district, regard this as too early, and think the first week in June quite late enough, as, if the operation is deferred too long, it retards the blooms to such an extent that some degree of forcing has often to be resorted to, which is most undesirable, and frequently disastrous. The plants are cut down to various heights from 6 inches to a foot from the soil, or indeed to any point where it is seen a good break can be obtained. The lower they are stopped the dwarfer the plants, and the value of such specimens for front rows in groups cannot be over-estimated.

#### BELVEDERE HOUSE, WIMBLEDON

The chief feature amongst Chrysanthemums at this establishment are the specimen Pompons which Mr. Lynes grows extremely well, though a general collection of Japanese, incurved and others are also cultivated with extreme care and more than ordinary success. The Pompons are, however, a speciality, and seem to be even finer than usual this season. Pyramids, dwarfs, and standards are all represented by neat freely-grown plants, the standards being particularly notable, as they are not formally trained and tied down to a wire trellis as they are often seen, but they are allowed to assume a natural form, only a few ties being employed to regulate the branches or prevent their being broken when the plants are outside. They are bearing a large number of promising buds, and some of the specimens will when these are fully expanded be "a mass of flowers." It is to be regretted that Pompons are not more generally cultivated for exhibition than is the case, for they make charming little specimens when grown as Mr. Lynes has them, they do not require one-fourth the labour that the rigid tied down plants necessitate, and they have a far more graceful appearance.

#### COOMBE LEIGH, KINGSTON HILL.

For many years Mr. Orchard has given most careful attention to the cultivation of Chrysanthemums, and he bears the well-merited reputation of being one of the most intelligent and observant growers around London. He has always been a strong advocate for the cutting-down system, and his success has been amply sufficient to support his views and statements. This year is no exception to the rule, for he has blooms of fine exhibition quality upon plants in many instances not exceeding 2½ feet high, and in no case do they exceed 5½ feet. Plants of the former size well clothed with foliage down to the rim of the pot are extremely beautiful, and when they bear blooms of a size and substance more than ordinarily good they are additionally remarkable.

From two to half a dozen flowers are allowed on these dwarf plants, and a few more in the case of the free-flowering Japanese; but the blooms are all of excellent quality, good in substance, clean, bright, and in the right stage of forwardness. When these are arranged to form a group in the handsome conservatory they will have a beautiful effect fully equal to displays of a similar character provided by Mr. Orchard in previous years. All the best varieties are grown, including many novelties, which will, however, be referred to in another issue. It should be added that these plants are cut down the first or second week in June, some being cut to within 3 inches of the soil, and others up to a foot or 18 inches, the exact time and height of cutting requiring some knowledge of the peculiarities of the different varieties.

Near to Coombe Leigh is Warren House, the residence of Lord Wolverton, and there the experienced gardener, Mr. Woodgate, has a number of well-grown Chrysanthemums, which are bearing buds of great promise. They are mostly tall, but the blossoms are of such substance and colour that it is evident they have received the most careful and considerate treatment. At Anglesea House, Surbiton, Mr. Hinnell has also a collection of great merit, and some of his blooms will undoubtedly take a foremost position at local or other shows.—L. CASTLE.



THE awards of the Jury at the International Health Exhibition, South Kensington, have been announced, and we find that the following medals have been awarded for the COLLECTIONS OF SEEDS. The gold medal to Messrs. J. Carter & Co., High Holborn; and silver medals to Messrs. Sutton & Sons, Reading; Wheeler & Son, Gloucester; and E. Webb & Sons, Stourbridge.



— THE following are the arrangements of the ROYAL BOTANIC SOCIETY for 1885 :—Spring Exhibitions, Wednesdays, March 25th, April 22nd. Summer Exhibitions, Wednesdays, May 20th, June 17th. Evening Fête, Wednesday, July 1st, 8 to 12 P.M. Special Exhibition, American plants, by Mr. Anthony Waterer, Knap Hill Surrey, daily during June. Promenades every Wednesday, from May 6th to July 29th, excepting May 20th, June 17th, and July 1st. Lectures, at 4 P.M., Fridays, May 1st to June 19th. General Meetings, for election of new Fellows, &c., Saturdays at 3.45 ; January 10th and 24th, February 14th and 28th, March 14th and 28th, April 11th and 25th, May 9th and 23rd, June 13th and 27th, July 11th and 25th, November 14th and 28th, December 12th. Anniversary, Monday, August 10th, at 1 P.M.

— MR. PETTIGREW has sent us a box of GRAPES FROM THE VINEYARD AT CASTLE COCH as a fair average sample of the crop now being gathered, which is by far the finest the Vines have produced. The fruit is in small dense clusters, the largest berries three-quarters of an inch in diameter, the majority smaller. It is fairly coloured and sufficiently ripe for its purpose, and several hogsheads of wine will be made.

— WE are informed that the CARPET BED figured on page 378 last week was the production of Mr. John Gibson, a beautiful basket bed near it having been designed by Miss Grant. These beds were equally creditable to the respective originators of them.

— WE are desired to state that the LAMBETH AMATEUR CHRYS-ANTHEMUM SOCIETY will hold their annual Exhibition on November 11th and 12th in the Hawkstone Hall, Westminster Road, S.E., a much more commodious building than the hall in the Borough Road, where the Shows have hitherto been held. It is expected that the Exhibition this season will be the best the Society has ever had.

— THE WESTERN CHRYSANTHEMUM SOCIETY'S SHOW will be held at Plymouth on the 18th and 19th November. A pleasant feature of the schedule is a prominent list of special prizes contributed by Members of Parliament and others, who thus give practical encouragement to the directorate of the Society in promoting superior cultivation in this district.

— MR. THOMAS CHRISTY has sent us a specimen of Jerusalem Artichoke which flowered very freely at Sydenham this year in Mr. Drakeford's gardens. This is the result of the hot dry summer, as it is only in such seasons as the one now closing that the plants flower freely in this country.

— PELARGONIUM ROYALTY.—"S. C." writes:—This hybrid or semi-Nosegay variety is well worth attention either for pot culture or bedding-out. I have it for both purposes and like it immensely. The colour (crimson) is grand, the truss large, and the single pips the same. The habit is good, rather inclined to be spreading.

— NATIONAL CHRYSANTHEMUM SOCIETY.—A general meeting of this Society was held on Wednesday, the 22nd inst., at the Four Swans, Bishopsgate Street. Thirty-seven members were present, and some important business was transacted. Applications had been made by several local societies wishing to become affiliated to the National Society, and after a full discussion of the matter the following resolution was passed :—"That local societies be affiliated with this on the following terms :—Subscribers of £1 1s. to be entitled to one bronze medal, subscribers of £2 2s. to be entitled to one silver medal, subscribers of £5 5s. to be entitled to two bronze and two silver medals. Each medal to be accompanied by one of the Society's certificates. All publications to be charged cost price. Every society in affiliation to be allowed to send one representative to serve on the General Committee.

— MESSRS. H. CANNELL & SONS, Swanley, sent a stand of new JAPANESE CHRYSANTHEMUMS, two of which were certificated—namely, Brise du Matin, with fluted recurved florets of a neat, delicate, silvery pink colour, very pretty and distinct, and Mons. Moussillac, rich crimson, golden on the under side of the florets.

— POISONING BY YEW BERRIES.—In the town of Gravesend there died recently a child, whose death, after examination of the stomach, was attributed to his having eaten freely of Yew berries. Supposing there is no mistake in the facts of the case it is certainly of interest, because the Yew as a shrub or hedge is found in many gardens and parks ; moreover, some discussion upon the subject took place in scientific journals several years ago. The general opinion expressed then was that the berries were innocent to man and animals, although the latter had suffered from

browsing upon the foliage. It may be, however, that the seeds of the Yew are harmful, but the pulp of the berries harmless.

— KEROSENE AS AN INSECT-KILLER.—It is maintained by Mr. R. McLachlan, F.R.S., that the most effective of all insecticides for fruit trees is "kerosene butter" diluted with water to the extent of from twelve to twenty times its bulk. This butter is prepared as follows :—Pure kerosene, 1 gallon ; condensed milk, 1½ pint ; water, 3 pints. The milk and water are mixed, the oil added, and the compound churned till it forms a butter. The insecticide is applied by washing or syringing as in the case of similar compounds. But seeing this remedy must be kept in constant agitation while using, or else the kerosene rises to the surface, and that the butter needs the churning process, I am inclined to think its practical worth is overrated.—ENTOMOLOGIST.

— STRAWBERRY-EATING BEETLES.—Several curious instances have been published during the last two or three years of beetles belonging to the carnivorous group devouring the ripe fruit of the Strawberry. A garden near Tonbridge, as stated in the *Entomologist*, suffered from the attacks of a beetle this season, and, on examination, the foe of the Strawberries turned out to be *Pterostichus melanarius*, hitherto regarded as a useful species simply, because it preys upon less insects, small slugs, and centipedes. This gardener's plan for diminishing their numbers was to make little holes in the ground about their haunts, by which he trapped scores of them.

— THROUGH some mistake on the part of the post-office or somebody else copies of the "GARDENING WORLD" did not reach us until last Saturday. We have had the best possible evidence of late of the extraordinary increase in the number of readers of gardening literature, and we hope the world is wide enough for all the horticultural papers to flourish. Our young contemporary is conducted by Mr. B. Wynne. His paper is good in every way—just such a production as we should expect from him, and we do not know that we can bestow on it a greater, or better merited, compliment than by describing it as a cheap form of the *Gardeners' Chronicle*, in the preparation of which Mr. Wynne has had such a large share for a number of years.

— NEPENTHES.—"W. K. W." writes:—"In the East India house at Westbrook, Sheffield, are seven very fine and large plants of *Nepenthes*—viz, three of *N. Rafflesiana*, three of *N. Hookeri*, and one of *N. intermedia*. They are all in robust health, and carrying great numbers of fine-coloured and large pitchers. The largest plant of *N. Hookeri* is about 4 feet through, and is carrying about fifty pitchers. They are growing in ordinary teak baskets, each about 12 inches square—rather a small root space for such large and vigorous specimens. Mr. Pidsley, the gardener, called my attention to numerous pitchers containing cockroaches in various stages of decomposition floating in the fluid contained in greater or less quantity in nearly all the pitchers."

— CLEMATIS-FLOWERED DAHLIAS.—E. J. Lowe, Esq., Shirenewton Hall, Chepstow, sends us some blooms of a distinct race of single Dahlias he has succeeded in obtaining from a cross between *D. glabrata* and *D. Cervantesi* and Mr. Moore's type. They partake very much of the *D. glabrata* form and habit, but the blooms are very graceful with spreading star-like florets, with a zone of a different colour in the centre, the outer portion of the blooms being lighter, as for instance there are several with a yellow ring in the centre and the outer portion of the florets is pure white, some are scarlet fading to pale rose and other similar gradations. They are unquestionably an acquisition, very distinct and extremely elegant.

— TITS AND CATERPILLARS.—Mr. J. Hiam, Astwood Bank, Worcestershire, writes :—"As no one has replied to your suggestion at present, allow me to say that the only birds that I have found destroying the caterpillars on Cabbages, &c., are the large tits (*Parus major*). I have watched them carry off hundreds into the trees to pull to pieces, particularly this season. It is rare to miss them taking their breakfasts from a bed of various "green stuff" near my bedroom window. They roost in my old boots hung in the fruit trees, and not unfrequently find themselves the observed of all observers at natural history lectures."

— THE WAKEFIELD PAXTON SOCIETY.—On Saturday, the 18th inst., this Society held a meeting of considerable importance. About twenty delegates from the gardening societies of Sheffield (two societies), Leeds, Barnsley, and Rotherham, assembled at the invitation of the Paxton Society, and after a lengthy discussion, in the course of which some good ideas were thrown out with respect to raising the position of



these organisations, resolutions were passed that a union of the gardening societies of Yorkshire should be formed, to be called the "Yorkshire Union of Horticultural Societies," and a Committee of the Paxton Societies were asked to form a code of rules for the approval of the Paxton Societies joining. This meeting was held in the afternoon previous to the ordinary weekly meeting of the Society, at which the delegates and others had the pleasure of hearing a lecture from the Rev. J. W. C. Hughes of Wragby on "The Flora of the Ionian Isles," which from the lecturer's familiarity with his subject, gained by a long residence as Her Majesty's Chaplain in those islands, proved most instructive and a fitting conclusion to the important meeting of the afternoon.

— At the recent marriage of the Marquis of Stafford, M.P., with Lady Millicent St. Clair Erskine, at which the Prince and Princess of Wales and Princess Christian attended, Messrs. John Laing & Co. had the honour of being entrusted with the floral decoration of the ceremony. The flowers chiefly used were Orchids, Eucharis, Gardenias, Stephanotis, Chrysanthemums, and others of the choicest kinds. Messrs. Laing were highly complimented on their tasteful displays, which gave great satisfaction.

— THE following GARDENING APPOINTMENT has been made by Messrs. John Laing & Co., Forest Hill, London, E.C. :—Mr. Henry Goff, late gardener at A. Nichols', Esq., Cambridge House, Blackheath, as head gardener to Mrs. Grinling, Harrow Weald House, Stanmore, Middlesex.

— THE *Cornish Telegraph* of October 23rd publishes the following letter from Messrs. Marshall, Stevens & Co., of Liverpool, on Early Potatoes in Jersey :—"Mr. Philip Barbier, the notary public of Jersey, has sent to us some very carefully prepared statistics of the shipment of new Potatoes from the island, and we think a few extracts will be useful to your readers in West Cornwall." There were shipped from Jersey to England between June 4th and July 21st, 1883, 36,300 tons of new Potatoes, and this record so remarkable as the products of a little island, only something like ten miles by seven, has been beaten during the past season (1884) by the extraordinary shipments between May 14th and July 23rd of 53,655 tons, estimated to have realised about £375,000. In addition to the above quantities, about one-eighth of the crop is retained in the island for seed, and other shipments (comparatively small) are made before and after the dates given. The largest portion of the crop is consumed in the manufacturing districts of the north of England, and the trade is entirely dependent upon and has grown with the facilities of transport given by competing railway and steamship companies. The Cornish market gardeners feeling with the Great Western Railway Company the result of the latter's mistaken policy, have in the past been unable to compete to advantage; but now that the monopoly of the Great Western Railway is broken up the Cornish market gardeners will next season send off a crop at least half as large as that of their Jersey competitors, increasing annually until the whole of the available acreage (which is probably twice that of Jersey) is cultivated."

— DAFFODIL JAMES DICKSON OR SIR WATKIN.—Mr. William George, Brook Street, Chester, writes in the *Manchester City News* as follows respecting this notorious Daffodil :—"In reply to Mr. James Percival respecting the Daffodil Sir Watkin or James Dickson, allow me to say that it is not a hybrid, but an old type of the Giant or Mountain Daffodil, improved in colour and substance under cultivation. The same type can be found in many old gardens through North and South Wales; also in its wild state in at least two counties, and has been known to exist there over forty years. The blooms have found their way into Manchester and London markets regularly for three or four years, and are the same which Mr. Brockbank alludes to. This is the way the old Foundling Daffey found its way before the public under a new name."

— THE Hertfordshire Natural History Society and Field Club will hold a CRYPTOGAMIC MEETING AND FUNGUS FORAY AT ST. ALBANS on Saturday afternoon, 1st November. Members will assemble at the London and North-western Railway station, St. Albans, at 2 P.M. Leave Euston at 10, Watford at 1.40. Walk along the lane nearly opposite the station to the Verulam Hills, then through the woods to King Harry Lane, and on this lane to the "Hollows." From the woods here enter Gorhambury Park, and return along the carriage-drive to the Lodge Gates near St. Michael's Church, and then by the "Water Walk" to the station for the 5.50 train to Watford. Members from Hertford may leave by the 1.25 train due at St. Albans at 2.17, joining the party in the woods of the Verulam Hills, and returning by the 5.38 train. Dr. M. C.

Cooke, M.A., A.L.S., and Mr. Worthington G. Smith, F.L.S., will accompany the members and name the species of fungi collected; and Dr. Braithwaite, F.L.S., will identify the mosses. The meeting will be under the direction of Mr. A. E. Gibbs. The first ordinary meeting of the session 1884-85 will be held at Watford on Tuesday, the 18th of November. The dates of the other ordinary meetings in West Herts, most of which will be held at Watford, are December 16th, January 20th, March 17th, and April 21st (the third Tuesdays in each month); and in East Herts, November 20th, December 18th, January 15th, February 19th, March 19th, and April 16th (the third Thursdays in each month). The anniversary meeting will be held at Watford on Tuesday, the 17th of February. Several bye-meetings, for microscopical study and other purposes, will also be held. Particulars will be announced as usual.

#### GASTROLOBIUM CALYGINUM.

AUSTRALIA has yielded to European cultivators numbers of handsome members of the great Pea family, and amongst the best must be included



Fig. 65.—*Gastrolobium calycinum*

the species represented in fig. 65. The flowers are large, of a rich orange colour, and when the plant is well grown they are produced most freely. Though, like other leguminous plants from that portion of the globe, *Gastrolobium calycinum* requires careful treatment, it is not difficult to obtain it in good condition. A compost of peat, light leafy loam, and sand, with well-drained pots, are the chief requisites in its culture, supplying water with great care when not growing freely.

The following is a brief description of the plant :—The branches are smooth; the leaves are opposite (or ternate), elliptic, somewhat keeled, glaucous, and terminated by a long pungent awn; at their base is a pair of spreading decurved spiny stipules. The flowers grow oppositely in terminal or axillary racemes, and are very large; the standard deep orange



with a yellow spot at the base margined with crimson; the wings and standard deep crimson; they grow from the axil of a large, obovate, membranous, inflated strongly-nerved bract, the nerve being extended into a recurved mucro; the calyx is very large, the upper lip much largest, bifid with very obtuse segments, the segments of the lower lip ovate acute.

This interesting plant was raised by Messrs. Henderson, from Mr. Drummond's Swan River seeds.

#### REVIEW OF BOOK.

*The Fruit Manual.* By ROBERT HOGG, LL.D., F.L.S. Fifth Edition No. 1.

A COPY of the fourth edition of this work is before me, brown-covered, and worn by constant use to almost a pack of cards. A copy of the fifth edition has just reached me, bound in green, as all books on gardening ought to be, spick and span, new and unsoiled as yet, more bulky than its predecessor of nine years since, and as its writer never uses an unnecessary word, there is in it a lot more useful information. As a comparison of the two books shows the progress in pomology, in addition to the difference between the volumes, it may be well to note how they differ.

Fourth edition has 598 pages, fifth edition has 759 pages, here is a gain of 161 pages in the whole book. The greatest addition is in the Apple portion. In the fourth edition only 161 pages are devoted to the different varieties, while in the fifth there are 249 pages on Apples—an increase of eighty-eight pages. But perhaps the gain is more seen in this way—Apples described in fourth edition 474, in the fifth 705—a gain of 131. The cider varieties are much more numerous, and as to additions many local kinds well deserving a place have now got it. A great many of our new friends hail from Herefordshire; others, for instance, from other counties, as Tom Putt from the West of England, a variety almost equal to Dumelow's Seedling. We have also alterations of names, the result of the Apple Congress of 1883. This is well, though I regret that Yorkshire Beauty no longer exists, not even under the name of Red Hawthornden, but is changed to Greenup's Pippin. As shoemaker Greenup has, I apprehend, been long in his grave, the Apple having been discovered in his garden at the end of the last century, he is "sticking to his last" home, and his ghost would not have been angry, rather pleased probably, had his Apple been known still as "Yorkshire Beauty." Accuracy no doubt is a great thing, but euphony has also its merits, particularly when a euphonic name is also a happily descriptive one. Barowsky has disappeared, and the Duchess of Oldenburgh alone is described. Loddington is a great gain to the book as to our gardens. A proper distinction is at last made between Winter Hawthornden, a most superior Apple, and the New Hawthornden, scarcely worth growing, a description being given of each, which was not done before. N.B.—Nurserymen beware, and send the proper fruit under the proper name in future, particularly in this instance. Peasgood's Nonesuch is in this edition described as like a very large and highly coloured Nonesuch, and not like a Blenheim Pippin; this, too, is a proper correction.

The explanations of the word "Pippin" by Dr. Hogg is very interesting. I wish he had given one of the word "Codlin," which I think means coddled, or covered up, or around—i.e., with paste, or suited to boil; from *calidus*, hot or boiled—hence an Apple suitable for cooking. The Doctor's description of Quoining is also a gain. Words thus explained, and their origin given, causes people to talk understandingly and not ignorantly. The explanation of the word "Reinette" is also interesting and new, and, more than that, sensible—"Renatus," renewed. This is better than the frog-belly theory. Among the new Apples of the book is Marriage-maker, a variety for which nurserymen will probably have frequent and large orders from mothers of large families of daughters. I should think that one result of this new edition, as it contains such accurately described and numerous cider Apples, will be an improvement in our cider orchards. But I must not omit to notice another great improvement in the Apple portion—I allude to Dr. Hogg's classification of Apples, for which I believe he received the gold medal of the Royal Horticultural Society.

Before Apples, as in the fourth edition, were described by their outsides, size, shape, colour, stalk, and eye, with one addition—flesh, its texture, colour, and taste; but by the Apple classification the Apples are also judged and classified by their insides. This knowledge is attained by making a longitudinal section of an Apple through the eye to the stalk. Thus the stamens, the tube, the carpels, and the sepals appear. In different Apples these appear differently, but in a certain number of Apples they are alike (if I rightly understand Dr. Hogg); and Apples which resemble each other are put in groups under certain headings. But, wisely remarks the Doctor:—"In this and every other classification of natural objects there are the usual difficulties to contend with. Nature refuses to be bound, and will not submit to be confined within the narrow limits that man would assign her. There is still the debateable ground to deal with where there are no definite boundaries." These are thoughtful and thought-producing words.

Although, therefore, the classification may be partial, or, at least, not universal in its application, it is a gain, and shows the orderliness of Nature, besides the marvellous power, so vast yet so minute, of the great Creator.

Before leaving the Apple portion of this fascinating book I would note that in addition to tests of the best Apples for different districts of England, and the best dessert and kitchen Apples arranged in their order of ripening, there are now added lists of the best cider Apples by great authorities in

their several counties—that for Herefordshire by Dr. Bull, for Devonshire by Mr. Veitch, for Somersetshire by Mr. Poynton of Taunton. One asks, I think not unnaturally, Why do not Englishmen universally drink this home-made wholesome liquor? To proceed to other portions of this work. The lists of Apricots and Cherries, particularly the former, have but few additions or alterations, as also Figs and Gooseberries. In regard to Grapes an increase of six pages, of Peaches five. Pine Apples are a new feature of this book, as they are not mentioned in the fourth edition, while here five pages are given to the description of their varieties and their order of ripening. One is almost sorry to read these words of Dr. Hogg on Pine Apples:—"Since the large importations of this fruit from the West Indies and the Azores the cultivation of the Pine Apple has fallen off in British gardens. As to the West Indies, their cultivation may at any time cease, as there the natives, since they ceased to be slaves, will not work; and the climate is such that Europeans cannot work. But from the Azores the supply can and will probably increase, as the climate is such that Europeans can both live and work there, and work well."

In regard to Plums the pages devoted to them are more than doubled, showing that this is a fruit which is a more certain crop, on a wall at any rate, than Peaches or Nectarines or Apricots. Raspberries are the same with two exceptions, Baumforth's Seedling and Lord Beaconsfield, which promise well. The Raspberry is a fruit hardly sufficiently appreciated. Now rarely we see at dessert a handsome dish of the two colours, yellow and red, and yet to my mind they look as well and taste as well as do black Grapes and white.

Nuts and Filberts have jumped up in the world, and have seven pages given to them instead of scarcely two. Strawberries have nineteen pages given to them instead of sixteen.

I now must pause and leave for another paper what perhaps may be called the second most important part of the book, that on Pears.—WILTSHIRE RECTOR.

#### ANEMONE HONORINE JOBERT.

FEW hardy border plants are deserving of more extended cultivation than this Anemone, as it comes at a time when most flowers are past their best, and continues for a long time throwing up its beautiful white flowers, which are about 3 inches in diameter, with a cluster of yellow stamens in the centre. I am surprised that this plant is not more extensively grown, as it is very easily propagated either by roots, buds, or division. If wanted in quantity the best way is to lift a plant from the border in autumn and cut its thick roots into lengths of about an inch, lay these on a piece of ground made level with a garden rake, place them about 4 inches apart, and cover with an inch depth of fine soil. In the spring these will come up thickly. They should be allowed to grow for one summer without removal, but in the autumn can be taken up and planted where required. They are very useful in pots for decoration, and the flowers from plants grown under glass are valuable for cutting.—A. ANDERSON, *Lea Wood*.

#### NOTTS HORTICULTURAL AND BOTANICAL SOCIETY.

A GENERAL meeting of the members of this Society was held at the Mechanics' Institution on October 22nd, when there was a very large attendance of members and others interested in horticulture. Professor Blake of the University College, Nottingham, occupied the chair, and Mr. C. L. Rothera, B.A., contributed a very interesting paper on "Cross Fertilisation of Plants by Insects," which was very ably described by the aid of natural specimens and diagrams of many well-known flowers. The lecturer pointed out how pleased he was to meet with so many practical gardeners. Theory was very well, but they must have practice. A very interesting discussion followed the reading of the paper, in which Mr. J. R. Pearson, Mr. Walker, and others took part, the latter quoting Darwin, Brewer, Meehan, and others to show that too much had been claimed for the work of insects in plant-fertilisation. At the conclusion of the discussion, which was of a very lengthened description, a very hearty vote of thanks was accorded to Mr. Rothera for his paper, and the usual vote to the Chairman concluded the meeting. The centre of the room was well filled with many excellent specimens of plants, cut flowers, and fruit, which was fully described by those who contributed them. Mr. N. German, gardener to T. B. Cutts, Esq., Malvern House, Nottingham, had some pretty examples of flowering Orchids, conspicuous amongst them being *Oncidium crispum*, *Oncidium prætexidum*, *Oncidium ornithorhynchum* splendidly flowered, and a small plant of *Cypripedium Spicerianum*. Mr. German is one of our best local orchidists, and generally contributes some of his choicest bits at our meetings. S. Thacker, Esq., one of the Vice-Presidents of the Society, very rarely attends the meetings without being accompanied by some excellent specimens of his numerous collection of Cattleyas. Mr. Meadows, gardener to C. J. Cox, Esq., Basford, contributed a good pan of *Pleione lagenaria*, and some very fine cut blooms of *Dipladenia Brearleyana*. J. W. Lewis, Esq., Hardwicke House, Nottingham, contributed sixteen fine examples of cut stove and greenhouse flowers. Mr. Anderson, gardener to H. R. Clifton, Esq., Clifton Hall, sent an extraordinary fine dish of Duchesse d'Orleans Pear, which was much admired. He had also a seedling white Grape which did not appear to possess any special merit; but he had a single seedling Dahlia of great promise, being of a bright orange scarlet deeply banded with a rich yellow. Messrs. J. R. Pearson of Chilwell Nurseries near Nottingham sent twenty varieties of Apples, amongst which was a finely coloured local variety called Beautiful Stripe.

#### APPLES IN WORCESTERSHIRE—CANKER.

THE Apple crop varies considerably in this district, but on the whole is decidedly what is known as a "Blenheim year." Every tree appears to



be well laden, although I have seen heavier crops on individual trees. Speaking to a head gardener a short time ago on the subject, he told me he estimated the crop of one tree at thirty-five pots, and had known it bear forty. I was through some orchards a few days ago noted for Blenheim Pippins, and a grander sight I do not remember; although the orchards are small I estimated the crop at 250 pots. Cider fruit is not as good as last year, neither are the crops on bushes, cordons, or pyramids in gardens as good. I believe most of the varieties mentioned by "J. A. W." (page 285), are grown hereabout, but Cobham, which we used to call Orange Pearmain, and I should like to know if it is the same, has been my best tree of fruit. Although I cannot boast of 18 ozs. each, I have a good crop varying from 8 to 10 ozs.—not a bad size for a dumpling. Old Manx Codlin is laden to the ground like an umbrella.

But the question of canker is again introduced, that is why I write. The subject was so thoroughly threshed out here last winter that I was ashamed to see my name connected with it. I thought about it, talked

### A TOMATO PEST.

I SEND you some leaves of Tomato plants which are infested by a small white fly. When first I saw this minute insect I was not aware of the injury it can cause, but at last I discovered it. This fly has become a plague. In spite of frequent fumigation it has entirely destroyed a large greenhouseful of Tomatoes, and I have been obliged to pull up the plants—the leaves and fruit, otherwise perfectly healthy, became covered with a black sticky substance stopping their growth. When the plants were touched clouds of flies rose from them, and I think millions must have been destroyed by the fumigation. I have another greenhouse now suffering from them, and I am nearly at my wit's end to know how to extirpate them. Not only do I find them in the greenhouse, but they are in multitudes on an Apple tree trained to a wall and on Roses and other plants in the open air. The leaves I send are after fumigation with tobacco. I do not know whether any other person has suffered in



Fig. 66.—MR. SMEE'S ORCHIDS IN THE OPEN AIR (see page 398)

about it, wrote about it, and I think dreamt about it, until I seemed to have canker on the brain from the opposition my views met with; Mr. Harrison Weir, I believe, being the only writer who helped me to battle with the fixed opinions in the gardening press handed down from generation to generation without investigation.

I do not think anyone who has not had the advantages of a microscopical examination of infected or infested pieces of wood is in a position to judge the cause, and even then skill is required in the manipulation to bring out the effect. I have not time to deal with each theory advocated separately, but will say that I am convinced that insects and not heavy soil and about half a dozen other theories are the chief cause of canker, if not the only cause. On page 206 of the Journal, March 13th, 1884, speaking of canker "Ritchie" says, "The garden soil was decidedly heavy, with a wet subsoil, &c., and yet canker was unknown." When doctors differ who is to decide?—J. HIAM, *Astwood Bank, Worcestershire*.

[A Worcestershire Pot is 80 lbs., including the hamper, or 72 lbs. nett fruit.]

the same way. I have never had them in my garden until this year. —T. S. M.

[Knowing that Mr. Iggulden had been troubled with the same enemy we submitted the above letter to him, and append his comments thereon as follow:—"Probably 90 per cent. of growers of Tomatoes under glass have had to contend with *Aleyrodes vaporariorum*, this being the name of the pest which has proved so troublesome to "T. S. M." Unfortunately the insects do not confine themselves exclusively to Tomatoes, and several gardeners have discontinued the house culture of Tomatoes owing to these plants being almost certain to become affected by the *Aleyrodes*, and from which the pest spreads in all directions. The Tomato being a woolly-leaved plant, sponging or washing with an insecticide is most prejudicial to them. We have tried various remedies, but find that fumigation with tobacco paper the most simple and effective. One fumigation will destroy nearly all the insects in a winged state, but does not in the least affect the myriads of eggs attached to the under sides of the leaves. Great numbers of flies are hatched daily, and are soon old enough to carry on the work of increase. The only plan then to be



effective must be very frequent fumigations—say three times a week, till they are exterminated. Heavy fumigations are not necessary, but they must be frequent, and in the long run the outlay in tobacco paper will be considered money well spent. Frost will destroy those insects on outdoor plants.”]

ORCHIDS IN THE OPEN AIR.

It will be remembered by our numerous readers who are interested in Orchids that Mr. Smee tried the experiment last year of placing a large number of Orchids in the open air, and permitted them to remain there for some two or three months. Encouraged by the results of the experiment, a much larger number of plants have been placed outside this year. These plants we inspected early in the present month, when many were still outside and some flowering, while those that had just been housed were in the finest possible condition, with thick dark green leathery leaves and strong bronzy looking pseudo-bulbs. Several were flowering, the most noticeable being Dendrobium Wardianum, the growths of which were covered with flowers as if in spring.

The plants, except Dendrobiums, which were in the full sun, were arranged on planks just above the water-courses that intersect the garden, and which are quite canopied with the foliage of overhanging trees and shrubs. The position is thus peculiarly favourable, and similar advantages are present in few gardens; therefore, successful as Mr. Smee's experiments have undoubtedly been, the whole circumstances should be remembered, as it is not to be expected that Orchids would do equally well in the open air in higher and drier situations. The photographic group, fig. 66, represents the Orchids in the garden in question. The scene, it will be admitted, is a tropical one; and the following careful record has been supplied by Mr. George Cummins, the able gardener at Hackbridge:—

“These have done better during the past summer, doubtless on account of more sun and warmer weather than last year. The heavy dews at night during August and September evidently suited them well. Some mornings the leaves had the appearance of being syringed. During those months the plants required very little water or attention. About 1000 plants have been treated in this manner, not one having shown any dislike to the open air, while the majority have enjoyed it and made far more satisfactory growth than the same varieties have done in the houses.

“The Dendrobiums growing in pots were placed on a platform 5 feet wide over a running stream in the full sun on August 11th. Most of them had made an early growth, and when taken in one was in bloom and others showing well. This year many of this family will be in bloom before Christmas, which have previously bloomed in spring.

BLOOMED IN OPEN AIR.

Aeropera Loddigesii.  
Dendrobium chrysanthum.  
” Wardianum.  
Lycaste Smeeana.  
Masdevallia maculata.  
Maxillaria grandiflora.  
Odontoglossum Alexandræ.  
” cordatum.  
” Lindleyanum.  
” Rossi varieties.  
Oncidium dasytyle.  
Pleione lagenaria.

SHOWING BLOOM WHEN TAKEN IN.

Cœlogyne ocellata.  
Cypripedium insigne.  
Dendrobium crassinode.  
” heterocarpum.  
” nobile.  
” Wardianum.  
Epidendrum eveetum.  
Lælia albida.  
” autumnalis.  
Lycaste Skinnerii.  
” Deppei.  
Odontoglossum bictoniense.  
” membranaceum.  
” Pescatorei.  
” Alexandræ.  
Oncidium crispum.  
” Forbesii.  
” macranthum.  
” serratum.  
” verrucosum.  
Pleione maculata.  
Trieosma suavis.  
Vanda cœrulea.

TABULATED RECORD OF EXPERIMENTS.

Date of Putting out.	Name of Plants.	Date of housing.	Remarks.
July 18	Aeropera Loddigesii ... ..	Oct. 6	Very strong, producing many flowers.
5	Ada aurantiaca ... ..	3	Dark green foliage.
Aug. 4	Angræcum falcatum ... ..	4	Rooted freely.
July 3	Barkeria Skinnerii... ..	3	{ Sickly when placed out, but made a quantity of fleshy roots in the open [air.
3	speetabilis... ..	3	Made large pseudo-bulbs.
5	Brassia verrucosa ... ..	3	Remained at rest.
5	Cattleya Acklandiæ ... ..	3	Making strong growth.
5	citrina ... ..	3	Equal to those in houses.
5	Walkeriana ... ..	3	Larger growth than last year.
Aug. 11	Chysis aurea ... ..	6	Good growth, made several leaves.
July 18	Cœlogyne cristata ... ..	6	Placed in full sun and rested well.
5	ocellata ... ..	6	” ” ” ”
5	Cypripedium insigne ... ..	6	At rest all the time.
Aug. 11	Cyrtopodium Andersonii ... ..	1	Completed good growth.
11	punctatum ... ..	1	Ripened well in full sun.
11	Dendrobium aggregatum majus ... ..	Sept. 27	” ” ” ”
11	bigibbum ... ..	27	Commenced growth after flowering.
13	Boxallii ... ..	27	Well ripened.
13	ealecolus ... ..	Oct. 1	Showing flower.
16	Cambridgeanum ... ..	1	Growing strongly.
16	chrysanthum ... ..	Sept. 27	Fine growths, well ripened.
16	chrysotoxum ... ..	27	Very long pseudo-bulbs, well ripened.
11	clavatum ... ..	27	Strong.
11	crassinode... ..	27	Strong and well ripened.
11	crystallinum ... ..	27	Making strong growth.
11	Dalhousianum... ..	Oct. 1	Growing strongly.
11	densiflorum ... ..	1	Rested.
June 18	Devonianum ... ..	Sept. 27	Enjoys cool night temperature.
Aug. 11	fimbriatum ... ..	27	Growing well.
11	Findleyanum ... ..	Oct. 1	Thick pseudo-bulbs, showing bloom.
11	formosum ... ..	1	Well ripened.
11	Freemanni ... ..	1	Extra strong, lost nearly all leaves.
July 18	luteolum ... ..	1	Well ripened.
18	Jamesianum ... ..	Sept. 27	” ” ” ”
Aug. 11	maerophyllum... ..	27	Very strong and blooming.
13	moschatum ... ..	Oct. 4	Made a flower spike (damped off).
June 16	nobile... ..	Sept. 30	Making spikes and strong growth.
Aug. 16	” cœrulescens ... ..	30	” ” ” ”
13	Paxtoni ... ..	30	Large pseudo-bulbs.
13	Pierardi ... ..	30	Resting all the time.
June 18	primulinum ... ..	Oct. 4	Growing freely.
Aug. 13	Schroederi... ..	4	Made good growth and showing bloom.
June 18	suavissimum ... ..	4	” ” ” ”
Aug. 13	thyrsiflorum ... ..	4	Large bulbs and bloomed in open.
13	transparens ... ..	1	Made a number of leaves.
June 16	Wardianum ... ..	1	” ” ” ”
July 5	Disa grandiflora ... ..	1	” ” ” ”
Aug. 11	Epidendrum eveetum ... ..	4	Large bulbs and leaves; bloomed.
July 5	Lælia albida ... ..	4	Made satisfactory growth.
5	autumnalis ... ..	4	” ” ” ”
5	majalis ... ..	4	Best varieties were potted and placed out last; made root and large broad leaves.
Ang. 14	purpurata ... ..	6	Good growth; showing flower.
July 5	Lycaste aromatica ... ..	4	The largest bulbs they have yet made.
5	Deppei ... ..	4	Growing well.
5	Skinnerii ... ..	4	Growing well and flowering.
5	Smeeana ... ..	4	Produced immense pseudo-bulbs.
5	Masdevallia coriacea ... ..	4	Quite at home.
5	ignea ... ..	4	” ” ” ”
5	maculata ... ..	4	” ” ” ”
5	Maxillaria grandiflora ... ..	4	” ” ” ”
5	Mesospinidium sanguineum..	4	Large pseudo-bulbs.
5	vulcanicum ... ..	3	” ” ” ”
Ju. 18 )	Odontoglossum Alexandræ... ..	3	Growing very freely.
Aug 13 )		3	” ” ” ”
Aug. 13	bictoniense ... ..	3	” ” ” ”
July 5	Cervantesi ... ..	3	” ” ” ”
	cirrhosum... ..	3	” ” ” ”
	cordatum ... ..	3	” ” ” ”
	coronarium ... ..	3	” ” ” ”
	Ehrenbergi ... ..	3	” ” ” ”
	gloriosum ... ..	3	” ” ” ”
	Hallii... ..	3	” ” ” ”
	hystrix ... ..	3	” ” ” ”
	Lindleyanum ... ..	3	” ” ” ”
	membranaceum ... ..	3	” ” ” ”
	nebulosum ... ..	3	” ” ” ”
	Pescatorei... ..	3	” ” ” ”
	Oerstedii ... ..	3	” ” ” ”
	ramosissimum... ..	3	” ” ” ”
	roscum ... ..	3	” ” ” ”
	Rossi majus ... ..	3	” ” ” ”
	sceptrum ... ..	3	” ” ” ”
	triumphans ... ..	3	” ” ” ”
	Oncidium Barkerii... ..	2	” ” ” ”
	concolor ... ..	2	” ” ” ”
	crispum ... ..	2	Made very large pseudo-bulbs; blooming.
	eurum ... ..	2	At home.
	dasytyle ... ..	2	” ” ” ”



## TABULATED RECORD OF EXPERIMENTS.—(Continued.)

Date of Putting out.	Name of Plants.	Date of housing.	Remarks.
	Oncidium Forbesii ... ..	Oct. 2	Similar growth to O. crispum.
	macranthum ... ..	2	Made good growth and long spike.
	Marshallianum ... ..	2	Growing well.
Aug. 16	serratum ... ..	2	Equal to O. macranthum.
July 5	stelligerum ... ..	2	Growing freely.
5	verrucosum ... ..	2	Made good growth and branching spikes.
5	Pilumna fragrans ... ..	1	Made good growth; showing flower.
Aug. 4	Pleione lagenaria ... ..	1	Ripened well and bloomed.
4	maculata ... ..	1	Ripened well; showing flower.
4	Reichenbachiana ... ..	1	Ripened well.
July 5	Sophronis grandiflora ... ..	2	Plenty of fine growth.
Aug. 4	Stanhopea trigina ... ..	2	Commenced growing.
July 31	Thunia alba ... ..	1	Well ripened in full sun.
31	Marshalli ... ..	1	" " "
18	Trichopilia suavis ... ..	1	Broad leaves and very healthy.
18	Trichosma suavis ... ..	3	Good growth; showing well for flower.
Aug. 4	Vanda cærulea ... ..	6	Made leaves and flower spike.
4	cærulescens ... ..	6	Healthy roots; foliage good colour.
4	Denisoniana ... ..	2	" " " " "
4	Roxburghii ... ..	2	" " " " "
4	Zygopetalum Mackayi ... ..	2	Made a quantity of "small" growths.

## DENDROBIUMS THAT HAVE RIPENED BEST IN THE OPEN AIR.

D. densiflorum.	D. nobile cærulescens.
D. Devonianum.	D. Pierardii.
D. Cambridgeanum.	D. primulinum.
D. chrysanthum.	D. Schroederii.
D. crassinode.	D. suavisimum.
D. Findleyanum.	D. thyrsiflorum.
D. heterocarpum.	D. Wardianum.
D. lituiflorum.	D. Wallichianum.
D. nobile.	D. sanguinolentum.

## ORCHIDS NOW FLOWERING IN THE HOUSES.

Brassia maculata.	Miltonia Clowesii.
Burlingtonia granadense.	" Regnelli superba.
Cælia macrostachya.	Odontoglossum Alexandræ.
Cælogyne speciosa.	" " bictoniense superbum.
Cypripedium Harrisianum.	" " cordatum.
" Spicerianum.	" " grande.
Dendrobium Dearii.	Oncidium albo-purpureum.
" crystallinum.	" Harrisoni.
" Wardianum.	" incurvum.
Houlletia chrysantha.	" Jonesianum.
Helcia sanguinolenta.	" tigrinum.
Lælia Dayana.	" trulliferum.
" marginata.	Pleione Lagenaria.
" autumnalis atro-rubens.	Phalænopsis Looii.
" præstans.	" violacea.
" Perrinii.	Stanhopea Wardi.
Lycaste Skinneri.	Trichopilia tortilis.
" Smeena.	Vanda cærulea.
Masdevallia amabilis.	" limbata.
" erythrochæta.	Zygopetalum Gautieri.
" Harryana.	" Mackayi superbum.
" Normani.	" maxillare.
Maxillaria grandiflora.	

As we have inspected the plants we can testify that there is not the slightest exaggeration in Mr. Cummins' remarks. He has truthfully represented the actual condition of the plants after their sojourn in the open air, and this full and fair experiment is both interesting and suggestive.

## ROYAL HORTICULTURAL SOCIETY.

## FRUIT AND VEGETABLE SHOW.—OCT. 28TH, 29TH, 30TH.

THE last of the series of eight Fruit and Vegetable Shows held during the present year in the conservatory of the Royal Horticultural Society, South Kensington, terminates to-day (Thursday), and brings to a conclusion the most extensive and successful exhibitions of the kind ever seen in the metropolis in one season. The liberal prizes offered have induced competitors to come from all districts of the country, and the displays thus produced may be taken as fairly representative of the state of fruit and vegetable culture in Great Britain. The evidence so afforded has most satisfactorily indicated that, so far from there being any decadence in the skill of cultivators, a decided general advance is being made, competition is becoming keener, and the merits of garden produce more equalised. It is also evident that the interest excited by these shows must give a stimulus to fruit and vegetable culture that will be felt for a considerable time, and the substantial sum liberally given by the Committee of the Health Exhibition has been most judiciously expended in encouraging those important branches of horticulture. The management throughout has been all that could be desired, the arrangements have worked as smoothly as possible under the superintendence of Mr. A. F. Barron, with the aid of his willing assistants; and the Judges have performed their difficult duties with the greatest care,

and it can only be hoped that another season a similar series may be as well organised and as successfully carried out.

## APPLES.

A few months ago it would have been thought impossible this season to obtain such a display of Apples as that provided at Kensington this week, and it is indeed a matter for surprise that in such an unfavourable year, following one of unusual abundance, so many handsome fruits could be staged. There are many fruit-rooms, now nearly empty, which last season could not accommodate the large stores afforded by the trees, and the array of over 1700 dishes at this Show, therefore, far exceeded the most sanguine expectations earlier in the season. It is true that nearly half this number was contributed by nurserymen, either in the classes or not for competition, and they of course have exceptional facilities for making up large collections, but the finest fruits were entered in the amateurs' classes, and the latter exhibits were good throughout. Only one collection was staged in the class for Apples from Scotland and one from America, but neither of these were of great merit, and there was no contribution from the Channel Islands.

**Collections.**—The principal class was that for nurserymen, the collection not to exceed 100 varieties, in which there were five competitors, each staging about 100 dishes. After a lengthened consideration the Judges awarded the premier honours to Messrs. H. Lane and Son, Great Berkhamstead, who had some very fine and mostly well-coloured samples. Particularly good were the following:—Lord Derby, Pott's Seedling, Dumelow's Seedling, Worcester Pearmain, Hollandbury, King of the Pippins, Lord Suffield, Blenheim Pippin, Annie Elizabeth, Lord Lennox, Round Winter Nonesuch, Lord Grosvenor, Mère de Ménage, Warner's King, Cellini, Stirling Castle, Emperor Alexander, Prince Albert, Loddington, Calville Rouge, Catshead, Keswick Codlin, Lady Henniker, Nanny Apple, Royal Russet, La Fameuse, Peasgood's Nonesuch, Norfolk Beefing, Wormsley Pippin, Ribston Pippin, Nonesuch, Ecklinville, Waltham Abbey, Blenheim Pippin, and Grenadier. The second position was accorded to Messrs. G. & J. Lane, St. Mary's Cray, who also had a fine collection, including some very finely coloured samples. The fruits were also tastefully arranged upon Plane Tree leaves and Fern fronds, which greatly improved the appearance of the collection generally. Very notable were the following varieties:—Hollandbury, Farley Pippin, Red Streak, Mère de Ménage, Blenheim Pippin, Fearn's Pippin, Lady Henniker, Winter Queening, English Codlin, Winter Nonesuch, Golden Renet, Hoary Morning, Sam Young, Col. Vaughan, Flower of Kent, Striped Beefing, London Pippin, Warner's King, Beauty of Kent, and Dumelow's Seedling. Messrs. G. Bunyard & Co., Maidstone, secured the third place with good highly coloured fruits, including beautiful samples of the following:—Lord Derby, Queen Caroline, Cellini, Red Hawthorn-den, Cox's Orange, Annie Elizabeth, Duchess's Favourite, Belle Dubois, Peasgood's Nonesuch, Loddington, The Queen, Mère de Ménage, Golden Noble, Melon Apple, Calville Malingre, Blenheim Pippin, and Cox's Pomona. Messrs. J. C. Wheeler & Sons, Gloucester, and Messrs. J. Cheal and Sons, Crawley, had similar collections, the last-named being but few points behind the third-prize exhibit. All were very close.

Next in importance was the amateur class for a collection not exceeding fifty varieties, which brought nine exhibitors. Roger Leigh, Esq., Barham Court, Maidstone (garden r, Mr. Haycock), was again in the foremost position with the handsome fruits which have been repeatedly praised this season. The best of the varieties were Nelson Codlin, Cornish Gilliflower, Royal Russet, Reinette de Canada, Calville Blanche, Bess Pool, Scarlet Nonpareil, Court Pendu Plat, Hanwell Souring, Washington, Lincoln Pippin, Cornish Aromatic, King of the Pippins, Peasgood's Nonesuch, very handsome; Calville Malingre, fine; Melon Apple, Reinette de Caux, Belle Dubois, Cox's Pomona, Keddeston Pippin, Beauty of Kent, Brownlee's Russet, Aromatic Improved, Dumelow's Seedling, Calville Rouge, Lodge-more Nonpareil, Cox's Orange, Margil, Belle Josephine, Blenheim Pippin, Lady Apple, Mannington's Pearmain, Wyken Pippin, Warner's King, Claygate Pearmain, Dr. Harvey, Mother Apple, Lord Burghley, Annie Elizabeth, Brabant Bellefleur, Ribston Pippin, and Ashmead's Kernel. The remaining prizes were gained by Mr. Ford, Leonardslee Gardens, Horsham, and Mr. Goldsmith, Hollenden Gardens, Tonbridge, both of whom had well-coloured fine fruits, but not equal to the first in size. The only collection from the midland counties was that from Mr. Goodacre, Elvaston Castle Gardens, Derby, who was awarded the first prize for fifty dishes of fairly good fruits, not of remarkable size, but generally good in colour, and representing all the leading varieties.

The only collection of Scotch Apples was from Mr. W. King, Dalzell Gardens, Motherwell, N.B., who had forty-eight dishes of mostly small fruits in poor condition, but the first prize was awarded for them. A third prize was also awarded to Mr. J. B. Thomas, Covent Garden, for a few dishes of American Apples, Baldwin, Spitz, a bright red variety, and Newtown Pippin being the best.

**Culinary Varieties.**—Eight exhibitors of twelve culinary varieties entered, Mr. Haycock taking precedence with large handsome specimens of Mère de Ménage, Lord Derby, Dr. Harvey, Belle Dubois, Reinette de Canada, Dumelow's Seedling, Reinette Triès Tardive, Peasgood's Nonesuch, Loddington, Warner's King, Blenheim Pippin, and Bedfordshire Foundling. Mr. Ross, Welford Park Gardens, Newbury, and Mr. Goldsmith were second and third, each having fine well-developed fruits of similar varieties to those in the first collection. There were the same number of competitors with six culinary varieties, but there Mr. Ross was first with admirable fruits of Mère de Ménage, Blenheim Pippin, Lane's Prince Albert, Brabant Bellefleur, Peasgood's Nonesuch, and Annie Elizabeth. Mr. Haycock took the second place, very closely followed by Mr. Gilmour, Seacox Heath Gardens, Hawk-hurst, an extra prize being adjudged to Mr. Walker, Thame, for a good collection.

**Dessert Varieties.**—Nine lots of twelve dishes were staged, Mr. Rutland,



Goodwood Gardens, Chichester, being victorious, staging beautiful examples of Scarlet Pearmain, Cockle Pippin, King of the Pippins, Ribston Pippin, Nonpareil Golden Pippin, Pennington's Seedling, Melou Apple, Yellow Ingestre, Lewis's Incomparable, Nanny Apple, Cox's Orange, and Adam's Pearmain. Remarkably fine also were the second and third collections in the same class from Mr. Haycock and Mr. Ross. There was a stronger competition with six dishes, thirteen being entered, and Mr. Goldsmith well deserved the premier prize awarded him for his beautiful fruits of Blenheim Pippin, Ribston Pippin, Fearu's Pippin, King of the Pippins, Scarlet Nonpareil, and Cox's Orange. Mr. Haycock had again to be content with the second place, and Mr. Rutland followed.

**Heaviest Apples.**—Of the eight dishes of six fruits each entered in this class those of Gloria Mundi from Mr. Rutland, which weighed 7 lbs., were placed first. Mr. John Walker, Thame, Oxon, was second with Mère de Ménage, 6½ lbs.; and Mr. John Fincham, Nacton House, Ipswich, was third with Warner's King, 6 lbs. 2 ozs.

**Highest-flavoured Apples.**—The competition was strong in this class, eighteen dishes being entered. Mr. Waterman secured the first place with Cox's Orange Pippin, of fine colour and flavour. Mr. Haycock was second with the same variety, which was also shown by most of the other exhibitors, and Mr. Ford was third with Ribston Pippin.

#### MISCELLANEOUS FRUITS.

One class was devoted to Pears for six varieties, Mr. Haycock taking the lead amongst the six competitors with magnificent examples of Pitmaston Duchess, Duchesse d'Angoulême, Passe Crassanne, General Todtleben, Conseiller du Cour, and Doyenné du Comice. Mr. Goldsmith's second collection also included fine well-ripened fruits of Beurré Superfin, Beurré Hardy, and Beurré Diel, Mr. Rutland having Beurré Clairgeau and Beurré Diel handsomely represented in his third-prize collection. Mr. J. Short, Crediton, North Devon, showed some large but unripe fruits, Catillac and Uvadale's St. Germain's weighing respectively 29 and 31 ozs. The best Quinces were shown by A. H. Smee, E-q., The Grange, Wallington, Croydon (gardener, Mr. G. W. Cummins), and the only dish of Medlars by Mr. Chadwick. E. D. Lee, Esq., Aylesbury (gardener, Mr. W. Robins), was first with a collection of fifteen dishes of Filberts, Cob Nuts, Walnuts, and Chestnuts; Messrs. H. Lane & Son and G. H. Goodwin, Meresworth, Kent, following. In the class for miscellaneous fruits Mr. Ross won the chief position with three magnificent Smooth Cayenne Pine Apples, weighing 60 lbs. 15 ozs., 7 lbs. 3 ozs., and 8 lbs. 12½ ozs. respectively, large, even, and beautifully ripened. H. S. Smith, Esq., Silvermere, Cobham (gardener, Mr. J. Quartermaine), was second with three small and moderately well ripened bunches of Lady Downe's and Mrs. Pearson Grapes, grown without fire heat.

**Gourds.**—A large number of these were staged, but by far the most beautiful and interesting collection was that from the Royal Horticultural Society's gardens, Chiswick, which included a great number of diversely coloured and strangely formed fruits. In the class provided for the largest collection, Mr. Osman, South Metropolitan Schools, Sutton, Surrey, was first with over 300 fruits of various sizes, green, orange, pale yellow, white, and striped; but they were mostly globular or oval. Mrs. Montefiore, Worth Park, Crawley, Sussex (gardener, Mr. Glen), was second with 100 brightly coloured fruits tastefully arranged on Parsley; but few of these were named. Mr. Glen was also first with ten sorts, very distinct and pretty, the striped and mottled varieties being especially striking. Mr. W. D. Cochrane, Hampstead, was second with larger fruits, chiefly of the Pear-shaped varieties; and Mr. Osman took the third place. In the largest Gourd class there were five entries, Mr. W. D. Cochrane winning the first prize with an enormous fruit, weighing 158 lbs., 3 feet in length, and nearly as much in its transverse diameter. Mr. John Brooks, Melrose Cottage, Forest Hill, was second with a fruit of slightly inferior dimensions, and Mr. John Master, Gladstone House, Acton Green, was third.

#### VEGETABLES.

No class was provided for a general collection of vegetables, but sixteen were devoted to special kinds, and in nearly all these the competition was good, though a few weak classes were observable. Eleven bunches of six heads of Celery were staged, Mr. J. B. Thomas having much the best samples, large solid handsome heads of a red variety. With Salsafy and Scorzoneria, Mr. J. Neighbour, Bickley Park, Kent, was first, having even clean roots 15 inches long. Eight good bunches of Parsnips were contributed, Mr. Haycock leading with Hollow-crowned, 2 feet long, fine, clean, and even; Mr. G. Bloxham, Brickhill Manor Gardens, Bletchley, and Mr. W. Meads following with The Student, smaller but very even and clean. In the Carrot class the leading variety was James's Intermediate, shown by Mr. J. Davis, Bodenham Vicarage Gardens, Leominster; these were 1 foot long and of good colour. The same variety was also shown by several others of the fifteen exhibitors. A similar number of Turnips was shown, Mr. Waterman gaining first honours for fine clean samples of White Globe, followed by Mr. Bloxham with White Stone and Mr. Meads with White Globe.

**Onions.**—There was a capital show of Onions in the two classes, the majority of the bulbs being solid heavy specimens. The best of the five collections was from R. N. Bryan, Esq., Rousham Park, Oxon (gardener, Mr. Wingrove), who had good representative samples of the following varieties:—Finlay's Wroton, White Spanish, Brown Globe, Flat Tripoli, Cranston's Excelsior, Sutton's Improved Reading, Nuneham Park, Walker's Improved, Bedfordshire Champion, Williams' Magnum Bonum, James's Long Keeper, and Deverill's Rousham Park Hero. The second place was taken by Mr. Haycock, who had similarly good bulbs of Blood Red, Bedfordshire Champion, Globe Tripoli, Giant Madeira, Deptford, Banbury Improved, White Globe, Brown Globe, Giant Rocca, and The Queen. Mr. Goldsmith followed, one of his best dishes being Nuneham Park. Fourteen lots of nine Onions were staged, Mr. Wingrove being first with Rousham Park Hero, very fine; Mr. Miles, Wycombe Abbey Gardens, second with Giant Rocca; and Mr. J. Roberts, Gunnersbury Park Gardens, third with the same variety.

Endive was well represented by several collections. Mr. Richards, Somerley Park Gardens, Ringwood, Hants, was awarded the chief prize for well-blanching samples of the White and Green Curled, Picpus, Fraser,

Broad-leaved, Digswell Prize, and Broad-leaved Batavian. Mr. Richards was also first with three Endive, showing Picpus very well blanched. Other prizetakers in this class were Messrs. Neighbour, Chadwick, and Haycock. Brussels Sprouts were shown by seven exhibitors, but the specimens were not of remarkable merit. Captain Le Blanc, Northau House, Barnet (gardener, Mr. May), had the best, a form selected by Mr. May, who is a very successful grower of this vegetable. The stems were 2½ to 3 feet high, with compact solid sprouts. Mr. Richards followed with Veitch's Exhibition Sprouts, and Mr. Starke was third with Finlay's Wroton, large and rather coarse. Of the eleven exhibitors of Cauliflowers Mr. Marriott was the most successful, taking the first place with Veitch's Autumn Giant, large, white, and clean, most of the other competitors staging the same variety. Mr. Woodward, Isleworth, had the best collection of B-ets, showing well-grown, but in some cases rather coarse roots of Walker and Simpson's Globe Red, Mammoth, Jumbo, Dwarf Red and Long Red, Nutting's and Dell's Crimson. Mr. Mead followed with smaller, and in the opinion of some, more satisfactory roots, Nutting's Fine Selected, and Sutton's Improved Dwarf Red being especially notable. Mr. Osman had the only four heads of Cardoons staged, each 2½ to 3 feet long, about 8 inches in diameter, solid and white.

#### NON-COMPETING EXHIBITS.

Several large collections of Apples were contributed by nurserymen, and added considerably to the extent of the Show. Messrs. J. Veitch & Sons, Chelsa, had nearly 100 dishes of Apples, representing about the same number of varieties, many being extremely fine. Very notable were two or three dishes of the Sandringham, solid, heavy, well-developed fruits. Red German was remarkable for its deep red colour, and all the most useful varieties were well shown. Messrs. T. Rivers & Son, Sawbridgeworth, staged 115 dishes of Apples, the fruits mostly of moderate size, but even, and in several cases very well coloured. Messrs. W. Paul & Son, Waltham Cross, contributed thirty-six dishes of Apples, all handsome and highly coloured fruits; a choice selection of the best varieties. The Nova Scotia Packing Company had six barrels of Nova Scotian Apples, Baldwins, Gravenstein, King of Tomkin's County, and Ribston Pippin being the best. Mr. J. B. Thomas, Covent Garden, also showed several barrels of American Apples very good in colour.

Floral exhibits were few, and the most notable was a stand of thirty-six Dahlia blooms from Messrs. Rawlings Brothers, Romford. These had been gathered from plants outside, and were remarkable for their neat forms and bright colours. Mr. G. Stevens, Putney, contributed a stand of forty-eight Japanese Chrysanthemum blooms, representing several new varieties, and with fine blooms of Madame C. Audignier, Comte de Germiny, Nuit d'Hiver, and Bouquet Fait. Mr. H. E. Campbell, Gourock, N.B., showed forty spikes of Gladiolus, the blooms fine and the colours clear.

The vegetable exhibits were still less numerous. Large bulbs of Rousham Park Hero and Anglo White Spanish Onions were shown by Mr. H. Deverill, Banbury, and Mr. Cummins exhibited several heads of a very white Celery.

The Exhibition continues open until 10 p.m. this evening (Thursday), and exhibitors will not remove their productions until Friday morning.

#### JUDGING TOMATOES.

WHEN it is decided to judge culinary Apples by their flavour before being cooked, then and not till then, I think, should we venture to apply a similar test in judging Tomatoes. Not that I by any means despise the flavour of a thoroughly ripened Tomato; nay, I would even give it a place on the dessert table in preference to the insipid Banana or the (to some palates) delectable Monstera, but while Tomatoes are chiefly used for sauces and other culinary purposes they, like kitchen Apples, should, I think, be judged by their flavour after, rather than before, they have been subjected to the delicate operations of the cook. For culinary uses they are chiefly cultivated; and as many of the best varieties of culinary Apples are the most unpalatable when uncooked, so in like manner is this the case in respect to Tomatoes. Should not our first object, therefore, be to determine which varieties are the best flavoured when cooked, and in judging them on the exhibition table to let the knowledge so gained largely influence the judges in making their awards rather than permit size, colour, form, or even Mr. Iggulden's proposed juicy bite to be the only tests of merit? I may have expressed a fancy for President Garfield and Stamfordian (monstrosity though the former may be) for the simple reason that they are both superior in flavour when cooked, and the former is the best disease-proof and the most prolific variety I know for outdoor cultivation.

For early use and in bad seasons Tomatoes must be grown with artificial heat, or at least with the protection of a glass covering; but in ordinary seasons when the outdoor plants can be grown free from disease the crop so grown will not only be found the most profitable, but the flavour of the fruit gathered from an unprotected south wall will invariably be found superior after it has passed the cook's hands to that of fruit grown with artificial heat. If eventually we can so educate our palates and fancies as to admit of its varieties being classed K and D, then I think the President will not lose his position very easily in the former class, and perhaps King of Tomatoes and Greengage may be close rivals in the latter class, while Stamfordian and Orangefield may without inconsistency be classed either K or D. As with Melons, Peaches, and nearly all exotic fruits, however, growing Tomatoes for flavour, size, and profit, does not always need the same method of cultivation.—T. CHALLIS.

#### DAHLIA CULTURE.

IF "Tyro" reads to the end of my Dahlia Notes he will find I intended to continue my remarks, but am afraid the knowledge he wishes to obtain has been so frequently in print that it may appear to many almost useless to repeat it; but I shall gladly give such hints on the cultivation of these flowers that if properly attended to will produce good results.



In selecting the ground give preference to that of a light nature upon gravel. Get the top spit of a pasture, and double-trench with sufficient manure, not in too large a quantity. I am not an advocate for strong growth, which produces coarse flowers. If of a loamy nature, use a quantity of road sand. The sooner the bed is prepared the better, leaving the soil as rough as possible that the frost may penetrate it.

If the soil is known to contain wireworms at the time of trenching use a quantity of soot and lime. It will quickly destroy them. This being one of the enemies spoken of, they must be looked after carefully. Having the ground prepared, as the season comes round procure from one of the many trade growers sufficient plants for the size provided, having the rows 5 feet from each other and 4 feet between the plants. When received they will be in small pots. Place them in 48's, keep them in a cold frame, giving all the air possible, just protecting them from frost. About the 1st of June place a stake to secure each plant, and on the top of this a small flower pot containing a little moss. Examine them in the morning and you will often find another enemy, and a very destructive one, the earwig. Every one destroyed then will prevent great trouble when the flowers begin to expand. After planting great care is required to protect them from slugs, which generally attack them just below the ground. As soon as they have grown sufficiently to harden the wood they will not for a time do any great harm.

As regards varieties, "E. M., Croydon," has given in the *Journal of Horticulture*, September 25th, page 289, a most elaborate description of the best Show and Fancy flowers, as shown in 1883 and 1884. All can refer and act upon it in selecting with the greatest confidence, and I beg personally to thank him for the great labour and time he has devoted to the subject.

I would not advise anyone to begin with a large number of plants. Eighteen Show and the same number of Fancy varieties, with proper attendance, ought to produce in the show a stand of six of each variety. Master your position and then extend your collection.

Having arrived at the planting, by that time all other information required till the flowers are put upon the show-board shall be duly given, not forgetting the "sun and moon." Alas! another enemy, frost, made its appearance last night, and has completely destroyed all Dahlias for this season.—H. G.

A CORRESPONDENT signing himself "Tyro" asks if "H. G.," or any successful exhibitor, will advise to enable him to become a successful exhibitor of Dahlias. If "Tyro" wishes to grow Dahlias, or any other florists' flowers, he should first learn the situation the plants grow most naturally in. Many persons will plant a Polyanthus in an open south border; but if he will look for the Primrose he will find it facing the morning sun. Plant Dahlias where Potatoes grow all top or bine and no tubers, a deep loam. I agree with what my friend, "H. G.," states, as I generally see his Dahlias daily, and frequently before or after sunset we walk through each other's gardens. To rise with the sun is the best time to examine the flower buds, and take off all false or deformed bad eyes. To examine a Dahlia bloom when the sun is shining bruises the petals and causes the destruction of bloom. In the moonlight do not slugs and grubs wander abroad? and when the moon does not shine I take a lamp and search for the slugs and other pests. If a plant is injured by a slug, take a Lettuce leaf and place round, and damp the ground; go at eleven at night and look for the pests. I would advise all who wish to succeed not to put a plant in the ground and go again in a month after expecting to see it perfect in blossom. Nature does her part when assisted; if not, you must expect to find small blooms, which will only bring disappointment.—THOMAS GARRATT, *Bishop Stortford, Herts.*

P.S.—As you so favourably reported upon some six seedling Dahlias I sent October 2nd, I enclose two other varieties. The three blooms are from a seed plant of 1884, also the one bloom which has been very fine, but the frost has destroyed its growth; the shape, I think, you will consider fine.—T. G.

[We consider the flowers represent varieties of great promise, their form being excellent and colours pleasing.]

### LIQUID MANURE.

EVERY gardener knows the value of liquid manure. In the hands of the experienced it is an important aid in the cultivation of flowers, fruit, and vegetables, whilst in those of the inexperienced it is one of the most uncertain in effect, yet by its timely and judicious application results are achieved which a few years ago would have been considered unapproachable without a considerable extension of the rooting area. Of flowering plants we have more useful and more floriferous specimens in 6-inch pots than we formerly had in 9 or 12-inch. Its use has quite revolutionised our ideas in respect of plants grown for decorative purposes. Then in fruit culture large borders have given place to borders of limited extent, rich soils have been supplanted by those more likely to encourage root-action, and which are porous through the presence of inorganic substances.

Further, as regards vegetables the use of sewage, aided by mulching, has rendered us safe from famine through drought, and we have attained an excellence in products much in advance of previous results. Instead of filling the ground with manure much in excess of what would be needed for the sustenance of the crop in an ordinary season, we trust more now to meeting

emergencies as they appear by the prompt application of manure in a liquid form, and the evil effects of drought are avoided by watering and preventing evaporation by mulching. Artificial manures also assist us greatly, as they may be applied as surface dressings in frequent small doses, yet they would be ineffective were it not for the copious waterings following their application.

If the object of the cultivator is to secure the largest size of plants with the finest foliage, the largest head of bloom and finest flowers in the smallest pots in the least time, he must give liquid manure before the soil is exhausted of its virtues, and continue to give it as long as the plant remains in the pot. Thus a sturdy vigorous growth is maintained from the first, and up to the flowering or, with foliage plants, until they are of a suitable size for decorative purposes. Thus we see Primulas, Cyclamens, Cinerarias, Pelargoniums, and Fuchsias in 5 or 6-inch pots superior in size, health, and flower to what were only a short time ago grown in pots 2 to 3 inches larger in diameter. What is true of flowering plants is equally true of variegated and foliage plants, also to the freer rooting and softer growing hard-wooded plants. In growing the latter we have wonderful examples of cultivation from the judicious application of cool manures in liquid form through all the stages of growth up to the flowering.

Softwooded Ericas and Epacris are obtained in small pots, large in head and splendidly flowered, by superior cultivation but if they have nothing but water after the flowers expand, the plants are so exhausted that they do very little good subsequently. This is equally the case with softwooded plants; they are fed so as to afford a fine head of bloom out of all proportion to the pots they are grown or flowered in, and the plants are never so fine again. Such plants are grown specially for market, they are disposed of and thrown away after they have served the purpose intended. The wonder is not why it should be so, but rather how it could be otherwise. To continue the vigour of the plant after this stage is reached is thought by some to be impracticable. They change hands, are placed in conservatories, greenhouses, or employed for decorative purposes indoors. There is a sudden and complete cessation of the high cultivation, and the plants soon exhibit signs of weakness and ill health. But there is no reason why a well-fed plant should not by continuing the treatment be healthy and vigorous for years after attaining to a suitable size. Evidence of this we have in exhibition plants; the same old staggers take and keep their places year after year as certainly as the shows. Therefore, I would point to the fact that when a specimen deteriorates it is due entirely to a withdrawal of the high culture to which it had previously been subjected. If much weakened no care or culture will restore the former vigour, but if the only effect on the health is due to the flowering good treatment will render them as useful as before.

The time for applying liquid manure to plants in pots requires some consideration. The time not to apply it is when a plant is newly potted and has no roots in the fresh compost, and when it is in a dormant state or resting. The time to apply liquid manure is when a plant has active roots, when the flower buds are forming, and when they are expanding. Liquid manure can never be given wrongly at those times. When a plant is growing strongly in plenty of light and air, and flower buds are showing, the roots will take almost any amount of nutrition, which in the case of softwooded plants will need to be continued until the flowering is over. In the case of plants that make growth and set the buds and then rest awhile, the liquid will only be required until the growth is made, as, for instance, Camellias, Azaleas, &c., and through this stage liquid may be given, but at the resting time liquid manure is not necessary, or only in the case of weakly plants with a heavy crop of buds, and then in moderate quantity. When the buds take the next swelling or for flowering, the roots, if the plants are healthy, push active feeders, and these feed the swelling buds and expanding flowers, new growths issuing soon after flowering or in vigorous examples with them. If the manure is to be of any use it must be when the plant has an active root-action. Applied when the root-action is dormant, liquid manure will not do much good beyond enrich poor soil; but it may do great injury by gorging the soil with aliment which stagnates and destroys the roots. This is a common case with Camellias from an excess of water alone; the roots are lost during the resting season, and the buds fall when they should be expanding.

There are cases when liquid manure may be given at almost any stage of a plant's growth, provided the foliage be fully exposed to light. I allude to plants kept in continuous growth and flowering, such as Gardenias, Tree Carnations, Eucharis, and Stephanotis.

Liquid manure must be given to plants in accordance with



their health. Weakly plants will not take such strong supplies as those which are vigorous, and it must be given less frequently. It is not considered desirable to give liquid manure to weakly plants, but these must have assistance if they ever are to become healthy. Poverty of plant is from poverty of soil. Starved roots can never support a vigorous plant, and if any plant need liquid manure it is the weakly and ill-conditioned. It is no use giving liquid manure to a plant that has bad foliage from lack of roots, but it is another thing to give it to a plant starved in a small pot full of hungry roots. Further, liquid manure should be given weak; when too powerful it destroys the roots, and it should not be supplied too frequently. A plant in the early stages of growth after potting will not only require the liquid weak, but less frequently than when the roots are more abundant and the plant much advanced. As a rule once or twice a week is a safe practice until the plants are in free growth, and afterwards it may be given at each alternate, or, if more vigour is needed, at every watering. Whenever it is given it should be thorough—as full and complete as a supply of water, sufficient to fill the soil.

Liquid manure should always be employed of a known strength. No haphazard system must be followed, and although manures vary in strength and may be different in chemical constituents, those of the same kind are not so variable as to be unsuitable for practical purposes. I allude to solid manures, which when mixed with water are most suitable for pot plants. The drainings of stables, cow sheds, &c., are good, yet vary so much in strength from the water that finds its way into the cesspool, either from rain in the case of open tanks in yards or washing out of the trenches in stables, as to be very variable, and require great judgment in their employment. As a rule this form of liquid manure will mostly need to be diluted with six times the bulk of water, and in using the drainings of the stalls one part to twelve of water is quite strong enough, but the liquid manure tank is best left alone as regards watering choice plants with it, reserving it for the coarser or grosser-feeding plants or crops. Liquid manure should always be applied at a temperature equal to the mean of the house in which the plants are growing, or a few degrees warmer.

Soot is undeniably the best manure for plants in pots. It should be kept dry, as damp spoils it, and putting it in a tub with water and allowing it to stand until wanted is not much better. If a large quantity be wanted put a peck in a tub, and enough water to form it into a paste, then add thirty gallons of water, and apply at once, stirring well before each dipping of the watering pot. Another plan is to put as much soot as is considered will be wanted in a watering pot and form it into a paste with water by stirring with a stick. Pour about a wine-glassful into a gallon of water or more, according to the size of the can, and apply to the plants. For giving colour to foliage there is nothing to equal soot, giving the leaves a deep green gloss not to be obtained from any other manure that I know.

Guano, when good, is first-rate, Peruvian being the best. Place 1 lb. in a tiffany bag, and immerse it in a tub containing twenty gallons of water, then move it about until nothing is left in the bag but the insoluble matter, and apply at once. If only small quantities are required put as many ounces in a tiffany or muslin bag as the watering pot contains gallons, and move it in the water until it ceases to give out more colour than that of the liquid outside the bag in the can. It is then fit for use.

Pigeons' dung, at the rate of a peck to thirty gallons of water, is a powerful fertiliser. Place it in a tub, stir well, and every six hours for a day, let stand a night, then stir again, strain through a hair sieve or bag and use. It will save trouble to place in a coarse bag in the first instance. For plants not in a vigorous condition it must only be used at half the above strength, and is only available for softwooded plants. Fowls' dung is equally effective. Sheep droppings, when they can be had, may be used with advantage, and is prepared similarly to the above, with the difference that it is well to pour some boiling water over it to submerge it. This liquid being cool is well suited for hardwooded plants, as Camellias, Azaleas, and similar plants. Horse droppings may be used, but twenty gallons of water is ample for a peck, and cow dung is perhaps the safest of all. The cow dung should be fresh, and have boiling water poured over it to destroy the larvæ that harbour in it; and twenty gallons of water is sufficient dilution, and is admirable for every description of plant, more particularly for those that are naturally slow-growing, have hard wood, and delight in a cool moisture-holding soil, hence it is available in preference to all others with fine hair-like fibres, as Heaths and all peat loving plants.

Sulphate of ammonia may be used at the rate of half an ounce to the gallon of rain water to plants that have plenty of roots, and should not be given more frequently than twice a

week; but it is safer to use it at half the strength—viz., quarter ounce to each gallon, and apply more frequently. This is perhaps one of the best manures for plants grown for their leaves, and is more especially useful for Chrysanthemums, and Fuchsias. The ammoniacal liquor from the gasworks is also serviceable, employing a pint to three gallons of water, and superphosphate of lime at the rate of 1 lb. to twelve gallons of water may be used similarly. The nitrates of potash and soda are good where vigour or leaf-growth is wanted, as they promote luxuriance in a marked degree; but all such manures should only be given to plants that are strong-rooting, and not to delicate-rooted ones.

In using liquid manures the best results are obtained by varying the applications—not employing one kind throughout, but alternating, as for instance soot for a time, then animal manure, and then superphosphate of lime, &c., and this course seems to act most beneficially on softwooded plants.—G. ABBEY.

### LIFTING AND ROOT-PRUNING FRUIT TREES.

IN the culture of hardy fruit this operation is a most important one; so much so, in fact, that in a vast number of cases success or failure depends entirely upon it. Unfruitfulness may arise from various causes, but the inexperienced have generally two very good "stock in trade" excuses—viz., bad soil and bad climate. This may hold good sometimes, and in a few instances may be only too true. In the great majority of cases, however, we feel sure that failure would not be so frequently heard of if a little timely attention were given to root-pruning and periodical lifting. Of course we make no pretence at saying that either of these operations will ensure a good crop of fruit annually, irrespective of other points which are equally essential to successful results, but which it is not my intention to dilate upon here.

In regard to lifting, I may at once say that it is neither wise nor safe to practise that operation on trees which have been planted and left undisturbed for a number of years. The result in many cases might prove disastrous to the trees on which it was practised. This applies chiefly to Apples, Pears, and Plums; with Peaches, Nectarines, and bush trees such as Gooseberries, Currants, and Raspberries, there is comparatively little risk, owing to the more fibrous nature of the roots. The primary object of lifting is to bring about fruitfulness, and should be resorted to when trees are in one of the following two conditions—viz., over-luxuriant, or unhealthy. In the former case to bring about what is sometimes vaguely called a "balance of power between root and branch," and in the latter a restoration to good health. At first sight it may appear somewhat strange to a novice that the same means should be employed to check and accelerate root-action. To be brief, however, we must hasten to explain that with trees in an over-luxuriant state the object is to temporarily check the flow of sap, so that it shall form fruit buds instead of wood. The operation in this case need only consist of taking up the trees, cutting back all strong roots, and replanting in the same soil. In unhealthy trees, however, we have a different state of things to deal with. The trees must be lifted with care and as many roots as possible. All the old soil should be removed and replaced with other of a better character, and if the drainage is defective it should be rectified, as on this, quite as much as soil in some instances, depends in a great measure success or failure. There is one more very important point in connection with the subject—viz., periodical lifting; and of this it may be remarked, there can be no question as to the soundness of the practice in its relation to closely pruned pyramid trees. The practice, however, should only be commenced with young trees, and if resorted to about every third year no justifiable cause for complaint need arise.

Coming now to root pruning in its generally accepted meaning, and although it is an old theme, concerning which much has been written from time to time, the discussion annually crops up in the horticultural papers. The difference between this and lifting a tree and cutting back all strong roots, as alluded to previously, is simply this, that root-pruning can be safely resorted to where it would be most unwise and unsafe to have recourse to lifting—viz., with strong vigorous trees of old standing. In such cases the only means of bringing about fruitfulness is by root-pruning pure and simple, forming a trench at a reasonable distance from the bole, say 4 or 5 feet, and severing all thick roots which come in the way. With very old trees, and to be on the safe side, the work ought to be done gradually, doing half way round the tree one year and the remaining half the following year. In digging the trench a depth of from 2 to 3 feet will be found to be quite sufficient. But the operation does not end here; something in the shape of undermining must be done in



order to find out if there is a tap-root, which must be severed. Having cut through all thick roots, the only remaining work to be done is to pare off all jagged ends and bruised roots with a sharp knife, and fill in with soil, treading it down as the work proceeds, finishing off with a mulching of half-decayed stable manure and a good watering to settle the soil about the roots. It seems almost superfluous to say that the best time for lifting and root-pruning is October and November; it may, however, with perfect safety, weather permitting, be carried on up till the end of December; still it must be admitted that the sooner the work is done after the middle of the first-named month the better.—*ET CÆTERA.*

### NEW ROSES.

Now that the catalogues are out our prospects for the season are pretty well before us, and still we are without any startling novelty. Some of the comparatively new Roses have held their own. Earl of Pembroke is a dark Marquise de Castellane, which Joseph Metral is said to be also.

Madame Cusin, T., was shown at Croydon this year in wonderful loveliness, and Merveille de Lyon is spoken well of in all the catalogues; it is perhaps an advance towards the still unfound white Perpetual.

Lord F. Cavendish I am disappointed with, nor do I find it in much repute.

The new Bourbon, Madame Isaac Perrière, is a marvel of robust growth. A bud inserted in the middle of July last with me is now a larger plant than many of last year's Briar stock buddings. I incline to think it is also likely to prove an exhibition Rose.

This year Messrs. Paul & Sons offer a new Rose, Pride of Reigate, a sport from Comtesse d'Oxford, which is York-and-Lancaster the other way, being red striped with white. It is quite unique, and a Rose of good substance as well as a perfect novelty.

Mr. W. Paul's Queen of Queens would seem desirable as descended on one side from the dear old Maiden's Blush. It could hardly inherit more perfect ancestral fragrance.

Also Mr. Bennett as usual puts forward new Pedigree Roses. Grace Darling I have bloomed: it is a fairly strong Tea and of a most lovely colour—creamy white shaded with pinkish peach. His new Mary Bennett, H.P., can boast three first-class certificates; rose cerise by colour. But where is Her Majesty! Alas! Echo alone answers; let us hope preparing for a wide circulation at least in 1885.

Gloire Lyonnaise is highly spoken of as amongst the best of the new Teas, a seedling of Madame Falcot and Baronne de Rothschild; also I have noted down Andre Schwartz, a deep rich scarlet Tea, attractive to those who venture to disagree with "D., Deal," in his disapproval of the red Teas. Under this heading I may mention an older dark Tea, May Paul, an improved Gloire de Bordeaux, not quite so rampant, and apparently more willing to flower. One more comparatively modern Tea may be mentioned which has very rapidly won its way into favour for buttonholes, that is W. A. Richardson.—A. C.

### NOTES FROM THE WEST OF SCOTLAND.

IN 1876 Mr. Pettigrew, Cardiff Castle Gardens, gave some interesting details in the "Gardener" of certain old Vines in various parts of England, and of two at Dumfries House, Ayrshire, one of the Scottish country seats of the Marquis of Bute. These Vines were all trained on the extension system, and were at the time referred to in the most vigorous health and bearing heavy crops. Being situated within a convenient distance of Dumfries House, I resolved to take a trip across country one day in August last to see the famous old Vines, which I had been so interested in reading and hearing about. Arriving at Old Cumnock station, a walk of about two and a half miles along the Ayr and Dumfries road leads to the entrance gate most convenient to the gardens. Passing along the carriage drive, some distance from which some fine old trees of huge dimensions are observed, the gate of the flower garden is reached. A long and broad walk extends from this gate through the centre of the flower garden to the kitchen garden. The beds were gay with the usual flowering plants tastefully arranged. In one of the most prominent positions I observed two beds filled with Tuberous Begonias in vigorous growth and flowering profusely. Judging from the satisfactory results which have in general followed the starting of these Begonias out of doors, they are likely soon to be used on a larger scale for bedding.

Entering the kitchen garden, my attention was directed to a number of Plum trees on the walls carrying heavy crops of fine fruit, among which Kirks' Seedling was notable. Worthy of looking at in one of the vegetable quarters was a breadth of Carrots, which from their luxuriant growth appeared to be in the right place. The stems of these had attained something like Asparagus dimensions. It would no doubt be gratifying to many to know the secret of Mr. McKinnon's success with this often

troublesome root. Crops of Peas were also abundant and good. Several long rows of Telegraph, Ne Plus Ultra, and Duke of Connaught were loaded with large well-filled pods of superb flavour. I have to confess turning my back on these rows of Peas with somewhat envious feelings, troubled as I had been for two seasons with millewed crops. A long border filled with Roses forms an interesting feature in the kitchen garden, but in common with many plantations of these this season there was a break in their usual flowering period owing to the intense heat and drought in August.

On returning from the kitchen garden the old vinery comes into view, which was the main object of my visit. Being of somewhat ancient construction, it has little to attract in its outward aspects, but as soon as the interior is seen and the visitor informed that the two Vines which occupy it, Black Hamburgs, are 160 years old, he may well be astounded at the heavy crop of well-finished Grapes hanging from them in handsome bunches. As the crop at that time had but recently attained ripeness, there was consequently a good opportunity of seeing these two grand old Vines to advantage. The description of the crop given by Mr. Pettigrew eight years ago was not less applicable when I saw them—viz., that the berries were large, well hammered, as black as sloes, and I should think the flavour would please the most fastidious. Since Mr. McKinnon took charge the border has been removed, which will doubtless prolong the vigour of the Vines, as the surface of the outside border now abounds with healthy young rootlets, which are encouraged by top-dressings. The old flue has also been removed by which the house was formerly heated and substituted by hot-water pipes, which, it is needless to say, imparts a much more genial heat. To complete the renovation of the vinery, Mr. McKinnon's proposal is to reconstruct it on such dimensions as would be commensurate with the vigorous growth of its inmates, and which, if carried out, would, I venture to predict, ultimately acquire a fame approaching the great Hampton Court Vine.—D. M.

### CULTURE OF MUSCAT OF ALEXANDRIA GRAPES.

I HAVE received an inquiry respecting the too common fault of this Grape shrivelling, and it occurs to me that a few lines may not be out of place, more especially as I am a sufferer to a slight degree in the same way. My first idea is, Do we not give it too much fire heat, particularly in the earlier period of their growth? I think so, and am certain this Grape will keep better in a lower temperature than is usually given. Water, I know, plays a very important part in the well-being of this variety; it takes more water at the root than the black varieties generally, and to be sure of clean foliage syringing can be resorted to frequently up to colouring time. I do not advise this if Vines are clean, but I know the extra fire heat is just what the red spider enjoys. Do not syringe Vines as a rule, unless it is done copiously, such as for cleaning bunches either before or after thinning, but the Muscat will not be injured by more frequent syringings. Shrivelling is sometimes the want of stoning; then again dryness at the roots, often overcropping, and most generally, I expect, from the roots being either too deep in the border or in an unsuitable soil.

Shanking must not be confounded with shrivelling, as the former berries are sour, the latter are generally the sweetest. I am following up the plan of raised borders and increased drainage. This plan will, of course, mean more water, but finer results. The best Muscats I ever had were grown in a Cucumber house bed raised above the path, and I thoroughly believe this to be a move in the right direction. Raised borders mean warmer soil for the roots, and without going into the question of bottom heat, this is more in accordance with their natural condition. More than once, in conversation with those who have seen the Muscats growing in the East, have I been told of the shallowness of the soil and also the rocky nature of their surroundings, coupled with the genial ground heat, the rocks seeming to retain a great quantity of heat. I am not sure if a little bottom heat may not prove beneficial. I know there is always danger of dryness where fire heat is used, but this can be overcome. Reverting again to shrivelling, which as far as my experience goes does not occur in any other Grape unless over-kept, I should like other growers to give a little of their ideas and experience. Lifting and replanting my Muscats in the spring and then overcropping caused shrivelling, which I remedied to a certain extent by reducing the crop. I have used the word overcropping more than once, and without giving any fixed weight a Vine should bear I can only say Muscats to finish well must have lighter crops than black Grapes. The weight of the crop must always be guided by the strength of the Vine; then, again, if it is to remain hanging any length of time, allow less. Cutting the Grapes as soon as they are ripe helps the Vine, for as long as foliage and fruit hang support will be required from the roots. After the foliage is gone I think it makes little difference, provided heat is not employed.—STEPHEN CASTLE.

### ORCHIDS IN FLOWER AT WESTBROOK, SHEFFIELD.

AT a visit paid by me a few days ago since to this fine collection of Orchids I noted the following species and varieties in bloom, making the flowering house very gay and attractive.

Odontoglossum Alexandræ, twelve varieties, including some fine forms; one especially, a recent acquisition, being a large and stout flower peculiarly and densely spotted with large and bright-coloured spots. This had two spikes of flowers from the one growth, numbering fourteen and twelve respectively. Odontoglossum Pescatorei, four varieties; O. Uro-Skinnerii; O. tripudians; O. Lindleyanum, two var e-



ties; *O. Rossi*; *O. grande*; and *O. vexillarium rubellum*. The latter is a very fine high-coloured form recently purchased from Mr. W. Bull.

*Dendrobium chrysanthum*, *D. Lowi*, *D. formosum giganteum*, and *D. Dearii*. The latter is one of the most useful amongst Dendrobes, its pure white flowers being freely produced and lasting a long time in perfection. *Oncidium bicolor* and *O. varicosum*; *Zygopetalum Mackayii*, a fine form, with a lip 2 inches across; *Epidendrum Hanburyanum*; *Masdevallias ignea* and *Wagenerii*; *Cypripediums insignis*, *Roezii*, and *Spicerianum*, the latter very beautiful, a gem amongst *Cypripediums*.

The collection generally is in fine health, and has of late been much improved by Mr. Wilson, its proprietor, in the judicious selection and purchase from various sources of many rare and fine varieties. I made a note whilst there of a large plant of *Dendrobium nobile*, referred to by me in the early part of the year as having been potted in the rhizomes of bracken. I find it has made very satisfactory growths, which are not quite so long as others potted in peat and sphagnum, but are remarkably stout and short-jointed.—W. K. W.

#### INSECTS ON ORCHIDS—SPIDERS.

IN your issue of the 28th ult. I notice that "A Thinker" advocates the use of quassia water as a preventive for thrip on Roses and Carnations. Having been much plagued this summer by the yellow thrips in my Orchid houses, especially the *Cattleya* one, may I be permitted to ask "A Thinker" if he would recommend—and Orchid growers sanction—a syringing overhead of my *Cattleyas* with the decoction of quassia wood as prepared by him?

Yet another question and I have done. Can "A Thinker," or anyone else, tell me how to get rid of the common spider from Orchid houses? He is a great trouble to me. People say, "Oh leave them alone, they do not injure the plants!" This is no doubt partially true; at least they do no harm directly, but indirectly they do very much, as they bring dust and dirt into the houses, which sooner or later gets on to the leaves and spoils them, to say nothing of the spider's objectionable habit of appropriating all the leaves, roots, or young growths of my precious Orchids to support his fly-catching apparatus.—ANOTHER THINKER.

#### DINNER TABLE DECORATION.

RESPONDING to the invitation of your correspondent on page 370 of your last issue, I wish to state what little experience I have gained in this important and increasing branch of horticulture. A maxim to be followed in table-adornment is certainly lightness and simplicity of arrangement. This is the first lesson, and it is surprising what great results can be obtained even when the most common flowers are tastefully arranged. At this season in many large establishments shooting and dinner parties are frequent, and it requires careful thought to make a different arrangement and give variety on each occasion. One thought arises here—if we employ hothouse flowers we endeavour to have hothouse leaves and Ferns; if we use wild flowers their leaves and wild Grasses are arranged: for instance, to mix Dahlias or any border flowers with *Alliemandas* and *Dipladenias* would be to spoil the effect of both. We may learn many such lessons in combination of kinds and colours. On the 1st of this month we had a large centrepiece filled with wild flowers with common field Grasses to give lightness, and on the ends of the table were arranged with the common green moss of the woods crossed rifles (imitation); while in the angles formed by the rifles were placed pheasants of moss with small wild flowers to lighten them. At the sides were four partridges. To take the flatness off clumps of grasses were arranged fixed in sand on small pieces of cardboard covered with moss, and the effect was indeed novel and striking, especially by the shade of the lights. So much for what may be termed the sportsman's table.

Another good effect I have found to be obtained from our roadside berries. A very pretty tracing may be had from the bright scarlet Hawthorn berries. They are very striking with the leaves attached in small pieces, and contrast favourably with the deep Elder berries, and even Blackberries, when in good scarlet clusters, Sloes, Hops, and others. Later on we have the Briar berries, while what is prettier than the *Cotoneasters*, Yews, Laurels, Privet, and the garden Asparagus with their light foliage? With the leaves attached very pretty designs and good effects may be had from all these.

Then we come to coloured leaves with the splendid autumnal tints—Beeches, Oaks, Birches, Maples, Alders, Barberries. Fine tints may be had from the fading Ghent Azalea. Virginian Creepers and the *Ampelopsis Veitchii* with its light clinging wreath-like strings of dark colour just dropped here and there are very pretty.

The most generally employed, however, are our hothouse productions. It is difficult to find anything more tasteful or elegant than a tracing round the table in various modes of the old *Selaginella denticulata* (*Kraussiana*) with single blooms of *Pelargoniums*, *Begonias*, *Bouvardias*, *Fuchsias*, or any other bloom of striking colour dropped in the centre, with a Maidenhair Fern or any graceful pendant plant, banked up with moss and studded lightly with bloom. Around this may be placed at an even distance four small *Coleuses*, *Crotons*, or *Pandanus Veitchii*; with a few small glasses of flowers neatly arranged according to the size of the table placed in position, very elegant and striking results may be obtained.

Thus many profitable evenings may be spent for young gardeners with advantage and credit to themselves; and if we mean to excel in the craft now-a-days evenings are not to be spent idly, for designing, drawing, and decorating is becoming a great feature in a gardener's career. I have learned a few lessons from our journal, and I would thank your able

correspondents, "W. B." and Mr. H. Dunkin, for their kind information and useful hints on a subject that deserves more attention than it receives.—ANOTHER YOUNG SCRIBE.

#### CHRYSANTHEMUM AND FRUIT SHOWS, AUTUMN, 1884.

October 30th.—Fruit Show at South Kensington.

November 5th.—Ealing.

" 6th and 7th.—Southampton.

" 7th and 8th.—Havant.

" 10th and 11th.—Stoke Newington.

" 11th.—Putney; Royal Horticultural Society's Meeting, South Kensington.

" 11th and 12th.—Kingston, Croydon, and Lambeth.

" 12th and 13th.—Royal Aquarium, Westminster; Bath, Colchester, and Cranbrook.

" 13th.—Watton-on-Thames.

" 13th and 14th.—Richmond, Brixton, Teddington, and Tunbridge Wells.

" 14th.—Reading.

" 14th and 15th.—Crystal Palace, Huddersfield, Canterbury.

" 18th.—Winchester and Lincoln.

" 18th and 19th.—Plymouth.

" 19th.—Wimbledon.

" 19th and 20th.—Northampton and Birmingham.

" 20th.—Taunton, Dublin, and Aylesbury.

" 20th and 21st.—Hull.

" 22nd.—Loughborough.

" 25th.—Manchester.

" 25th and 26th.—Liverpool, Basingstoke.

" 26th, 27th, and 28th.—York.

December 5th and 6th.—South Shields.



#### HARDY FRUIT GARDEN.

*Planting.*—The necessity for planting in new gardens is clear, but in old gardens it is not always apparent; yet the necessity is none the less urgent in some degree, for there is much difference in the duration of fruit trees in health and full bearing. In a large collection failures frequently occur, and sickly or worn-out trees should never be retained. Whether planting be done in gardens new or old, see that each tree has the soil in sound, sweet, fertile condition for it before planting. Each station must be 2 feet deep and 6 feet square, which gives a tree 72 cubic feet of soil at the outset. Beneath the 2 feet of soil put 6 inches of concrete, consisting of one part of fresh-slaked lime to six parts of coarse sand or finely broken stones. To insure perfect drainage, lay a row of 2-inch land drain-pipes across the station, and press the pipes slightly into the concrete before it hardens, continuing the pipes to the nearest drain. The concrete prevents the roots from running down into the cold subsoil, and by subsequent surface dressings the roots are drawn upwards, and an ample supply of food given to the tree. Plant early in November for choice, and from necessity at any time during winter. When the condition of the soil and weather admits of it, shorten the branches to the bud whence new growth is expected next season, cut off any bruised roots, spread out all roots at full length, cover with 6 inches of soil, which press down firmly by careful treading. No tree can grow and thrive unless the soil is pressed closely about the roots. When planted the base of the tree should be 6 inches above the common level of the soil surrounding the station to allow for settling down. Fasten the tree at once to stakes, wall, or trellis; put a surface dressing of rough manure over the soil about the roots, attach a neat label of some durable material bearing the name and date of planting, and also enter the name in the fruit book and upon the garden plan. Regard every detail as important and indispensable at the time of planting to insure success and accuracy. The trees must be of stout, clean, healthy growth. If for walls either fan-trained or palmette verriers 15 to 20 feet apart, or single cordons 18 inches apart, espaliers either cordons or palmette verriers. For orchards either pyramids 10 feet apart or bushes 20 feet apart, or standards 30 feet apart. The two latter forms are preferable where close pruning is undesirable, it being necessary only to keep the branches thinned and the centres open. Take especial care not to expose the roots more than can be helped to the air. Unpack when the trees arrive, and at once plant or cover the whole of the roots with fine soil so well that there be no drying or roots shrivelling, or the tree will certainly suffer, and show it has done so by the feeble growth next season.

Fruit for a market garden should consist solely of sorts of proved merit, abundant and early croppers, hardy and vigorous growers, with fruit of fine flavour, high colour, and handsome form.

*Dessert Apples.*—Joaneting, Margaret, Mr. Gladstone, Early Strawberry, Kerry Pippin, Worcester Pearmain, Red Astrachan, Devonshire Quarrenden, Margil, Ribston Pippin, Cox's Orange Pippin, Court of Wick, King of the Pippins, Bess Pool, Mannington's Pearmain, Claygate Pearmain, Adams' Pearmain, and Sturmer Pippin.

*Kitchen Apples.*—Early Julyan, Lord Derby, Duchess of Oldenburg, Keswick Codlin, Manks Codlin, Lord Suffield, Stirling Castle, Cellin', Lady Henniker, Wormsley Pippin, Ecklinville Seedling, New Hawthorn-den, Loddington, Warner's King, Blenheim Pippin, Golden Noble, Small's Admirable, Tower of Glamis, Winter Queening, Grenadier, Northern Greening, Count Pendu Plat, Dumelow's Seedling, Annie Elizabeth, Norfolk Beefing, Gooseberry.



*Pears.*—Summer Doyenné, Lammas, Windsor, Caillot Rosat, Bellissime d'Automne, Williams' Bon Chrétien, Yat, Autumn Bergamot, Hesse, Marie Louise, Beurré Clairgeau, Eyewood, Louise Bonne of Jersey, Comte de Flandre, Beurré Bosc, Beurré de Capiaumont, Rondelet, Catillac, Bishop's Thumb, Broompark, Winter Nelis.

*Plums.*—Early Rivers, Diamond, The Czar, Blue Prolific, Perdrigon Violet Hâtif, Early Orleans, Corte's Nota Bene, Dauphine, Belgian Purple, Grand Duke, Washington, Prince of Wales, Victoria, Prince Englebert, Pond's Seedling, Coe's Golden Drop, and Belle de Septembre.

*Damsons.*—Cluster and Prune.

*Cherries.*—Early Purple Gean, Early Rivers, Adams' Crown Heart, Elton, White Heart, Black Heart, Waterloo, May Duke, Black Eagle, Flemish, Kentish, Bigarreau.

*Nuts.*—Pearson's Prolific, Kentish Cob, Red Filbert, Cosford, Duke of Edinburgh.

*Gooseberries.*—Whitesmith, Early Sulphur, Velvet White, Crown Bob, Warrington, Lancashire Lad, Red Rifleman, Golden Drop, Monarch.

*Currants.*—Red Scotch, Red Dutch, Raby Castle, Black Naples, Baldwin's Black, Lee's Prolific Black.

*Raspberries.*—Carter's Prolific, Prince of Wales, Fastolf, Red Antwerp, Belle de Fontenay.

#### FRUIT FORCING.

*VINES.*—*Early-forced Vines in Pots.*—Where very early thin-skinned Grapes are wanted ripe in April the house intended for them should now be ready for their reception if they are not already in position. Weight and quality being primary considerations, the apertures at the bottoms of the pots should be enlarged, and some rich turf placed within easy reach of the young roots, which will quickly follow the stimulating food with which the Vines are supplied. The pots, too, should be placed on stands that will not give way under the weight of the pots or interfere with the regular turning of the fermenting materials used for supplying bottom heat. For making the pedestals nothing answers better than common bricks, and for bottom heat Oak or Beech leaves are well suited, as they afford a genial heat and moisture in the early stages of growth, and rich food at the finish, when the Vines require all the support that can be given to them. The leaves should be put in rather loosely at first, and not brought up about the pots, so as to give a temperature of more than 70° to 75°. If the canes have been shortened they should be allowed to depend in an horizontal position, or even lower, over the fermenting materials until the lowest buds have broken before being secured to the trellis; but if the rods have not been shortened to the proper length and dressed with styptic it must not now be done, as bleeding would ensue, and it is easy to disbud them when they break. For early fruiting in pots Early Ascot, White Frontignan, Dr. Hogg, Mill Hill Hamburg, Black Hamburg, and Madresfield Court are suitable. The latter does well in pots, and planted out in warm inside borders, the roots being liberally fed until the berries show signs of changing colour, when gradually lessened supplies and a dry atmosphere are necessary to prevent cracking.

*Early-forced Planted-out Vines.*—Permanently planted Vines from which ripe Grapes are to be cut in May should be closed by the middle of November, or ten days earlier where the Vines are young and vigorous, as they do not break so quickly as old Vines that have been forced for a number of years. To economise fire heat, and to produce a soft humid atmosphere, a good ridge of fermenting material, consisting of two parts of leaves and one part of rather short stable litter, may be placed upon the border and turned over at short intervals, additions being made as the heat declines. Old rods may be secured to the wires immediately they are dressed; but young canes, to prevent disappointment, will be the better for being kept in a horizontal position over the fermenting materials, where they can be well syringed with tepid water some 10° warmer than that of the house, which should range from 50° at night to 65° on bright days.

*Houses of Ripe Hamburgs.*—The houses in which these are hanging cannot be kept too dry; a steady temperature of 50°, with a little warmth in the pipes and liberal ventilation on dry days, will be suitable during the fall of the leaf, when, unless the house is suitable for keeping them, the bunches may be cut, bottled, and placed in the Grape room, or they will do in the Muscat or late house.

*Late Grapes.*—Where these have not finished well matters will not be mended by keeping the fires going after the wood is ripe, neither will a high temperature prevent shrivelling when the leaves fall. Where the imperfect finish is traced to imperfect drainage, or a bad condition of the roots through bad border, no time should be lost in getting out the old soil, putting the drainage in good order, and laying the roots in new compost, but where the defect is the result of overcropping relief should be given to the Vines by cutting a portion of the bunches at the earliest convenience and bottling them.

*CHERRY HOUSE.*—The sashes should now be replaced, and as soon as the leaves have all fallen proceed to prune the trees at once. Cut back to within an inch or so of the base from whence the shoot started all those laterals which were made during the summer, and which in ordinary practice should be stopped at about the fifth leaf or joint. The terminal growths should not be shortened unless it is necessitated by want of space, or when it is required to increase the shoots next season for furnishing the trees. The trees should then be washed with a brush and soft soap and water, being careful not to dislocate the buds, then tying together so as to expedite the washing of the woodwork, painting, and whitewashing. In using limewash for the walls of forcing houses it should not be put on too thickly, and it is well to wash them with hot

water prior to applying the lime. When this is done the trees should be dressed with an insecticide and secured to the trellis, being careful not to tie them in too tightly, but allow space for the swelling of the branches. Any loose mulching or surface soil should be removed, and any soil of an inert character that can be removed from amongst the roots should be forked out and fresh supplied, which is calculated to induce a more active root-action. This should consist of good calcareous loam, and be made firm, after which put on 3 inches thickness of good decomposed manure, and if there were any deficiency of moisture in the border give a thorough soaking with water, as under no circumstances must the trees be allowed to become dry at the roots. Keep the house well ventilated at all times, except during actual frost, continuing this until forcing is commenced, which, if ripe Cherries are to be fit for use early in May, should be at the beginning of December.

#### PLANT HOUSES.

*Lilacs.*—The deliciously fragrant flowers of this hardy flowering shrub are eagerly sought after early in the year and in many establishments a supply of blooms for cutting and plants suitable for decoration has to be provided from early in the season until the flowers are plentiful outside. To accomplish this successfully the makeshift system of lifting plants from shrubbery borders and returning them to these quarters again after they have flowered will in time end in disappointment. The best variety for forcing and yielding a supply of bloom, either white or its natural colour, is Charles X. In order to be successful, two batches of plants should be grown, so that they can be forced alternately into bloom. Those forced last winter and spring and retained in pots will not have made growth sufficiently strong to flower again this year. These plants should now be cut hard back, leaving only one eye of the young wood for the growths to start from another year. They should be turned out of their pots, the balls partially reduced, and then placed in 7 or 8-inch pots according to their size and strength. The pots used should be fairly drained and the soil—good fibry loam and one-seventh of manure—pressed firmly into them, and the pots plunged outside. The rim of the pots should be completely covered either in ashes or with soil in an open sunny position. When subject to this treatment very rarely do the plants give any labour in watering during the summer months, but make short, stiff, sturdy growths varying from 9 inches to 1 foot in length, which by autumn are studded with large prominent flower buds. The plants before the end of the season are sure to root over the surface of their pots, but these can be cut off without the slightest injury to the plants. If this variety is planted out it usually grows too strongly to ripen its wood sufficiently.

*Prunuses.*—The double varieties, such as *P. sinensis* flora-pleno and *P. triloba*, are amongst the most useful of hardy plants for forcing early in the season. The young plants rooted as advised in spring and now established in small pots, will have ripened the small growths made during the summer. These plants, to be useful for another year, should now be placed into 5 and 6-inch pots, according to their strength, using the same soil as recommended for Lilacs. It should be pressed as firmly as possible into the pots, and the plants afterwards plunged in ashes outside or, better still, in a cold frame if it can be spared for them. This is not important until the approach of severe weather, and not even then if a little protection can be given them. In early spring, if possible, they should be grown in a cold frame to induce active growth as early as possible. By this system a better and stronger growth is made, which has every chance of ripening thoroughly outside.

*Deutzias.*—Young stock rooted at the same time as the Prunuses and now in small pots or grown in boxes as advised, may be placed singly into 5-inch pots. These may be plunged outside, entirely covering the rim of the pots, and if required only for flowering late the following spring may be grown in that condition during the spring and summer. If required for early forcing they should be subjected to the same treatment as the Prunuses. It is much better to grow these plants in pots than to plant them out and lift them in autumn for forcing. When lifted from the open borders, to do the plants full justice they should be allowed to establish themselves for one year in pots before they are forced. They produce their flowers freely under the lifting system, but after they have been forced the growth made the following year is puny. Old plants in pots that have become exhausted by being forced into flower early for several seasons will recruit themselves if allowed one year's complete rest. They should be turned out of their pots, the old balls reduced, and then repotted in fresh rich soil in the same size or smaller pots, and then plunged in ashes or cocoa-nut fibre in a cold frame for the winter. This will avoid watering them until they have pushed several inches of growth in the spring. Plants in 6 or 8-inch pots subject to this treatment will produce in one season from twelve to twenty shoots, varying in length from 18 inches to 2 feet; and when forced in bloom, if previously well ripened, will be laden with small bunches of useful white flowers.

*Viburnum Opulus* (Guelder Rose).—To have good plants for forcing another year lift plants one year old from cuttings that have been growing during the summer outside where they were inserted last autumn. The plants that have made the shortest-jointed wood and an upright growth should be selected. These should be lifted with as many roots as possible, and placed in good soil in 6-inch pots. They may be pruned as close back as possible, so that four or five wood buds remain above the surface of the soil of the pots. After pruning and potting plunge them outside and treat them the same as the Lilacs, and good useful plants with four or five growths 18 inches long will be made and ripened thoroughly by autumn if the plants are given a warm sunny position. By this simple system grand plants for decoration can be



produced in two seasons from the time the cuttings are inserted, which strike root as readily as Poplars.

## THE BEE-KEEPER.

### NOTES FOR THE SEASON.

As the winter will soon be upon us no time should be lost in having all hives requiring it thoroughly covered, as if delayed until the bees cease flying many will be lost through the strange appearance of the hive. Those that have been already arranged for the winter, and in no way protected from mice, should be examined, and the intruders, if any, trapped, as if they affect a lodgment in the hive it is permanently destroyed. Thorough dryness and ventilation is the key to success, therefore these should be carefully attended to. In no case should waterproof material lie flat on the covering. From this until the bees are able to take their first flight they should not on any pretext whatever be disturbed, and the appearance and site of the hives as they were when the bees last flew in the fall should be strictly maintained. I always endeavour to give the bees as little extra labour as possible, and especially that of propolis, which that of proper made hives and close fitting quilts is a means; but where that cannot be avoided I allow to remain, as by removing it the bees are caused the extra labour of replacing it, thus wearing them out and causing their loss. Propolis is not always to be had from natural sources, and the bees are thereby compelled to seek in strange places for a strange material to effect their purpose. Varnishes of every description they utilise, and only the other day I observed bees with white pellets upon their legs which at first puzzled me, until I discovered many bees at work upon some newly painted hives. About the same time I observed a paragraph in a daily paper setting forth that a bee was seen in a hotel flying about the flowers printed upon the wall paper, the observer believing that it was the accurate representation of the flower that lured the bee; but the fact is the bee had been led to it to extract for propolis purposes the gum employed to fix the colours in the paper.

Although bees will and do employ poisonous ingredients for propolis, very little of these, if any, ever get mixed with the honey. I wish I could with confidence say the same of extracted honey. Everybody who keeps bees knows how guilty they are of sipping water from every dirty pool. This liquid being stored in the cells throughout the hive is never sealed, therefore does not enter into honey unless when the apiarian uses the extractor, cannot then escape being mixed with the honey. I have been prompted to make these remarks from observation, and having the other day offered a hive of bees a piece of honeycomb to clean, which they did with the exception of about a dozen cells unsealed, containing something tasting like honey, but having a lustrous appearance, and which I could not get the bees to take, though they had evidently carried it in and stored it.—A LANARKSHIRE BEE-KEEPER.

### CONSTRUCTION OF THE TOP OF A FRAME HIVE.

KINDLY give me an opinion through your journal on the construction for the top of a bar-frame hive made (1) for feeding, (2) for viewing frames and taking them out.

(1), Frame, simply sides and ends standing over a quilt (the quilt having a hole 2 inches squares) made with three divisions, the end divisions covered with glass under which the bees travel on the top of the quilt to eat flour cake or candy. The centre division is made with a platform over which is placed a frame covered with perforated zinc for a feeding bottle. By simply raising the chaff bag the owner can see without disturbing the bees the state of their supply of cake or candy. This covered with another quilt can have a good thickness of chaff over it.

(2), A very shallow frame in which are strips of glass running the same way as frames, and close upon their tops, so that the inside may be viewed on the removal of quilt which covers the glass without letting out the bees, and on the removal of any one piece of glass the frame under it can be taken out without uncovering several, as must be necessarily done with a quilt.

(3), How often does a hive floor require to be cleaned?—BASIL, Norfolk.

[Like many other matters the construction and management of hives and bees arising from fancy is what gives zest and pleasure to the owner and not unseldom leads to great results, therefore no one has a right to find fault with another system so long as it does not interrupt the general progress of the science. The frame over a quilt is an old contrivance. We have used similar contrivances a quarter of a century ago, which are not so good as a piece of Indian matting laid close to the frames, then over it either meadow hay or straw to the depth of 4 or 5 inches, and close to the outer case, which should rise somewhat above the inner one; or if single cased the straw should be brought down to the lower edge of the hive. This arrangement does not interfere with feeding either with

candy or syrup; the former I do not approve of, as there is always some waste. The feeder I prefer is a combination one, which may be used either as a simple bottle feeder placed in a small block of wood with a piece of perforated zinc half an inch from its bottom resting upon the ledge formed by having the lower hole a little less than the upper one which receives the neck of the bottle, and of course the original plan of having a piece of net permanently and firmly tied over the mouth is much better and safer than the new idea of inverting a bottle over a tin shovel, on which the slightest jar may either cause to fall or leak. Or the bottle may have a bung with a hole through and widened from the inner side in which a ball acting as a valve is put and prevented from falling out by a cross wire on the end of the bung. A shallow wooden box is made to receive this bottle with a partition apportioning off the space for a trough an inch wide, and another the same width for the bees to ascend. This part has glass over top so that the bees can be viewed sipping the syrup, and the latter being glass shows how quick it is taken. If desired candy can be given to the bees in this space.

The other division is covered with a sliding lid, having a hole to receive the bottle resting upon the lid, so that strange bees cannot gain an entrance to the syrup. A pin rising from the bottom lifts the lid, and so allows the sugar to escape to a trough which is not more than five-eighths of an inch from the top of the hive. One of the essential points in feeding is that the syrup be within easy reach of the bees, and in such a way that they are not smeared with the syrup, and that the feeder be of a non-conducting material, but that very little syrup should lie in wood long, as it is more liable to ferment than when it is in a bottle so inverted.

If it is found to be inconvenient to feed from the top, this bottle does for an under-feeder. A thin piece of wood with one or more grooves one-eighth of an inch wide, having a square of 3 or 4 inches at one end having a ring of wood to support the bottle, is all that is required to make an efficient under-feeder. It will be observed that while using this as a top feeder it never causes a draught, as it is sure to do more or less in "Basil's" case, while as an observatory feeder a better cannot be desired.

The shallow frame with strips of glass for the purpose of viewing the "state of their supply" can but give a very inadequate idea of the real quantity. Never trust to having the necessity to examine during winter, but always give bees sufficient syrup made from best refined cane sugar in August, and have it rather thin than thick, and always boil for one minute. Glass over the tops of the frames is not commendable, condensing the moisture from the bees may cause mischief; besides glass in such a position soon loses its transparency. The principle of being able to extract any one frame without exposing the rest is good.

Floorboards as well as division boards should be cleaned and thoroughly dried now, then on the first mild day immediately after the bees have had a thorough airing from January on, when a second or third cleansing may be resorted to, but never unless on such mild days as the bees have flown. If perforated zinc floors were used they would not only do away with damp, but obviate the necessity of cleaning floors (at least oftener than once a year) unless in the frequent withdrawal of under sliding floor, which is beneficial in reducing the number of bee parasites.—A LANARKSHIRE BEE-KEEPER.]

### TRADE CATALOGUES RECEIVED.

Kelway & Son, Langport, Somerset.—*Annual Catalogue of Gladioli.*  
James Cocker & Sons, Aberdeen.—*Catalogue of Roses.*



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

**Chrysanthemum Blooms (Young Grower).**—We can only describe the blooms you have sent of fair average quality, and by no means can they be considered as representing a good "standard of excellence." Very much finer examples will win all the best prizes at the chief metropolitan shows. Still, as you are a "young grower," your flowers are creditable, and we advise you to persevere, as we feel convinced you will do better another year. Many worse blooms are exhibited than those before us.

**Balsam Tree (H. C.).**—In all probability the shrub to which you refer under the above name is *Cistus Ladaniferus*. The product furnished by the plants of this family is a resinous substance. It is obtained from the leaves of *Cistus Ladaniferus*, *C. laurifolius*, *C. Ledon* and *C. creticus*. The first is well known in the gardens of this country as Gum Cistus. Upon the leaves and branches of these shrubs a juice exudes which is collected by means of an instrument made with leather straps united together and arranged like



the teeth of a comb, and these are drawn over the plant. The juice adheres to the pieces of leather, and is afterwards separated by scraping with a knife. Formerly, according to Guibourt, it was gathered from the beards of the goats, whereon it collected while the animals browsed on the plant. It is a stimulant expectorant, and was formerly given in catarrhal and dysenteric affections. At present it is used in plaisters and sometimes for fumigation. It is frequently employed by perfumers in the preparation of cosmetics; and sometimes it is used as an ingredient in torches.

**Heating (J. E.).**—You ask us to do what we have never done, nor, as we have many times stated, we cannot do—that is, to name what “we consider the best boiler.” Since several boilers answer most satisfactorily we should by naming one do an injustice to others. As your tradesman is capable of fixing pipes he will be capable of selecting a boiler suitable to the position from the illustrated catalogues of vendors that may be had on application. With the particular boiler you name we have had no experience. The water will circulate very well in the syphon you show in your sketch, and if you have much heat being wasted you might with advantage carry out your project. Let the pipes rise gradually, and at the highest point insert a small pipe and connect it with an expansion box above, capable of holding about a gallon of water, and all will be safe; but without such provision the pipes would be in danger of bursting.

**Blue-flowered Shamrock (E. J. Warren).**—The above is the popular name of the blue-flowered plant you have sent us, its botanical name being *Parochætus communis*. Very rarely indeed do we receive specimens of this pretty plant, and we devote more prominent attention to it by publishing a figure and note pertaining to it by Mr. F. W. Burbidge:—“A graceful plant of trailing Trefoil-like habit, admirably adapted for planting out on sheltered rockwork in May in a position where it may droop over a mossy stove in a natural way and display its pretty little Pea-like flowers. It is by no means new, and by no means too plentiful in



Fig. 67.—*Parochætus communis*.

cultivation, nor is it quite hardy except in very mild climates near the sea; but it is well worth preserving in a cool house during the winter, giving it a suitable place outside as soon as all danger from frost has passed away. As a basket plant in a cool greenhouse it is most charming, its trailing shoots depending, as shown in our sketch, and bearing a profusion of torquiose-blue flowers, which remind one of those of the common Chick Pea (*Lathyrus sativus*), but are green, brighter, and more lovely in colouring. Readily propagated by division, it deserves a place in all gardens. It is a native of the Himalayas.”

**Celery Diseased (J. Green).**—Your specimens have been examined by Mr. W. G. Smith, who says—“The name of the fungus which covers Celery leaves with dark brown spots is *Puccinia apii*. When seeds are sown which have been gathered from diseased Celery plants the youngest seedlings suffer from the same disease as the parent plants. If alternate rows of seeds are sown, one row with seeds taken from diseased plants, the other from sound plants, the first row will exhibit diseased seedlings and the other seedlings free from disease. The same phenomenon holds good with seeds taken from diseased and sound Hollyhocks, with seeds from mildewed and clean corn, and with the seeds and seedlings of other plants which suffer from the attacks of parasitic fungi. We have, with many facts like the above in view, expressed an opinion (which has, however, met with great opposition), that

many diseases of plants, like certain diseases of animals, are hereditary. The spawn or mycelium of the fungus can sometimes be seen inside the seed. Our advice, therefore, always is—burn or deeply bury all infected foliage, stems, or roots, and never harvest seeds from diseased plants. In some cases of plant diseases, where the disease is known to be not hereditary, there is a strong tendency amongst certain breeds to take disease. In continental books the Celery fungus is now termed *Puccinia bullata*, the same parasite grows on Hemlock (Conium), Fool's Parsley (*Æthusa*), as well as on Celery, (*Apium*). The varieties have been distinguished as *P. conii*, *P. æthusæ*, and *P. apii*. We doubt if there is any remedy for plants so seriously affected, and we can only suggest applications of sulphur. Seed should be obtained from another source next year, and the crop grown in another part of the garden.

**Incurved Chrysanthemums (J. A.).**—As you do not say what kinds you desire to grow we give the names of thirty excellent incurved varieties for exhibition, as follows:—Prince Alfred, Golden Empress of India, Princess of Wales, Empress of India, Jardin des Plantes, Queen of England, Barbara, Princess of Teck, Hero of Stoke Newington, Mrs. Heale, Mr. Bunn, Lady Hardinge, John Salter, White Venus, Refulgence, Nil Desperandum, Mrs. G. Rundle, Prince of Wales, Alfred Salter, Venus, Mrs. Dixon, Cherub, Mr. G. Glenny, Princess Beatrice, Lady Slade, Bronze Jardin des Plantes, White Globe, Novelty, Lord Wolsley, and White Beverley. If you desire a selection of other sections please state them and the number required, and your letter shall have attention.

**Trellis for Peach House (Blandford).**—Three trees are a proper number to plant in front of the house for covering the trellis, and 18 inches a suitable distance to plant them from the front of the house. The trellis should be run up in a curve 18 inches from the glass and taken up the roof about 6 feet, calculating from the eave plate, it being an advantage if the upper 3 feet of the trellis be depressed 18 inches more from the glass than the other part, or be 3 feet from the glass at the top (vertical) part of the trellis, so as to admit of the trees on the back wall receiving light to their base. This will afford both sets of trees the fullest advantage, and is better than a trellis in front fixed 3 to 4 feet high for the front trees, though we have seen them doing fairly well on such trellises, yet we prefer the others. The trees on a curved trellis should be trained on the side next the glass, as they are difficult to train and tie when on the under. The trees on the back wall will ripen their fruit perfectly if you have the trellis in front low enough to allow of the light reaching them unobstructed. It would have been better had a part of the front lights been made to open so as to allow of through ventilation—indeed, it is a necessity of successful treatment, and ought to be provided, or the house will become much too hot when the sun is powerful.

**Names of Fruits (F. & A. Dickson & Co.).**—1, Golden Reinette; 2, Not known. (*W. & J. B., Stamford*).—There was no letter accompanying the three Apples. (*M. J. B.*).—1, Winter Pearmain; 2, Calville Rouge d'Hiver; 3, Borsdörfer. (*W. M. Rose*).—Early Nonpareil. (*R. C. W.*).—1, Blenheim Pippin; Cox's Pomona; 3, Beauty of Kent; 4, Golden Winter Pearmain; 5, Cox's Orange Pippin; 6, Gravenstein. (*Houghton Purchase*).—1, 2, and 4 appear to be Lady Henniker; 3 is Autumn Pearmain. (*F. Geeson*).—The Apples are not known. The Pear is Beurré d'Amanlis. (*By G. W. R.*).—A parcel containing two Pears thus marked on the address without any letter. The large Pear is Van Mons Leon Leclerc, the small one Seckle. (*J. E. Waiting*).—The Brown Pear is Chaumontel, the green one Napoleon, both very fine specimens. (*X. Loughgall, No. 2 Box*).—1, Hollandbury; 2, Not known; 3, Catshead undoubtedly; 4, Transparent Codlin; 5, Not known; 6, Longville's Kernel. (*L. T. T.*).—We can only identify 4, Brabant Belle-fleur, and 5, Catshead. (*E. B.*).—1, Dutch Mignonne; 2, Adams' Pearmain; 3, Syke House Russet. (*H. C.*).—1, Groom's Princess Royal; 3, Bergamotte Esperen; 5, Urbaniste; 6, Eyewood. (*Houghton Purchase*).—Single Apple is Wormsley Pippin. (*J. Crerar*).—1, Hanwell Sourcing; 2, Kentish Fill-basket; 3, Baxter's Pearmain; 4, not known. Several other parcels remain for examination on a future occasion.

**Names of Plants (B. B.).**—Specimens should be carefully packed in small boxes, not crushed into letters to be smashed by the post-offices punches. 1, Crushed; 2, Ficus Parcelli; 3, Polypodium aureum; 4, Nephrolepis exaltata; 5, Chorozeia, species not distinguishable without flowers; 6, Cannot be named without flowers (*G. Smith*).—Paulownia imperialis. (*G. J. W.*).—1, Maxillaria picta; 3, See illustration above; 4, Sedum carneum variegatum; 5, S. azoideum variegatum.

**Erratum.**—The Fern shown by Mr. Stottenhoff at the Horticultural Club was *Scolopendrium Kelwayi*, not *Helvezii*, as printed on page 373 last week.

#### COVENT GARDEN MARKET.—OCTOBER 29TH.

TRADE quiet, prices remaining without alteration, except Cobs, which are in good condition.

				FRUIT.					
				s. d.	s. d.			s. d.	s. d.
Apples .. .. .	½ sieve	2	6 to 3	6	Oranges .. .. .	100	8	0 to 12	0
Chestnuts .. .. .	bushel	0	0	0	Peaches .. .. .	per doz.	3	0	8
Cobs, Kent .. ..	per 100 lbs.	65	0	0	Pears, kitchen ..	dozen	0	0	0
Currants, Red ..	½ sieve	0	0	0	„ dessert .. ..	dozen	1	0	3
„ Black .. .. .	½ sieve	0	0	0	Pine Apples English ..	lb.	4	0	0
Figs .. .. .	dozen	0	6	1	Plums .. .. .	½ sieve	0	0	0
Grapes .. .. .	lb.	0	6	4	Strawberries .. ..	lb.	0	0	0
Lemons .. .. .	case	15	0	21	St. Michael Pines ..	each	0	0	7

VEGETABLES.									
		s. d.	s. d.			s. d.	s. d.		
Artichokes .. ..	dozen	2 0	4 0	Lettuce .. ..	dozen	1 0	1 6		
Beans, Kidney .. ..	lb.	0 3	0 0	Mushrooms .. ..	punnet	0 0	1 6		
Beet, Red .. ..	dozen	1 0	2 0	Mustard and Cress	punnet	0 2	0 0		
Broccoli .. ..	bundle	0 9	1 0	Onions .. ..	bunch	0 3	0 4		
Brussels Sprouts .. ..	½ sieve	0 0	0 0	Parsley .. ..	dozen bunches	2 0	3 0		
Cabbage .. ..	dozen	0 0	1 0	Parsnips .. ..	dozen	1 0	2 0		
Capsicums .. ..	100	1 6	2 0	Potatoes .. ..	cwt.	4 0	5 0		
Carrots .. ..	bunch	0 3	0 4	Kidney .. ..	cwt.	4 0	5 0		
Cauliflowers .. ..	dozen	2 0	3 0	Rhubarb .. ..	bundle	0 4	0 0		
Celery .. ..	bundle	1 6	2 0	Salsafy .. ..	bundle	1 0	0 6		
Coleworts .. ..	dcz. bunches	2 0	4 0	Scorzonera .. ..	bundle	1 6	0 0		
Cucumbers .. ..	each	0 2	0 4	Shallots .. ..	lb.	0 3	0 0		
Endive .. ..	dozen	1 0	2 0	Spinach .. ..	bushel	2 0	4 0		
Herbs .. ..	bunch	0 2	0 0	Tomatoes .. ..	lb.	0 6	0 0		
Leeks .. ..	bunch	0 3	0 4	Turnips .. ..	bunch	0 4	0 6		





### ROOT CROPS.

Now that the root crops are fast being gathered from the land, and results impress themselves clearly upon the mind, it is well to take note of success or failure in what has proved one of the most unfavourable seasons for root culture generally that we have ever known. In doing this extreme views ought certainly to be avoided—a failure in so exceptional a season should not materially influence future measures, unless, indeed, it excites to more earnest efforts to combat and overcome causes of failure with which it is possible to contend. For ourselves we have no instance of downright failure to record. It is true that Swedes are somewhat thin upon the land and undersized, but other crops are perfectly satisfactory, and late-sown Turnips have thriven so well under the kindly influence of genial autumn weather as to more than make up for the Swede deficiency. We attribute our success in some measure to early sowing, and to the use of half-dressings of farmyard manure and half of artificial manure specially selected for the purpose, obtained separately from the manure merchants and mixed at the farm. The manure used consisted of a mixture per acre of three-quarters cwt. nitrate of potash, half cwt. nitrate of soda,  $2\frac{1}{2}$  cwt. steamed bone flour,  $2\frac{1}{2}$  cwt. ground coprolite, and 10 to 30 tons farmyard manure. For Potatoes, Turnips, Parsnips, and Carrots the farmyard manure was spread and ploughed in, the artificial manure being sown and harrowed into the surface after the seed was sown, with the exception of the Potatoes, to which it was applied along the furrows before the double-breasted plough, so that the first growth from the seed tubers derived immediate benefit from it. The larger quantity of farmyard manure was applied to some exceptionally poor land with satisfactory results, the crop thriving and yielding well despite the drought. The large per-centage of water in farmyard manure is undoubtedly highly beneficial in a time of severe drought, and it should not lightly be dispensed with in root culture.

Who can place root crops in the order of merit? If we venture to assign the first place to Potatoes, how many of our readers will agree with us? and yet we do so place them for all farmers having suitable facilities for the timely and prompt disposal of the crop the moment it is ready for market. Why is it that the farmers of Cornwall, the Channel Islands, and the Scilly Isles devote so much land to the culture of Potatoes? Simply because the early maturity of the crop enables them to obtain a ready market and high price for it. For farmers generally second early Potatoes answer well under high culture, coming off the land in good time for a crop of Turnips or a green crop to follow. Such Potatoes generally ripen before the showery weather comes, which so frequently spoils the best of the late tubers. In any of the home counties dealers will buy the crop in the fields, taking all risk of loss and the expense of lifting the crop off the growers' hands. Such a plan is, however, by no means commendable, for surely the grower ought to be able to lift the crop more cheaply than a dealer, and it is the man who looks sharply after such trifles that succeeds in these hard times. Decide now how much land is to be planted with Potatoes next season, select the seed at once, and lay it out thinly in a light airy lodge or cellar where it is safe from frost, so that there is no exhaustion of the tubers by premature sprouting and a subsequent weakly growth.

Mangolds are certainly our most valuable root crop this year for feeding purposes. We have not ascertained closely the weight grown per acre, but the crop is a heavy one—remarkably so for the year, some of the roots weighing from 20 to upwards of 22 lbs. each. The sort is Sutton's Mammoth Long Red, and the weight of single roots grown in our thin soil compares not unfavourably with the thirty-six-pounders of deep rich soils in a good root season. Pulped and mixed with chaff, after a due amount of fermentation, Mangolds will be used as soon as the cattle are housed for the winter onwards to the spring. Dairy cows derive much benefit from this root, but it is our practice to begin feeding them with Carrots, which do much to improve the quality of the milk, and the cows thrive upon and are very fond of them. Red Intermediate Carrot answers best in our thin soil; the crop is heavy, the short thick Carrots telling well in bulk, and the crisp, sweet, juicy roots are all that could be desired in quality. No home farm should be without its winter supply of this somewhat neglected but highly valuable crop.

### WORK ON THE HOME FARM.

*Horse and Hand Labour.*—Early-sown corn has come up strongly

and well. Corn-sowing still goes briskly on, and with such favourable weather good seed beds are the rule and not the exception. Well will it be to press on the work so that the plants may be fairly strong and established in the soil before severe frost occurs. The dry firm condition of the soil renders the carting of roots much lighter than usual, and the roots go to the clamps fairly dry and clean. When roots are required for late folding upon the field in which they were grown, it is a saving of labour both in clamping and folding if the roots are put into small clamps in parallel rows across the fields, so that the labour of carting to the folds may be lessened or altogether avoided—an important matter when the land is wet and heavy in winter. Perhaps the easiest and best way of doing this for Swedes is to strike a deep furrow between every third or fourth row, according to the size of the roots, to take the roots on each side of the furrow, put them closely together in it, and then run the plough along both sides closely so as to turn soil upon the roots, a man following with a spade or Canterbury hoe to close any opening along the top of the ridge. Our first piece of meadow land is ready for manure, and carting is being done as fast as possible. The plump firm condition of the land has rendered this possible; it is not always so in October, the rainfall being usually heavy in this month. Carting upon our hill farm is so heavy a business that we are reducing it as much as possible, and using more artificial manure every year. The possibility and advantage of the substitution of artificial for farmyard manure was first of all forced upon us owing to our having a meadow atop of a steep hill nearly 200 feet above the cattle yards. A dressing of half-inch bones, followed by annual dressings of artificial manure, has brought this meadow into prime condition both for the production of hay and feeding purposes, and we have now no better land upon any part of the home farm.

*Live Stock.*—Grass continues so abundant that most of the cows and young stock have required nothing else, and are in high lusty condition. So mild an October is a great boon, making, as it does, such a material difference in the consumption of dry food and roots. Many farmers are already folding lambs upon Turnips; we have not done so, for acorns have been so abundant and the grass so sound and wholesome that very little scouring is perceptible among the lambs, and the sheep have much improved in condition. We have begun killing pigs of about 60 lbs. weight, and termed porkers. Such pork is tender and delicious, and is much liked at this season of the year. Bacon pigs are forward in size and condition, and killing and curing will be begun earlier than usual, of which we are glad, for the consumption of corn is exceptionally heavy in the last quarter of the year with pigs to fatten, as well as turkeys, geese, and other poultry.

*ERRATUM.*—In the article on Winter Oats last week, page 386, "sowing the crop" should be "saving the crop." Also in the Live Stock note "hooe worm" is misprinted "loose worm."

### FATTENING GEESE.

Will you please tell me which is the best way to fatten geese? I have eighteen that I want fat by Christmas. I have a large meadow, and am giving the geese Indian corn at present. Must I shut them up?—HOME FARM.

[A small enclosure of grass with a pool of water where the geese can have exercise without wandering away answers much better than confinement in a close pen. Feed regularly three times daily with ground Oats and Potatoes cooked and mixed with the Oats, using enough water to work it into a soft paste, and feed once with Maize. Barleymeal is sometimes used in preference to the oats, but we regard the oatmeal as most nutritious, and always use it with excellent results. A little experience will soon show you how much food is required each time, and it is best to have all the food given eaten at once each time of feeding, and not to have a quantity left to become sour and unwholesome.]

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat.  $51^{\circ} 32' 40''$  N.; Long.  $0^{\circ} 8' 0''$  W.; Altitude, 111 feet.

DATE.		9 A.M.				IN THE DAY.				Rain	
1884. October.	Barome- ter at 32 <sup>a</sup> and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.	
Sunday .....	19	30.350	53.2	51.0	W.	52.5	62.0	46.2	92.7	40.5	—
Monday .....	20	30.364	49.3	46.1	W.	52.2	54.8	40.2	64.9	33.4	—
Tuesday .....	21	30.385	48.4	43.9	S.W.	51.8	53.0	46.4	59.8	45.6	—
Wednesday ..	22	30.247	49.9	47.0	E.	50.9	57.6	42.1	75.8	33.0	—
Thursday ....	23	30.006	42.0	42.0	N.	49.8	54.1	39.3	66.6	30.1	—
Friday .....	24	29.936	45.1	44.4	N.	49.4	54.5	39.9	78.7	34.6	—
Saturday ....	25	30.124	35.9	35.9	S. W.	48.3	52.2	33.8	61.4	26.7	0.079
		30.202	46.3	44.3		50.7	55.5	41.1	71.4	34.8	0.107

### REMARKS.

19th.—Fine bright morning, fair afternoon and evening.  
 20th.—Fair and pleasant, but no sun.  
 21st.—Dull; slight fog.  
 22nd.—Dull early; fine bright day.  
 23rd.—Dense fog early and dull all day, except for a short time at noon.  
 24th.—Fine and bright.  
 25th.—Fog early; a little sun about midday; fair after, but barometer falling fast. The rain entered to this date fell between 8 and 9 A.M. on 26th.  
 A rainless week, following five rainless days in the previous one, is a very remarkable phenomenon for almost, if not quite, the wettest period of the year. The barometer keeps high and the temperature near the average.—G. J. SYMONS.





6	TH	Southampton Show (two days).
7	F	Havant Show.
8	S	
9	SUN	22ND SUNDAY AFTER TRINITY.
10	M	Stoke Newington Show (two days).
11	TU	Royal Horticultural Society's Fruit and Floral Committees at 11 A.M. Croydon, Lambeth, Putney, and Kingston Shows.
12	W	Royal Aquarium, Westminster. Bath and Colchester Shows.

## THE GRAPE SEASON.

(Continued from page 388.)

**W**HEN Mrs. Pince's Black Muscat was first sent out it was extensively planted, but so disappointing did it prove that probably one-half of those planted were rooted out again. In the gardens where I was acting as foreman it was at once given a trial, a very favourable position in the late vinery being assigned to it. It grew strongly, and in due course produced a crop of very fine well-shouldered bunches. The berries set evenly and swelled to a good size, but the colour was a sickly red, and altogether proved a disfigurement to an otherwise really fine house of Grapes. The next season no improvement was apparent, and the Vine was removed. Our experience was only too similar to that in numerous other vineries; but, as it proved, we erred in so soon cutting it out, as those who retained their Vines soon found it gradually acquired a stronger constitution, with the consequent great improvement in the colour. It appears the great demand for the variety led to its being propagated at a rapid rate, being, in fact, increased principally from green wood or growing shoots, much as we would propagate softwooded plants, and this completely ruined its constitution for several years. Now no great difficulty is experienced in colouring, though in some cases the foliage appears to be rather flimsy, and a slight shading is necessary in order to prevent scorching. All black Grapes colour best under a liberal amount of foliage, but with none is this more apparent than with Mrs. Pince's Muscat. It really forces well, and can be had well coloured and of excellent quality early in July; but it is of greatest value in a late house, and I am not wide of the mark when I assert that on the whole it is the best late Grape we have.

Lady Downe's is perhaps a longer keeper, but is, after all that has been written in its favour, somewhat fickle. At any rate, I could point to more better finished and heavier crops of Mrs. Pince's Muscat than of Lady Downe's, and I certainly prefer the quality of the former. Lady Downe's is apt to produce rather too small bunches, and in many houses scalding of the berries is very prevalent. We prevent this by leaving a little front and top ventilation on the house, and the pipes fairly hot during the nights, directly the stoning process is near completion. This season supernumeraries of this variety were allowed to get rather too dry at the roots after they were fairly coloured, and when the border was well soaked with water the berries began to crack badly, though other sorts under the same treatment did not do so. The same misfortune may and often does result where the borders are allowed to get very dry, under the impression that this is necessary to insure keeping. Under this treatment the berries commence shrivelling badly; this leads to a heavy watering being given, followed by cracking. In such cases it is a better plan to gradually remoisten the border, and also to keep a low temperature and a dry atmosphere for a

time, in order to avoid exciting the Vines in any way. The borders should never be dried, then shrivelling would seldom occur, and the Grapes would also keep well, providing a little heat was turned on in order to maintain a warm and dry atmosphere, this being most conducive to the formation of sugar in the berries, and without which they keep very badly.

This is especially the case with Black Alicante, and is the principal reason why it is both very inferior in quality and difficult to keep when grown under cool or Black Hamburgh treatment. To have it really good it should either be grown in a Muscat house or be given Muscat temperatures, and then we should hear less about its being little better than "bags of sugar and water." Grown with Muscats it is more fleshy, more sweet, and keeps well. The Black Alicante is one of the most attractive Grapes in appearance we have, and I believe I may safely say it will thoroughly finish a greater weight of Grapes than any other variety—in fact, perfect nearly double the weight than does Lady Downe's. It should not be closely spurred back, and often succeeds best under what is known as the long-rod system of training.

Gros Colman appears to be gaining ground in the estimation of various growers, especially now it is found that, besides being of noble appearance, it is also if properly grown good to eat. I recently tasted some at Cranmore Hall near Shepton Mallet that were surprisingly good, and Mr. Moore, the gardener, and his employer are delighted with it. It is worked on a Black Hamburgh stock, and this may have favourably influenced the scion. Be this as it may, a good crop has been well ripened under the same treatment as given to Mrs. Pince, Black Alicante, and other late Grapes in the same house. At Longford Castle near Salisbury Mr. Ward has several Vines of this variety, and all finished off good crops of really fine bunches, many weighing not less than 4 lbs., and no fault is found with the quality. The mistake sometimes made with this and other thick-skinned Grapes is in starting them late. Early in February is not too soon to start them, and this admits of steady forcing and plenty of time in which to colour and ripen them. If the ripening has to be done in September and October much fire heat must be given, and even then the chances are they will not contain sufficient saccharine matter to please the majority of connoisseurs.

Gros Maroc is now in great demand, and over-rapid propagation would appear to have also injured this recently reintroduced and decidedly valuable black Grape, or else why is such a difficulty experienced in establishing it on its own roots? When first received I heard that it was a curious variety to deal with, and it proved to be only too true, as the one I planted out refused to grow. Luckily, another that was inarched on a Black Hamburgh grew away readily, and this I find is generally considered the best stock for it. Have any of the readers of the *Journal of Horticulture* a healthy Vine of Gros Maroc on its own roots, or can they point to one? This variety produces small bunches, fair-sized berries, which colour remarkably well and are fairly good in quality. It is also said to be amenable to cool or Black Hamburgh treatment, and if this prove generally true it should be extensively grown by amateurs and all who possess one vinery only. I saw this variety in excellent condition at Longford Castle, and perhaps Mr. Ward and others will favour us with a few remarks upon it.

Alnwick Seedling is also considered an acquisition among late black Grapes, some authorities going so far as to assert that it is one of the best keepers. This, I am afraid, will not be found correct, as, from what I have seen and can learn, its season may be said not to extend beyond November, and I have seen several fine bunches shrivelling in October. Mr. Austin had it particularly good when at Ashton Court, but he does not think it a good keeping sort; neither do other good growers I could mention. I find it possesses a good



constitution, and does well on its own roots or worked on the Black Hamburgh stock; but something must be done to assist setting, or it will fail conspicuously. A small globule of moisture exudes from each pistil, and unless these are dispersed either with a syringe or dislodged with the hand they will fail to be affected either by its own or other pollen that may be used with a camel-hair brush in order to make "assurance doubly sure." Alnwick Seedling may be said to be of fairly good quality, but not equal to Mrs. Pince's Black Muscat.

Gros Guillaume is the finest of all the late black sorts, and if kept till February or March is of excellent quality. It is generally confounded with the Barbarossa. Gros Guillaume produces bunches rather sparingly, but they are of grand dimensions, and the nearly oval-shaped berries are of good size, colour well, and, as before stated, are good to eat. Some of the best bunches I have yet grown were produced from a graft on a Lady Downe's, which in its turn had been grafted on a Black Hamburgh stock. Only about four spurs were allowed to form on this graft, these being at the bend in the rod near the front of the house, and as a consequence the rod of Lady Downe's retained its character, and this may have had something to do with the free bearing and perfect colouring of the Gros Guillaume. The idea was conceived and carried out by my predecessor in that situation, and I was well pleased with the result of the experiment. Gros Guillaume is to be seen in very fine condition at Longford Castle, several of the bunches probably weighing not less than 10 lbs. each. The grafts or eyes were procured from Mr. Roberts, gardener at Charleville, County Wicklow, Ireland, who, it may be remembered, grew a bunch of this variety weighing 23 lbs.; but whether his form is better than others have I am not prepared to decide, but should think not.

West's St. Peter's is a Grape that I know but little about, but it is a great favourite in the few gardens where it is grown. Royal Ascot was to have been a perpetual bearer, but it proved remarkable only for the great number of ugly little bunches it was capable of producing. It is not worth house room, and the same may be said of the once popular and easily grown Black Prince. Chatsworth Seedling is grown in a few gardens, but I have only seen it well coloured at Heytesbury. Mr. Horsefield, however, thinks it is not needed, as it is inferior to the Madresfield Court and Mrs. Pince, which varieties it somewhat resembles.—W. IGGULDEN.

### GROWING DAHLIAS FOR EXHIBITION.

BEFORE proceeding to give a few practical hints to "Tyro" on this subject, I beg to say that I quite agree with "H. G." in his assertion, that he must "rise with the sun" if he wishes to obtain the much-coveted honour of a first prize at the Grand National Dahlia Show. There "H. G." speaks from "practical experience," as to produce such blooms as he exhibits one must simply live amongst his Dahlias. But there is no reason why "Tyro" should not exhibit next year with success if he does not begrudge two or three hours daily in attending to the plants. To my mind there is nothing more enjoyable than a walk through the Dahlias in the cool of the morning; besides, it is the best time to catch our enemies the slugs; and "Tyro's" reward for an extra hour's work morning and evening will be the height of his ambition—viz, a first prize at the Crystal Palace Dahlia Show.

In the first place, we will suppose that "Tyro" wishes to exhibit in the classes for twelve Show, twelve Fancies, and six or twelve Bouquet varieties. The plants should be ordered in April, so as to ensure obtaining useful examples early in May. As soon as they come to hand they will require shifting into a larger size pot—say 60's or 48's, according to the size of the plants, in which they may remain till the time comes for planting out. In a few days they can be placed in a cold frame and the lights taken off in favourable weather, as it is essential to have stout short-jointed plants by the end of May.

The situation is very important, as Dahlias cannot be grown successfully if they are crowded amongst other plants; they become drawn, and are much injured by insects. Let them have an open position to themselves, the ground being double-trenched in the winter. The beds should always be prepared by the beginning of

May at the latest, and a little Lettuce may be sown where the plants are to be placed, as slugs are very fond of it. The beds should be 4 feet in width at least, 5 feet would be better, with a footpath, and 4 feet between the plants. A stake should be put at each position before planting is commenced, as it injures the roots if done after. The stake must be strong and driven firmly into the ground, as Dahlias when fully grown are very heavy, and unless securely tied to a good stake they would be likely to be injured in rough weather.

The best time to plant is the last week in May; if done sooner there is great risk of the shoots being killed by frost, which we have had here up to the third week in May, and occasionally even in June. Besides, the plants are not losing time if they have been potted as advised. As soon as the planting is finished they must be watered sufficiently to settle the soil, and then at night have some fresh-slaked lime at hand to throw closely round the stems. This must be done frequently, especially after showers, when slugs come out in great numbers, and unless the utmost care is taken some of the plants are sure to be eaten. Search should be made for these pests morning and night; we have caught at least half a dozen on a plant at one time this season. About the beginning of July give them a dressing of half-decayed manure; it should be put on liberally and dug in round the plant—not too near, or the roots will be disturbed. Cow manure is best on hot light soils, as in hot dry weather, like we have had during the past summer, it keeps the roots cool. Give the plants a good watering over the beds, and it is astonishing what progress they will make. When growing fast more stakes will be necessary to secure the side branches, and thinning will be attended to, as cutting out large branches injures them. The Dahlia cannot be grown to perfection if allowed to carry the whole of its branches. Six or eight at the top, and the same number at the bottom, according to the space the plants have, are sufficient to produce a dozen good blooms.

Disbudding requires care and discrimination. Select those with a round hollow in the middle, and avoid all with deformed centres. Some sorts want very little, and others much disbudding. For instance, a large flower like the Rev. J. B. M. Camm may be allowed to carry as many as three blooms on each branch, merely rubbing out the small shoots as they appear; while a medium-size flower like Sunbeam must only be allowed one. If the weather is hot and dry they will need watering, as the buds are swelling. Water must be given liberally over the bed, and once a week a supply of liquid manure will be a great help.

We will now suppose we are within a fortnight of the show which we are preparing for, when the Dahlias will need much attention. Early in the morning earwigs should be searched for, and if this is neglected it is likely that some of the buds we are depending upon for our finest blooms may be completely spoiled. Pieces of Bean stalks placed among the plants make excellent traps; but the simplest way to catch them is to put a pot on the centre stake, place your hand round it, remove the pot, and destroy them. The buds must also be protected with cotton wool tied lightly on the stalk, just under the bud; and in the evening, as a further safeguard, pure indiarubber which has been dissolved by heat should be put round about 6 inches from the top, just like a ring round the stalk. Remove any leaves which would form a bridge for earwigs and caterpillars, and you will then feel tolerably safe from these enemies. If the weather continues hot syringing the plants will be very beneficial, and as the blooms expand shading will be necessary.

A word of caution as to cutting the blooms may be profitably given. Do not cut until after eight o'clock at night, as after a hot sultry day the blooms are quite limp; whereas, by waiting till the dew is falling, they freshen wonderfully. In reference to the number of plants required to show twelve blooms from, I advise not less than fifty, in twenty-five varieties, and I append a list of the finest Dahlias in cultivation.

*Show Varieties.*—Clara, Emily Edwards, Ethel Britton, Georgina, Canary, George Rawlings, Goldfinder, Henry Walton, Hope, Harrison Weir, Imperial, James Stephen, James Vick, Joseph Green, John Standish, J. C. Quennell, John Henshaw, Joseph Ashby, Mrs. Harris, Mrs. S. Hibberd, Mrs. W. E. Gladstone, Mr. G. Harris, Prince Bismarck, Rev. J. Goodday, Sunbeam, and William Rawlings.

*Fancy Varieties.*—Barnaby Rudge, Chorister, Enchantress, Egyptian Prince, Duchess of Albany, Gaiety, George Barnes, Fanny Sturt, Galatea, Hercules, Henry Glasscock, Hugh Austin, Jessie McIntosh, James O'Brien, Mrs. Saunders, Mrs. N. Halls, Miss Browning, Oracle, Peacock, Professor Fawcett, Polly Sandell, Rev. J. B. M. Camm, Ruby, Gem, and Wizard.—JOHN RAWLINGS, Romford.

**EARLY-FLOWERING REFLEXED CHRYSANTHEMUMS.—EMPEROR OF CHINA.**—As there is no occasion to house Chrysanthemums before October, is there any objection to classing all Chrysanthemums that bloom in the open air before, say, mid-October, as early flowering?



Many people when they speak of "early-flowering varieties" mean those that bloom before mid-September. It would be well if the point was authoritatively defined. There are very few really good early-flowering varieties, and before October there is little occasion for them. *La Neige* is probably the best pure white early-flowering. As I had half a dozen of *Emperor of China* in bloom on the 10th October in the open air, and as it is free-blooming and fine-shaped, if the definition I propose was acceptable this beautiful silvery white variety would be classed among the above in future.—W. J. MURPHY, *Clonmel*.

## NATIONAL ROSE SOCIETY'S CATALOGUE.

### A SUGGESTION.

MAY I through the Journal suggest to the Committee of the National Rose Society the desirability of adding in future editions of the catalogue the pronunciation of the foreign Rose names therein? That such a guide is wanted all rosarians will acknowledge, at least if not for themselves, for their neighbours. Charles Lefebvre has probably by this time become accustomed to hear himself addressed as "Le-fave," "Le-feve," "Le-five," and "Le-fe-ver," and "Senna-Tea Vaisse" may have forgiven Canon Hole's friends for so calling him, though to be sure it was done in a moment of jealousy; but the proprieties should not be so outraged. With such a guide even "Et-ienne Lev-et" may in time hear her name without a shudder, "Du-py Jam-in" rejoice in being understood, and "Glory-de-Di-John" be persuaded to die a natural death.

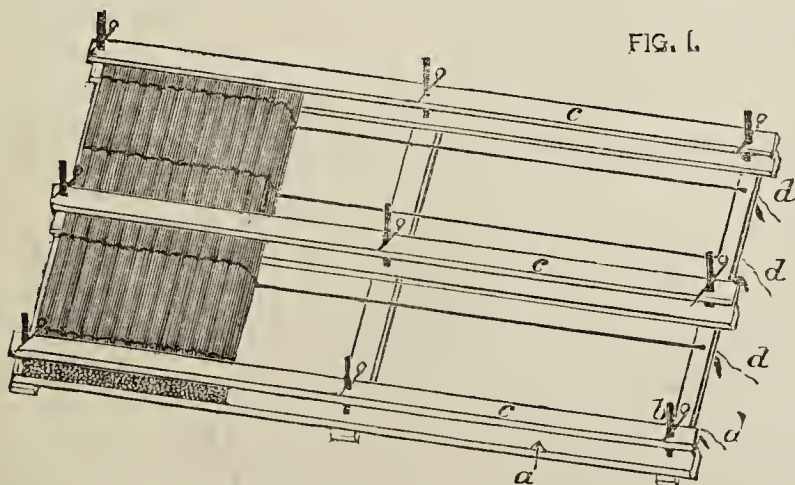
By-the-by, would Mr. D'Ombrian undertake the work in the "Year-Book?" A much more extended list could there be given, and none of us need then debar Heinrich Schultheis from entering our garden, as one of your correspondents has done, because we could not pronounce his name.

As most people possess an English dictionary, and thereby tacitly admit an imperfect acquaintance with their own tongue, I need not hesitate to sign my name to this letter. Moreover, I have written solely in the interests of others. Candid people tell me I have a very great beam in my own eye, but I do not believe them.—W. R. BLAND.

## WORK FOR WINTER WEATHER—STRAW MATS.

NOTWITHSTANDING the beautiful weather we have been enjoying, the rapidly shortening days, the autumn tints of the woods, and the soft rustle of the faded leaves as they are wafted on the gentle breeze upon our soft green lawns, warn us that it is but the calm before the storm, and that gloomy winter may burst in upon us at any time. It behoves us, then, to be prepared with something to ward off its frosts and piercing winds. The superiority of straw mats to the ordinary Russian mats as a protection from frost I think will be admitted by all who have been accustomed to the use of both. I consider that a good well-made straw mat  $1\frac{1}{2}$  inch thick will be equal, if not superior, to three ordinary mats. The stiffness of the former also allows of their use in a variety of ways, with but little trouble and less risk of their being blown about by wind and consequent damage to the plants over which they may be placed. The following mode of making these may differ a little from that already advanced in these pages; but except that it is like the industrious Scotch woman's stocking, always handy to take up or put aside at a moment's notice, I do not claim any particular advantage for it.

The construction of the frame, *a*, fig. 1, will readily be seen. It is simply three laths 3 inches by half an inch, fixed together by three similar pieces nailed to them at right angles. At the junctions of the laths holes are drilled sufficient to admit of pegs three-quarters of an inch in diameter being inserted as at *b*. These pegs should be made of ash or other hard wood, should be 6 inches long, and be made with a shoulder at the base.



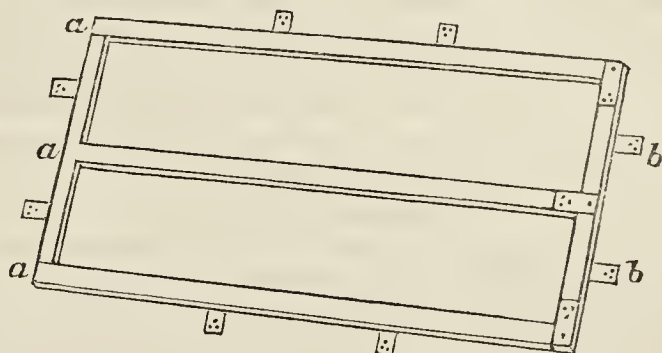
After placing them in the holes they should be firmly secured by driving a nail or small peg through it flush with the top side of the frame. This completes the frame except three more laths exactly like the others, with corresponding holes, and which are shown in position, *e, e, e* in our drawing.

The best material to use is good clean Wheat straw, the longer it is the better. It ought to be secured when being carried out of the harvest field or when being threshed in the stackyard. It should be taken in handfuls, the butt ends put straight by holding them upright and tapping them on the ground. The ears are then cut off straight, placing them on a sheet

to be conveyed to the thrasher, and the straw laid straight and tied into bundles. In commencing to make a mat first fix four lengths of tar string as shown at *d, d, d, d*, passing them through holes in the frame, and securing them by a peg from the under side. A few inches of loose end should be left at each end for finishing the mat with when taken off the frame. Place the frame on the ground, and lay the straw evenly all over it, commencing at one end and laying it in small handfuls alternately with the butt ends to each side of the frame. When filled the three laths, *e, e, e*, are slipped over the pegs, pressed down with the knees, and a piece of wire placed through a hole in the peg to keep all secure, as shown in the fig. The frame with the straw in it may then be set on its side between two men or lads, and with an ordinary packing needle it is stitched from side to side, the middle string being each time brought over the stationary strings and pulled tight. The stitches should not exceed an inch long, and when done the mats should be about an inch or an inch and a half thick. When taken out of the frame a straight piece of bean-stick should be tied on to each end by means of the loose ends of string. Always roll the mat up with the stationary strings inwards, otherwise the latter will be more apt to break because of its being tight on the frame. As I stated before, the great advantage of this plan is that when once the frame is filled with straw it is always ready and need never be in the way, as it can be hung up or stood against the wall of a shed ready to be taken up again when showery weather or frost or snow prevents outdoor work being proceeded with. I should have mentioned that these may be made of any width to suit frame lights; ours are 3 feet 6 inches by 8 feet long. It is better to have them made about 1 foot 6 inches longer than the lights to be covered, so that they may hang over each end.

Another mode of making useful straw shelters is shown at fig. 2

FIG. 2.



Three laths 3 inches by half an inch and two of the same dimensions are cut exactly square at the ends. They are simply laid together as shown at *a, a, a*, and fastened together with strips of tin as shown at the opposite end. Similar pieces of tin are fixed to the under side, as shown at *b, b, &c*. The straw is then laid on the laths in the same way as for making an ordinary mat; another frame exactly the same is laid on the top, the slips of tin, *b, b*, are pulled tight over it and made secure, so that the straw is held firm between the two. Two or three long screws should be put into the centre laths to keep these together. The straw is then cut straight with the outside of the laths, and the thing is finished. We have a few of these 3 feet 6 inches by 8. They are light enough for men to move about without assistance, are very useful in many ways, and will last for many years, as the straw can be removed when it decays. These are excellent mats for protecting any plants in turf pits, no supports of any kind being needed, and there is little danger of their being moved by wind. Again, they can be converted into an excellent temporary shelter for Chrysanthemums or other tall plants by supporting a row on each side on their sides and placing others over the top. They can be stood against low walls to protect Peach or other tender bloom, and what better could be had for laying on the roof of a small Cucumber house during severe frosty nights in the depth of winter? They are equally serviceable for shading a seed bed or cuttings inserted in the open ground in the heat of summer.—R. INGLIS.

## GIVING LIQUID MANURE.

It is now some years since I decided to use liquid manure as sparingly as possible during hot weather, and that is what I take "Thinker" to mean. This season none was used from the beginning of May until August, and then only outside and well washed in, but with very marked benefit. This of course is "Non-Believer's" theory, and it thus appears that both are quite right.

When I read "Thinker's" remarks on giving liquid manure during winter I was somewhat encouraged. Corroboration in an unusual practice is often a great help. On this is based my interest. If applying such liquid during autumn, winter, or spring is found to be so beneficial, then I venture to say there must be some grounds for suspicion during the summer season. I have very carefully tried both systems, not wishing to be dogmatic. I have no hesitation in my mind, and have made still more provision for carrying out the winter supply in the shape of a cement tank beneath our usually large manure heap. Having a good supply of water, we simply throw the hose on to the top, and so let the water pour through into the tank to be pumped up as required. This I find very strong and almost free from offensive smell, which is something in our favour, and it may be used with safety even during hot weather inside or out. Guano I consider extremely dangerous, except in very showery weather, and prefer to dig it in during spring, while to be on



the safe side with pot plants we use Clay's fertiliser liberally. I would advise all who have not done so to give the winter system a trial to wall fruit, bush fruit, Strawberries, Roses; lastly, but not least, to specimen evergreens, and they will soon show signs of improvement.—LATHYRUS.

I THINK I had now better leave "Thinker" to the verdict of your readers. He does not attempt to deny that the practice he condemns as fraught with destruction is in common operation among farmers and gardeners every day without any damage happening afterwards, and that is about all I have advanced. "He had almost forgotten 'Non-Believer,'" "Thinker" assures his readers this week. If the said readers can credit that statement, after reading the four and twenty paragraphs devoted by him to "Non-Believer's" four or five, let them. I observe "Thinker" has parted with "the horse" on which "his case theoretically" was saddled. That theory was simply this, and it is too good to be lost sight of so soon:—If a horse when thirsty drinks so much water containing so much arsenic, it may die; therefore if a Chrysanthemum gets so much guano (which is not a virulent poison, but a food) diluted in water it will drink of it till it dies also." The facts are that we do know that a horse will die if it gets a sufficient dose of poison; but neither "Thinker" nor anyone else ever saw a Chrysanthemum killed by being watered with guano water at ordinary strength when it was dry—no, nor even injured. I must say to "Thinker" what Dr. Johnson said to his loquacious interlocutor, "My friend, you are wrong." Here ends my contention on this subject.—NON-BELIEVER.

### AMONGST THE CHRYSANTHEMUMS.

Most of the public exhibitions of Chrysanthemums in and around London are now in their best condition, and intending visitors should choose the first opportunity of inspecting them. There are still, of course, many flowers to expand, and some of this year's novelties are scarcely sufficiently advanced to permit a correct estimate of their value being formed. All the earlier sorts are, however, in their true characters, and some decided improvements have to be chronicled.

#### FINSBURY PARK.

Apart from the nurserymen's and amateurs' collections, that in the Finsbury Park is unquestionably the largest and best in London, and for several years has attracted thousands of visitors during the few weeks the display is open to the public. This season the plants and blooms are even better than usual, the former more healthy and better clothed with foliage, and the blooms larger, cleaner, and brighter. The commodious exhibition house erected to accommodate the plants is 100 feet long and 18 feet wide, and contains 1400 specimens, the majority 3 to 6 feet high, with a few exceptions of the Madame C. Audiguier type, reaching to nearly 8 feet. They are arranged to form two sloping banks with a path down the centre margined with Pompons, amongst which the charming White Scour Melanie predominates. Much taste has been displayed in the arrangement, the bright and quiet colours being well proportioned and intermixed to produce a uniformly beautiful effect.

A large number of varieties are included, representing all the best of the older forms and most of the Continental and English varieties. The latter chiefly comprise those raised by Mr. Alfred Salter and being sent out by Messrs. J. Veitch & Sons, Chelsea, and several are likely to take a foremost position amongst the most favourite varieties for decorative purposes. One of the best of these is Annie Holborn, a Japanese variety with blooms of large size, the florets flat and spreading, yellow with numerous red dots. It is a substantial handsome flower, and the plant is of good habit. Another of a similar type, but with smaller blooms, is named Distinction, the florets being broad, yellow tinged with deep red, well meriting its name. Of the Continental varieties, all of which are Japanese, the following are noteworthy:—Mons. Boyer, a pretty and delicately coloured form, the florets fluted, erect, and spreading, of a clear bright rose tint, very fresh and distinct; Helvetie, a most floriferous variety, with blooms of medium size, the florets mostly fluted or occasionally nearly flat, of a fine rich rosy purple colour. This will probably become a favourite decorative variety, but the blooms appear to be rather small for exhibition. Richard Larios has flat florets of a rosy crimson hue tipped with white, full and good. Source d'Or is a very beautiful free variety, with medium-size blooms, the florets fluted or thread-like, and bright yellow. Margot, recently certificated, is in capital condition at Finsbury Park as elsewhere, the broad fluted and recurved florets being of a rosy salmon tint, yellowish or nearly white in the centre. It is a substantial handsome variety, that would show well on an exhibition board. Of older varieties amongst the Japanese, which are now chief favourites with the public, the following are especially good:—Com'te de Germiny, James Salter, Striatum, La Frisure, Bras Rouge, Rosa Bonheur L'Incomparable, J. Delaux, and La Nympe.

Amongst the incurved there are some excellent blooms of the leading show varieties, such as Prince of Wales, Alfred Salter, Golden Beverley, uncommonly fine; George Glenny, Mrs. G. Rundle, Empress of India, and Queen of England. Mr. Orchard's Lord Wolseley keeps its character well as a handsome bronze Prince Alfred; and Lord Alcester is just a shade lighter than Golden Empress of India. Bendigo, however, as grown at Finsbury Park is identical with Mabel Ward. In reflexed flowers King of the Crimson takes the foremost place both in size and richness of colour, while among the Anemones some remarkable blooms of Gluck are notable, large, clean, and clear in colour, such as, indeed, are not likely to be surpassed at exhibitions this season. In all about 400 varieties are

grown, and the condition of the plants is sufficient evidence of the care exercised in their culture.

#### INNER TEMPLE.

Probably no establishment has done so much to popularise the Chrysanthemum as a town plant as the Inner Temple Gardens, and therefore a considerable degree of interest attaches to the collection, which is visited during the season by great numbers of people. Mr. Newton this season has a pleasing display of dwarf profusely flowered plants, effectively arranged to form a low sloping bank with the path at the side. The plants are from 3 to 6 feet high, a few being as much as 7 feet in height, and all are healthy, well clothed with foliage, and bearing abundant bright blooms not generally of remarkable size, but clean and fresh, and being so numerous they produce a bright and beautiful show. Both incurved and Japanese are largely represented. Of the former there are many good blooms, some samples of Prince Alfred being magnificent. Empress of India, Golden Beverley, and all the Rundle family are good, with many other well-known varieties of this type. Arigena is still grown there under the name of Inner Temple, though it has been conclusively proved that they are identical. The Japanese are very abundant, and represent some handsome varieties both new and old. The rosy purple Helvetia, already noticed, is flowering freely, as is also the somewhat similarly coloured Rosa Bonheur is very good. L'Africaine is bearing some extremely large blooms, but is there named George Gordon in nearly every instance, an error which should have been corrected, as it is misleading to the public. Of newer Japanese several are in extremely good condition, very notable being the following:—Salteri, one of Messrs. Veitch's introductions, of a deep crimson colour, the under surface gold, and the florets incurved in the centre. The blooms are of moderate size, but freely produced and very pretty. Etoile du Midi, florets flat or slightly fluted, recurved, bright red, the under surface and tips being yellow. Triomphe de St. Martin is a pretty variety, but scarcely distinct from Richard Larios, being similar in the shape of the florets, and the colour is a rosy pink tipped with white. Amongst the Anemone varieties Gluck and Prince of Anemones are particularly good, and numbers of other varieties are noteworthy.

#### MIDDLE TEMPLE.

The display in these gardens, though equally beautiful, is of quite a different character. The plants are much taller, and the object has evidently been to obtain large blooms in preference to a greater number of smaller ones. Mr. Wright has been successful in this respect, for he has some flowers of fine substance, and these are sufficient of themselves to produce an exhibition of much beauty. The plants are 4 to 8 or 9 feet high, and form a steeply sloping bank from the path up to the roof of the house in which they are arranged. Some of the tall-growing varieties are also planted at the side and trained up the roof, from which the flowers hang in a pleasing manner. Here, again, amongst the incurved varieties Prince Alfred is very fine, quite up to exhibition standard; Barbara is also in good form, and all the leading varieties of this section are well represented. Japanese varieties are, both in numbers and quality, very satisfactory, imparting those rich and bright shades of colour to the general effect, without which Chrysanthemum shows would be so dull. The early and free James Salter is in first-rate condition, as well as its white companion, Lady Selborne, which is there very true and pure. Joseph Mahood, one of the Putney varieties, is flowering well, but its yellow narrow floret blooms have none of that red overlying which is usually seen. Tisiphone, as in several other collections, is not in very satisfactory form, but L'Africaine, also termed George Gordon, as in the neighbouring garden, is equally large and substantial. Amongst other varieties in fine form are Cry Kang, Dr. Macary, Golden Dragon, Comte de Germiny, The Cossack, very bright; Bouquet Fait, Angèle, Margot, Salteri, M. Moussillac, and La Charmeuse. Reflexed, Anemone, and Pompon varieties are fairly good, but the last-named seem to be unduly neglected in many establishments. They are, however, most useful in a conservatory or greenhouse either for grouping or cutting, and some of the Anemones are similarly useful.

#### MESSRS. H. CANNELL & SONS, SWANLEY.

An extraordinary display of Chrysanthemums is now provided at the "Home for Flowers," unquestionably the most extensive of its kind around London. Four span-roof houses, each 100 feet long and 12 feet wide, with a path down the centre, are devoted to the plants, which are arranged in compact dwarf banks, thus forming a continuous run of 800 feet. As may be readily imagined, some thousands of plants are employed to furnish such a wonderful exhibition, and Mr. H. Cannell states that he has representatives of nearly 900 varieties, including all the best of the old forms, a considerable number of the new continental variety, together with the recent English-raised varieties, and an American race of single and semi-double forms. Great care is exercised to ensure the names being correct, and the stock is now being thoroughly examined to correct any errors that may have hitherto passed unnoticed. It is most difficult to perform this satisfactorily, as new varieties are being continually sent out, and unfortunately are not always so distinct from others as might be desired. So great, too, is the demand for novelties, that the most trifling variation will find eager purchasers, and it is not easy to convince some that certain varieties are synonymous. Both growers and raisers are often misled by the appearance of early blooms, and it may be frequently seen that an early and a later flower on the same plant are so distinct that they might be, and possibly occasionally are, staged as different varieties. In a careful examination of the newer varieties some names have been discarded,



such as Bruce Findlay, which is found to be the same as Lord Alcester, *alias* Princess Imperial. F. A. Davis again is found to be identical with Jeanne Delaux, and Japon Fleuri is so near it that the three may be fairly taken as "too much alike." Madame Berthie Rendatler has made her appearance under the English name of Curiosity, but the latter must be discarded, as the other is the older. Richard Carios has an exact counterpart in Progrès Toulousien; while R. Ballantyne as grown at Swanley cannot be separated from Source Japonaise. These are only a few examples of the reformation being most satisfactorily effected.

The plants in all the houses are dwarf and healthy, with flowers of medium size, but abundant and bright in colour. Of the newer varieties there are some fine specimens, the blooms being mostly in very good character. Amongst the incurved there are not many additions, though Lord Wolseley deserves a word of praise as one of the best of the type which we have had for several years. It possesses all the good qualities of its parent—size, substance, and symmetry of form, and is, moreover, quite distinct in its rich bronzy colour. President Sanderson, a sport from Lady Slade, is also a promising variety, exactly similar in build and floret to the parent, but differing in its clear bronzy amber hue. In the Japanese group the novelties are much more numerous, including all Mr. Salter's, Bouchard's, De Reydellet's, and Delaux's introductions. A very handsome variety is that named Cullingfordi, new this season; it has flat florets after the style and colour of Père Delaux, but darker and richer than that variety, the colour being an intense crimson, almost maroon, the under surface of a bronzy hue. The bloom is of moderate size, but full with substantial florets. Flamme de Punch, for which Messrs. Cannell & Sons recently received a certificate from the National Society, is a handsome variety with large full blooms, the florets slightly fluted, yellow suffused with bright red, distinct and good. Margot, another which has been similarly honoured, also has flat recurved florets of a rosy salmon colour, large and full, likely to become a good exhibition flower. Many others might be noted, such as Riche Bouquet, rosy crimson tipped with white, Source d'Or, golden yellow; M. Blanc in the way of Dr. Macary, very soft mauve pink; L'Or du Rhin, William Robinson, Le Chinois, and Alexandre Dufour being all of fine quality, and all are introductions of the last two or three seasons. Reflexed, Anemones, Pompons, and single varieties are strongly represented, the last named forming a very interesting and novel group. They are mostly rose, crimson, or white, with yellow centres, and are extremely light and graceful, admirably adapted for arranging in vases

MESSRS. J. VEITCH & SONS, CHELSEA.

A pretty display of well-grown Chrysanthemums in this nursery is well worth a visit, and they are now fast approaching their best condition. In the Camellia house two large rows of the new varieties are arranged, many of which are extremely promising. Some of them have been already noted, but as several are not yet fully expanded farther notes may be reserved until another issue. A large span-roof house is also devoted to the older favourites of all sections, and there are some exceedingly fine blooms amongst them. The plants are healthy and floriferous, producing a beautiful effect.

MESSRS. DIXON & CO., HACKNEY.

In the nursery of the above firm near to Hackney Downs station, there is an interesting and attractive exhibition of Chrysanthemums. A span-roof house 120 feet long and 20 feet wide, contains about 2000 plants of 400 varieties, comprising a large number of new forms and all the proved older sorts. They are mostly dwarf, but strongly grown plants flowering freely, the blooms of medium size, and generally good in colour. The arrangement is quite distinct from that usually adopted, and deserves much commendation. The plants are placed in semicircular groups alternating on opposite sides of the house, and connected by lines of dwarfer plants, the path thus having a serpentine form. This diversifies the effect considerably, and is a departure from the stereotyped system that might be advantageously imitated in many other establishments.

Several other firms have more or less extensive shows of the Autumn Queen, amongst them being Mr. C. Turner, who annually produces an exhibition of great beauty in his Slough Nursery. Messrs. J. R. Pearson and Sons, Chilwell, Notts, have a house 100 feet long and 30 feet wide devoted to Chrysanthemums, 800 plants being included; and as mentioned last week, Mr. Davis of Camberwell has a show of unsurpassed attractions.

### VINES IN AUTUMN.

ALL Vines are now assuming their autumn habits; of some the leaves have fallen, white others are changing their colour. Vines started into growth in January and the early spring months have a peculiar habit of retaining their leaves almost as late in the autumn as those which only commenced growing in April and May, but the condition of the soil at the roots has much to do with this. When the borders are kept very moist the leaves remain green much longer than when the borders are allowed to become rather dry. Anyone wishing to bring the leaves off their Vines very early in autumn need only to dry up the borders and it is done, as the leaves will quickly become yellow and fall. Where the wood is hard, brown, and fairly well ripened this will do little or no injury; but if the wood is green and it shrivels through dryness at the roots it will be very injurious. I do not approve of drying the border to make the leaves fall, and those who have still the leaves on the Vines which they may wish to begin forcing in two months' time need not be in any hurry to get the leaves off, as they will fall naturally during the next few weeks. It is bad practice to pull numbers of green leaves from the Vines in autumn. The foliage may be much too thick to allow sun and

air to penetrate readily, but this would not be so if the branches had been properly distributed in the early season. In the autumn all Vines in a healthy condition are inclined to make many small side growths, and it is very often these which obstruct the light, and I may say that no harm can be done by cutting off all these as long as the main shoots and their leaves are not broken. The little shoots I am now speaking of frequently do much harm in vineries in autumn. They grow up against the glass, and there collect and retain moisture, which proves very detrimental to the ripe Grapes. For Grapes and Vines to do well in autumn there should be a free current of air between the roof and the foliage. In the case of Vines with the fruit cut, it may be thought it does not matter; but they cause a stagnant atmosphere everywhere, and this is as injurious to the ripening of the wood as to the keeping of the fruit. There is nothing to surpass thoroughly ripened wood for the production of a heavy and good crop of Grapes, and considering the grand season and the beautiful autumn we have had, badly ripened Vine wood should be scarce this autumn, and yet probably there are many Vines which have been so crowded with leaves during the best part of the season that the wood is yet far from being hard. In such cases a complete cutting away of the small shoots and providing a warm dry atmosphere will soon put them in good order, but it does not speak well for the cultivator who has to resort to such assistance this autumn.

Whether the Vine borders should be allowed to become quite dry or not when the Vines are at rest in winter is still a doubtful question with some, and where it is decided to dry them off I suppose the process will be commenced now; but no good will ever be derived from this, as in a dry soil many of the young and most tender rootlets soon perish, and this is an immense loss to the Vine. A medium condition of moisture is the right one for Vines in winter, and it is a simple matter to find out and adhere to this. Vines with their roots wholly inside and occupying a large surface of the border may puzzle their owners in watering them, so as not to make the surface of the border very wet and thereby cause decay amongst the Grapes; but this is easily overcome, and it is much better to risk watering than have the borders too dry.

Watering should be done early in the morning of a fine day, and until night keep a good fire on and the ventilators open. This may be repeated for a day or two, and the surface will soon become dry. As a rule it is more through decaying leaves being allowed to lie about, and damping or decaying berries remain in the bunches, that keeps the atmosphere moist and general decay in the fruit, than any dampness on the surface of a well-kept border. It is often asserted that it is more difficult to prevent Grapes decaying during October than in any month of autumn or winter; but I do not think there can have been much trouble with them this October, and I do not anticipate it will be a bad autumn for Grapes keeping. With attention to the falling leaves, and an inspection of the bunches twice a week or so to remove any berries which may be decaying, the labour in keeping and loss through decay should be very trifling.

Autumn ventilation is worthy of special attention. Indiscriminate air-giving will never do where Grapes are hanging. Draughts of cold air are as bad as showers of rain on the fruit. Currents should be avoided, unless on very fine days, when the top and bottom ventilators may be well opened; but in damp cold days only the top lights should be opened, and then only when no rain is falling. In wet weather it is best to keep the vinery closed altogether, unless the ventilators are so arranged that they can be opened to a certain extent without the rain coming in. Heat and cold are bad for Grapes at this time. To fire hard one night and have little or none another, when the outside conditions are the same, will soon cause the Grapes to lose condition and decay. It is much better to have them always in a temperature of 55° or 60° than to have the thermometer at 50° to-day and 70° to-morrow.

Now is one of the best of all times to clear Vines of insects. They do not appear to have taken up their winter quarters yet, and it is important to destroy them before they do. The general way is to advise the use of petroleum, adding one wineglassful of it to four gallons of water, syringing it on and allowing it to remain on for five minutes or more. We have a different system—four wineglassfuls are put in four gallons of water, which is syringed on and off again as soon as possible. It need not remain on five minutes to kill the insects. It will kill mealy bug and scale at the strength I name without injury to the leaves or any part of the Vine.

It is yet too early to prune Vines which will not be started into growth until the new year. The best of wood will ripen yet, and if pruned three or four weeks previous to the time of starting all will be satisfactory. Lifting the roots of old exhausted Vines, putting new material under them, and treating them in such a manner that the old Vines become new in their free way of producing fruit, is a practice many are fond of indulging in. We do not look upon it with the utmost favour, as, although the operations may be done successfully enough, the expenses are never much less than if the Vines had all been new, and in the long run the latter invariably prove the most satisfactory.—A KITCHEN GARDENER.

### REVIEW OF BOOK.

*The Fruit Manual.* By ROBERT HOGG, LL.D., F.L.S. Fifth Edition. No. 2.

I now proceed to a very interesting part of this book, that part which treats of Pears. In the advance of gardening, Pears will and must advance, and for several reasons. Everyone likes a toothsome Pear and for opposite reasons. In hot July, and often, as this year, hotter August, none



exist but who enjoy a summer juicy Pear plucked from the tree and eaten beneath its shade; there is no fear of the Pear tasting woolly then. Take the opposite season, when snow and rain and wind are driving and splashing and blowing against the window pane, but all is snug and cosy within, when in these temperance days Walnuts and wine are, perhaps, passed—for who cares save an omnivorous schoolboy for Walnuts without the wine?—then the dish of Pears is drawn to the side of the table, and the Bergamotte Esperon, or the Joséphine de Malines, or, less in size but the quite as agreeable in flavour Knight's Monarch, are discussed with relish. However the frost may bite outside, a Pear is relished inside.

But Pears must advance, too, for this reason—the Grape, the Peach, Nectarine, and Apricot have to quit our open walls to secure a good and well-tasting crop, and must be grown under glass, while the Pear and the Plum must take their places on the walls, and will there prosper and pay their owners, while grown in the open they only prosper and pay now and then. Such is our English climate, that even in the well-known Villa Fields in the parish of Bathwick, near Bath, the poor renters of different portions had not even this year a crop sufficient to pay their rent. All the trees there are Pears and Plums, the fruit of which, of course, have a ready sale in a fashionable watering place. But Pears on a wall are another thing altogether.

In the fourth edition the number of Pears described is 584; in the fifth their number is 634, a gain of 50, many of them being perry Pears. Query, Does anyone drink perry now except in Herefordshire? Surely this might be a universal beverage like cider. Both are better than common, cheap, unwholesome claret, in which, as someone somewhat plainly said, there may not be headache in a dozen, but there is a stomach-ache in a glass; and yet this wretched stuff is imported in vast quantities from France, while wholesome cider and perry, English-made, might be drunk, and refresh the tired and thirsty, and in moderation do no harm at all.

Dr. Hogg begins the Pear division of his book with "an outline" of a classification of this fruit—not a complete system at present, owing to the hindrances of bad season following bad season preventing his obtaining specimens. This classification is a new feature of the work, and when completed there will be, as in Apples, "judgment from the inside." The Doctor's ground of judging seems to be from length of base of stalk to the base of the eye, as contrasted with the lateral diameter, longer or shorter; also measurement from cells to eye, or to base of stalk. This classification seems to be beset with difficulties, as the structure of the same fruits varies. Varying Nature does not like to be bound by rule. I have said the number of Pears described is 634. I possess an oldish work called "The Orchard," bearing date 1839, in which the number of Pears described is only seventy. What an advance from 1839 to 1884. Among the synonyms of the Amire Joannet I do not find its Worcestershire market name, "The Early Jennet." There might, I think, have been a list of Pears called "Market Pears," as a guide to those who get their living by the sale of fruit, such, for instance, as the Autumn Bergamot, Aston Town, and others. I welcome as an improvement a list of "The best perry Pears." Our author rarely breaks into poetry or sentiment, but he poetically, and gallantly too, speaks of "The side of the Belle Julie next the sun in its warm reddish brown glow, being like a *gipsy's blush*"—a very pretty description indeed. I am from my experience in Wiltshire, alas! utterly unable to endorse the praise given to Beurré d'Amanlis, which I can only describe as a handsome Pear without the least flavour, a very Turnip, though it improves slightly with time: but it is a favourite with gardeners—and why? Because it wins prizes from its good shape and large size. Beurré Bosc, again, even if grown on a wall, is an utter failure here. I notice that Mr. Blackmore says of Beurré Diel that it is "A Pear of coarse texture and vastly overrated." With me it was a failure, so I cut it down. Of Beurré Hardy I cannot write too highly—tree and fruit both beautiful. My own private note upon Beurré Rance runs thus:—"This Pear is useless, as it will not ripen as a rule." In regard to the Black Worcester Pear I transcribe my note for what it is worth, "The arms of the city of Worcester are an argent fesse between three Pears *sable*, from which arms the name of Black Worcester probably came."

Dr. Hogg does not reprint in this edition Loudon's mistake in regard to the term Wardens being given to Pears because of their property of keeping, but gives an interesting account of the meaning of Wardens under that title, part of which I had the great pleasure of supplying him; but as Shakespeare turned copper into gold, so he has added much that is valuable to my note. I fear that intending growers of Chaumontel must be warned that it very rarely can be ripened in England; the best English-grown I have ever tasted were from Kent. I am pleased to see that Mr. Blackmore says of Doyenné du Comice, "This is to my mind the best of all Pears," agreeing with Dr. Smee, who calls it "A Pear exquisitely delicious."

We pass on from Durondeau with its splendid colour to T. A. Knight's seedling Dunmore, named after a place in Stirlingshire. Dr. Hogg speaks of the Jargonelle being the Pear of the city of Perth; so also does the pretty market Pear beloved of children, the Lammas or Huntingdon, stick to that county, and is taken in bushels to the neighbouring markets. Louise Bonne of Jersey is the perfection of a Pear, but is alas! somewhat delicate, and must have a wall, where it is sure to reward its possessor. I think that the time of ripening of Madame Treyve is incorrect, and that instead of the beginning of September it is not ripe until October is well in. Of Marie Louise it must alas! be written that it blossoms very badly, withstands the frosts of spring, and then is rarely a crop; so its possessors after a few years unwillingly cut it down. As to Knight's best Pear, Monarch, if its fruit is left for a long time on the tree, and if grown in a sheltered condition, as the fruit blows off easily, it is a Pear

of wonderful fine flavour. I must also speak a word in favour of the old stewing Pear, Uvedale's St. Germain, which I find better in all ways, and very much more prolific than Catillac. Dr. Uvedale, says Mr. Thorne in his "Environs of London," lived at Enfield Palace, Enfield, in 1660, and was master of a grammar school there, and was devoted to the study of botany; his garden was greatly celebrated, and his connection with the Palace is even now preserved by the great Cedar which he planted and is believed to be the very oldest in the country, and of which the people of Enfield are justly proud. Another old Pear deserves a word of commendation—it is little potato-like looking Winter Nelis; let none despise its common look, but prove it by tasting. I have once in my life saved its being cut down because of its ill looks; beauty is only skin deep, and shape and size not everything in Pears.

I must now conclude my review of this charming book, which is well arranged, clearly written, and eminently instructive. If a gentleman wants to know something of fruits let him study this book, and he will soon know much. If a young gardener wishes to be well informed on the subject of pomology let him study its pages diligently; while those who know much of the science will gladly have this work by them for reference. This edition of the "Fruit Manual" is just up to the present time. Like an instantaneous photograph, it has caught its subject as it is, and fixed it for our benefit. I can only wish and hope that Dr. Hogg may be spared to give us future editions in future years.—WILTSHIRE RECTOR.

### GUMMING ROSES.

AT our last Show a case of gumming Roses was discovered, and after the exhibitor had prevaricated and then confessed, he was unanimously disqualified. Afterwards, at his earnest solicitation, it was resolved to obtain an opinion from the National Rose Society, and to reconsider the resolution of disqualification if necessary. In order that this position shall appear quite clear, the concluding paragraph of the case sent by us is given:—"The Committee of the National Rose Society are therefore asked their opinion upon the practice of gumming, and to give it their official approval or condemnation." To our utter astonishment, after waiting some months, we received from the Hon. Secretary a "decision" that the exhibitor was not disqualified and that the medals had been sent to him. To this treatment the Committee decidedly object, and have protested their discontent. Until this time we had thought the National Society represented the English rosarians, but this extraordinary action led us to doubt whether it was really a representative body. We therefore addressed a letter to about thirty of the leading Rose-growers in England, and are not a little pleased to find that they strongly condemn the practice and award disqualification as the punishment, exactly as we did and exactly as the National Rose Society didn't. As this is by no means an unimportant question, perhaps you will find room for a few of the opinions we have received.

Messrs. Cranston & Co., Hereford—"Gumming Roses for exhibition is decidedly illegal, and would not be tolerated by our National Rose Society. Any person found guilty of such a dishonourable practice should be excluded from exhibiting at any future shows."

Mr. Bruce Findlay, Royal Botanic Gardens, Manchester—"I have to say that I consider such a proceeding altogether unsound, and if we found out any person guilty of such a practice he would not be allowed to exhibit again at our exhibitions, and I should be inclined to label him a trickster."

Mr. George Baker, Holmfels—"I most unhesitatingly say that in my judgment the application of gum to the centre of Roses intended to be staged for exhibition is neither legitimate nor fair to other exhibitors."

Mr. Joseph Hinton, Warminster—"I believe it to be illegitimate, dishonourable, and unfair to other exhibitors; nay, I go further, I consider it obtaining, or striving to obtain, money under false pretences. It is absolutely indefensible, and should receive well-deserved punishment."

Mr. T. B. Hall, Wirral Rose Society—"In my opinion any case of gumming the centre of a Rose should certainly disqualify any exhibitor, and I hope the National Rose Society will pass a resolution to this effect."

Mr. Benjamin R. Cant, Colchester—"If I were a judge and discovered that any Rose blooms exhibited were gummed, I should most certainly disqualify the stand, and I expressed that view at a meeting of the National Rose Society held recently in London."

Mr. William Barron, Derby and Nottingham—"Any attempt to deceive judges by doctoring flowers for exhibition ought at once to disqualify any such exhibitor. 'Honesty is the best policy'."

Messrs. Richard Smith & Co., Worcester—"The practice referred to is a most reprehensible one, and is regarded by all the leading societies as sufficient to disqualify the offender from ever exhibiting again at any future shows."

Mr. E. R. Whitwell, Barton Hall, near Darlington—"I have no hesitation in saying that I consider such a practice neither honourable nor fair to other exhibitors, and I think it should disqualify a stand."

Mr. R. H. Vertegans, Birmingham—"It is a most reprehensible practice, and should be discountenanced by all committees of such exhibitions. Of course it would disqualify an exhibitor from exhibiting at any of our great Rose shows; therefore your Committee would be perfectly justified in disqualifying any exhibitor who carries on such a practice."

Mr. Julius Sladden, Badsey, Evesham—"I consider the practice of gumming the centres of Roses anything but legitimate, and a box containing any flowers so treated should in my opinion be disqualified. Com-



petitors are too often prone to forget that prizes obtained by questionable means confer no real credit upon the recipient, while the practice of such methods proves that the love of a prize, however gained, is more to some people than personal honour."

Mr. G. W. Piper, Uckfield, Sussex—"I should disqualify without the least hesitation. It is a most unfair practice to the honest exhibitors, and I do hope the offender will be brought to book."

Messrs. J. Jefferies & Sons, Cirencester—"Gumming Roses for competition is decidedly unfair. Judges detecting this should have disqualified them."

Mr. C. W. Lyon, Rochester—"The objections to this practice of gumming the centres of Roses for exhibition are so obvious that it is absurd to suppose that an exhibitor would be guilty of such a practice except for the purpose of gaining an unfair advantage over his competitors."

Messrs. F. and A. Dickson & Sons, Chester—"We consider gumming or dressing of any kind quite illegitimate and unfair in competitive classes."

Messrs. James Dickson & Sons, Chester—"We consider the practice of gumming the centre of Rose blooms that are intended for exhibition neither legitimate, honourable, nor fair to other exhibitors."

Messrs. Perkins & Sons, Coventry—"It is neither fair nor honourable, and they ought to be disqualified."

Messrs. Pope & Sons, Birmingham—"In our opinion in any and every such case they should be disqualified."

Mr. James Brown, Reigate—"I consider it unfair and dishonourable, and certainly should not be permitted by any society."

Mr. J. Ridout, Reigate—"I should most decidedly consider it anything but legitimate, honourable, or fair to other exhibitors, and anyone guilty of such a thing should be disqualified."

Mr. Henry Frettingham, Beeston, near Nottingham—"I should certainly not allow any gumming in the Rose, and would disqualify the man who did it. These things want putting down, and I for one would lift up my hand against all such practices."

Mr. S. P. Budd, Bath—"I consider the practice most dishonourable, and not at all legitimate, and if acting as judge at any Rose show should disqualify any box in which I detected the gumming of the centre of a single bloom."

Mr. Frank Cant, Colchester—"I should strongly condemn any such practice, and should most certainly disqualify any exhibitor."

Mr. Charles Turner, Slough—"I never before heard of gumming Rose petals. It is neither legitimate, honourable, or fair. The Roses so used should disqualify any stand."

"Messrs. Wm. Paul & Son, Waltham Cross, Herts—"The gumming of the centres of Roses exhibited for competition should disqualify the exhibit."

Mr. E. Walker, Secretary of the Leek Floral and Horticultural Society—"I am directed by the Committee to inform you that they have no hesitation whatever in stigmatising the practice of gumming Roses as highly dishonourable, illegitimate, and distinctly unfair. If such a case of tampering with flowers had occurred at their show, instant disqualification would have resulted."

This chorus of approval of what we have done by gentlemen of "light and leading" in the Rose world reads queerly enough by the side of the uncalled-for "decision" given by the National Rose Society. However, if our action and the opinions we have elicited result in producing a healthier understanding upon the subject, our labour will not have been in vain. Pending other proceedings, the holder of the medals is welcome to any "honour" or gratification to which their temporary possession may entitle him. For ourselves we have to say that we have disqualified him for ever, and have severed our connection with the Society which sustains him in his highly questionable claim and sanctions his more than questionable conduct.—A. JOHNSON, *Hon. Sec., Leek Rose Society.*

#### THINNING CAMELLIA BUDS.

ONE day lately a visitor here looking at the large number of buds formed on our Camellia trees asked if we did not intend removing half of them. He was informed that as the house is heated with an old flue, which often emits disagreeable fumes when heated on cold nights, and we rarely resort to thinning, as some of them always fall through atmospheric conditions. Were it not for this I daresay many of them would be taken off, and the operation is one worth the consideration of cultivators. When the point of every shoot is crowded with from four to a dozen buds it is impossible they can all develop flowers, especially if the buds are about the same size, and in such cases the result would often be unsatisfactory development; but this may always be prevented by judicious thinning. When it is resolved that thinning has to be done it is an advantage to do it early, and before the blooms commence opening. The majority of Camellias have now formed their buds, and it is a good time to thin them. Two, three, and not more than four buds are sufficient on the end of each shoot, and when the buds occur along the shoots they should not be closer than 2 inches. Where especially fine blooms are wanted they may be reduced to one bud to each shoot, but this is going to extremes where a good supply of blooms is required. It often happens that there are very early and some late buds on each shoot, and in thinning some of both should be allowed to remain on, as the early ones will supply early flowers and the later ones will form a succession. Those allowed to remain should never be touching each other, but let them be as far apart as possible. In the case of clusters always take out the centre ones, as the outside are invariably the finest and most likely to

succeed well. The utmost care must be taken in thinning, or some of those it is desired to retain may be loosened and fall a few days after the others have been removed. A gentle twist to one side or a screw round is generally sufficient, and where the operation of thinning or its results are not well understood it is always best to deal lightly with them.—J. M.

#### SEA-SAND GRASS, PSAMMA ARENARIA.

IN the October number of *Longman's Magazine* there appears an interesting article by Mr. F. A. Paley on "Sea-sand Grass as a Land-winner," this Grass being commonly known as Marram Grass, but to botanists as *Psamma arenaria*. The Dallastint accompanying this necessarily short description will serve to explain the process by which the land is won.

Those persons who have wandered over the sand dunes, or "burrows" as they are called in Devon, and which may be found on many of the flat parts of our coasts, may have noticed a coarse dark green Grass dotting the surface of these sands. Hard, rigid, and pointed as porcupine quills, they present no attraction to the ordinary seaside loiterer; but Mr. Paley has shown in this article the important part they play in the reclamation of the shore. The Dallastint is taken from a photo-micrograph of a transverse section of this Grass, and shows that it is a modification of a flat blade of

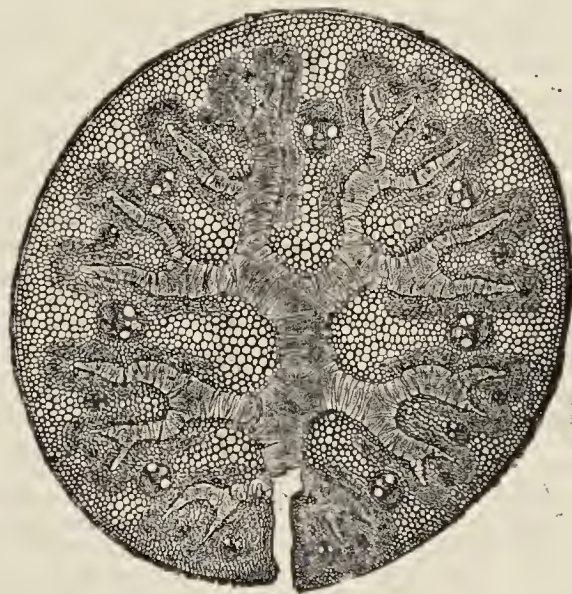


Fig. 68.—*Psamma arenaria* (magnified 36 diameters).

Grass which has become terete or rolled into a partially closed cylinder, the inner surface of which is furnished with longitudinal ridges of varying dimensions through which numerous tubes ascend. These tubes, which may be seen in the section as round spaces filling the projecting processes of the internal surface of the Grass, by the suction they exert draw up the moisture retained in the subjacent earth by the matted rootlets of the Grass and distribute it to the surface of the sand, thus wetting it for some considerable distance round the crown of each root, and arresting all subsequent increments of dry sand, which are carried over it by high winds. In this manner each blade of the thousands growing in that spot adds its quota to the gathering dune. It would be foreign to the purpose of this short paragraph to give Mr. Paley's paper in all its instructive details, but we can only recommend those interested to read this article for themselves as a further aid to the right understanding of the accompanying photograph.

#### STRAWBERRY CULTURE.

IN your Journal, page 354, is a small note regarding the weight of Strawberries grown by Mr. Lunt at Ardgowan by your correspondent "Caledonian;" the statement he gives being quite correct so far as it goes, but he forgot to mention that the plants were grown in 6-inch pots, the fruits were of excellent quality and highly coloured. A few words as to their culture and treatment here (Ardgowan) may be of benefit to your numerous readers. The runners are lifted about the middle of July and are placed in 4-inch pots, the compost being two-thirds of good rich loam and one-third of leaf soil. They are placed at the back of a north wall, so that they may be out of the full rays of the sun, and allowed to remain there until they are showing their roots at the side of the pots. A few half-decayed leaves are placed in the bottoms of the pots, so as not to disturb the young roots while being shifted into their fruiting pots. Knowing that the water will have a free outlet, a good dusting of soot is given to the sphagnum to prevent worms obtaining an entrance. They are



next potted firmly in another compost, five-eighths of loam, two of dry cow dung, and one of leaf soil. They are then placed in a position so as to allow them to have the full benefit of the sun, and allowed to stand there until the middle of November, when they are placed in cold frames and protected from severe frosts.

Mr. Lunt generally starts the first batch about the 20th of February brings them on slowly until they are showing flowers, then keeps them a little closer until they are set, after which they are thinned out to eight or ten fruits on a plant. Then comes the time to develop the fruit, with a plentiful supply of liquid manure given quite strong. They are kept close with plenty of moisture and a minimum heat of 60°, rising to 100°, with sun heat until they are colouring, then the foliage is pressed down and air given both top and bottom during the day, and a little at the top at night. By the above treatment I have no doubt your readers who are anxious to obtain large well-coloured and highly flavoured fruits will not be disappointed.—UNDER GARDENER.

### APPLE AND PEAR SHOW.

EXETER—OCTOBER 30TH AND 31ST.

THIS "Exhibition and Fair" proved highly successful in every respect, and it is to be hoped will become an annual event. It was originated with the primary object of attracting attention to the best sorts of Apples and Pears for all purposes, thereby conducing indirectly to an improvement in the culture of these fruits in the county of Devon, and, let us hope, also in other neighbouring western counties equally as favourably situated for fruit culture. That there is room for improvement no one will dispute, but how this shall be accomplished is not so easily decided. The Exhibition under notice is undoubtedly a step in the right direction, as being the readiest means of directing public attention to the need for a thorough investigation of the Apple and Pear industry. Offering prizes for the best examples of the most approved sorts in a district like that of Exeter must prove of great value to all who need instruction as to the merits of varieties, but the promoters of this laudable scheme should not rest contented with this, as after all it is only the commencement of, or one contribution towards, the necessary reform. We will suppose that this Exhibition was not merely meant to amuse some, perhaps the majority of the visitors, or to enable others to correct the nomenclature of the sorts they have in cultivation, and to suggest a few others that are worthy of cultivation. Praiseworthy as the latter objects would be, we should prefer to think that the end in view is rather the encouragement of growers for profit. That it is quite possible to grow great quantities of really fine fruits in the western counties is indisputable, and we are also of opinion that it is quite possible to market the produce at a profitable rate. The growers, however, must seek the markets, or in other words they should take more active steps in the matter, and not to sell at the price any neighbouring fruiterer may offer. Again, to turn all the Apples in an orchard into cider, simply because a profitable market near at hand cannot be found, is altogether an unreasonable proceeding. It is not the fault of the times that a good market for fruit cannot be always found. For instance, in our return journey from Exeter we spent several hours in Bristol, and could not escape noticing what a quantity of very inferior Apples were offered for sale in all directions, and yet there were great heaps of better fruit lying in nearly every orchard we passed on two sides of Exeter that might well have been turned to a better account. It may be argued that many of the Apples grown, in spite of their attractive appearance, are yet only fit for cider-making. But why grow such sorts at all? What is really wanted is a central association to guide and watch over the interests of the growers, and with its help the farmer might find the best markets, besides obtaining other useful information. If the Americans can grow and send Apples to England at a profit, and which they do in immense quantities, surely the growers in the west of England ought to be in a position to successfully compete with them during most seasons. This, however, is a difficult matter, if they are always to be at the mercy of indifferent or even unscrupulous salesmen, as well as the railway companies that monopolise the carrying power in their respective districts, and this is another strong reason for establishing an association. While on this subject we would also strongly impress upon all growers the great necessity for selecting their fruit for the markets, instead of packing them promiscuously in the hampers, barrels, or sieves, as the case may be. It is thought by some to be a clever trick to place a number of very inferior fruits in the bottom, and to "top" these up with a few of the best, but this very unwise proceeding only serves to induce consumers to purchase the American fruit, which is usually of equal quality throughout. Fine fruit will invariably sell well, but that of poor quality, or a mixture of poor and good fruit, will seldom realise profitable prices at a distance.

We were fully prepared to see a fine collection of fruit at the Lower Market where the Exhibition was held, but the reality exceeded our expectations. Not only was there a very fine display of Apples especially, but the 2000 dishes included an extraordinary proportion of fine well-coloured fruits, the competitors including well-known growers from Kent, Hereford, and other counties. On the whole, the nomenclature was highly creditable, but we cannot speak very favourably of the judging, especially among the collections of dessert Apples, too much regard being paid to size. There were thirteen collections of twenty-five distinct varieties of Apples in the class, for which the first prize was contributed by the Vegetarian Society, Manchester. The first and second prizes went respectively to Messrs. H. Berwick and C. G. Sclater, both Devonshire growers, and the third to Messrs. G. Bunyard and Co., Maidstone; but it should be added that had not Mr. J. Watkins of Hereford been disqualified for not staging the requisite number of dishes he most probably would have pressed closely for the first prize. Among the many sorts staged the most noteworthy were Beauty of Kent, large and highly coloured, a deservedly popular sort; Bellefleur, large and highly coloured; Emperor Alexander, large, well coloured; Lady Henniker, medium size; Mère de Ménage, large and very highly coloured; Dumelow's Seedling or Wellington, very large for this variety and well coloured; Gloria Mundi;

Red Hawthornden, very fine and well coloured; Gravenstein, extra fine and highly coloured, a valuable sort; Winter Warden, a highly coloured variety, and apparently a great favourite among local exhibitors; Golden Noble, very clear-skinned and heavy; Striped Beefing, medium sized and well coloured; Scarlet Tiffing, a highly coloured sort, not so well known as it deserves to be; Bess Pool, medium sized and highly coloured; Towers' Glory, a medium sized and rather uncommon sort; Royal Somerset, of good size, heavy, bright yellow, and clear-skinned; Russet d'Orleans, very heavy and probably a good keeper; Eclipse, medium sized, very richly coloured and streaked; Black Prince, very dark-skinned, evidently a good keeper; and such well-known dessert sorts as Cox's Orange Pippin, Court Pendu Plat, Margil, and Ross' Nonpareil.

With twelve dishes of culinary Apples there was a very keen competition, and out of the eighteen lots staged the Judges eventually awarded the prizes to Messrs. J. Hain, J. Watkins, and Bunyard & Co., in the order named. In these collections most of the above-named sorts were extensively shown, and also several local favourites, such as Tom Putt, a very highly coloured sort; Sharper's Apple, Veitch's Perfection, Golden Ball, and Madame Clarke. The Hereford Apples were, as a rule, the best coloured, while the Maidstone or Kentish Apples were, on the whole, the best selected. There were fifteen lots of six sorts of culinary Apples staged, the prizewinners being Messrs. W. Blackmore, J. Sweetland, and A. Trueman, the class generally being highly meritorious. Loddington or Stone Apple, Beauty of Kent, Cox's Pomona, Blenheim Pippin, and Beauty of Somerset were particularly well represented. Thirty-five dishes were staged in the class for any culinary sort, and the first prize was adjudged to a fine dish of Golden Noble, a most deservedly popular variety in Devonshire; and the second prize was won with a handsome and heavy dish of Beauty of Wilts, a sort not often seen out of the district. The prizes for the heaviest Apples attracted several very fine dishes, principally of Warner's King, the first-prize lot of six fruit of this variety weighing 6 lbs. 9 ozs.

The class for six dishes of Apples, three to be of culinary and three of dessert sorts, was a very large one, thirty competitors entering. The first prize was awarded to the Rev. T. Yarde, the second to Mr. J. Stevens, and the third to Captain Lerett. Among the great number of sorts shown some of the best were Alfriston, Winter Warden, Yorkshire Pippin, Cellini, Hoary Morning (a very attractive sort of fairly good quality), Cornish Gilliflower, Tom Putt, Court of Wick, and Adams' Pearmain. There were thirteen exhibitors of twelve dessert Apples, the prizewinners being Messrs. Sclater, Watkins, and J. Hain. The first-prize lot was rather too coarse, and included inferior sorts. Some of the best represented varieties were Court Pendu Plat, Cox's Orange Pippin, Syke House Russet, Sturmer Pippin, Margil, Sam Young, Ross Nonpareil, Australian Pippin (said to be a good bearer), Ribston Pippin, and Adams' Pearmain, all of which are good reliable sorts.

Eighteen lots of six dessert varieties were shown, and this again was a good class. There were forty dishes in the class for the best flavoured Apple, and the preference was given to Cox's Orange Pippin and Ribston Pippin, and in another class for the best dessert sort Cox's Orange Pippin again secured the premier award. No less than thirty-eight dishes of Blenheim Pippin were in competition for the two prizes offered for them, and a remarkably fine lot of fruit they were. There were eight lots of Braddick's Nonpareil staged, and the examples of this excellent sort were very variable, but on the whole fairly good. Buffcoat, a by no means valuable sort, was shown by twenty growers, but only eight dishes were shown of Cellini, and several of these were rather poor. Cornish Gilliflower was shown by eight growers, and many of the fruits shown were unusually large. Only twelve dishes in the class for Cox's Orange Pippin were shown, and this is rather surprising, seeing how popular this variety most deservedly has become. Court Pendu Plat was shown by eight growers, and the examples of this valuable variety in its own class and throughout the classes where included were much larger than usual. There was strong competition also in the classes for Gravenstein, Wellington or Dumelow's Seedling, Ribston Pippin, Gloria Mundi, Gravenstein, King of the Pippins, and Red-ribbed Greening.

Pears appear to be much less plentiful than Apples in the Devonshire districts as well as other districts, and as a consequence the competition was not so keen. There were seven lots of six varieties, and here Mr. Garland, gardener to Sir T. Acland, took the lead with extra fine specimens of Joséphine de Malines, Glou Morceau, Easter Beurré, Doyenné du Comice, Winter Nélis, and Pitmaston Duchess. The fruit of the latter were wonderfully fine, weighing collectively 6 lbs. 10 ozs., and the heaviest 1 lb. 10 ozs. The same variety was also well shown by other growers. The same number of exhibitors entered in the class for three dishes of dessert Pears, and such sorts as Doyenné du Comice, Pitmaston Duchess, Gansel's Bergamot, Beurré Diel, Beurré Clairgeau, and Winter Nélis were remarkably good. The fruit in the class for Beurré Diel was very fine, as also were the examples of Glou Morceau, Marie Louise, Doyenné du Comice, and Duchesse d'Angoulême; but the classes for Chaumontel, Passe Colmar, Winter Nélis, and Beurré Rance were very small. Stewing Pears were shown in goodly number, and many of them were very fine, though much confusion appeared to exist as to the proper names of the sorts shown. Some of the best represented were Catillac, Uvedale's St. Germain, Black Worcester, and Verulam.

Some of the most successful exhibitors of Apples were Messrs. Watkins, Bunyard & Son, C. Sclater, C. Salter, J. Cox, E. Enstone, J. Searle, J. Stevens, J. Hain, F. W. Dymond, W. Salter, and Miss Matthews; Mrs. Manley, Sir T. D. Acland, Sir B. Samuelson, Mrs. Hainsworth, Mr. W. Blackmore, and Mrs. C. Smith; while with Pears the most successful were Sir T. Acland, Rev. T. Yarde, Rev. P. Parsons, Sir B. Samuelson, Mr. T. Townsend, Lord Poltimore, Sir J. Kennaway, Rev. P. Williams, Sir John Walrond, Messrs. Manley, Mr. G. Shell, Berwick, and Mr. G. B. Carlile.

Messrs. R. Veitch & Sons, Exeter Nurseries, staged upwards of one hundred sorts of Apples, these comprising all the best in cultivation; and Messrs. Lucombe, Pince & Co., Exeter, and G. Bunyard & Sons, Maidstone, also had very good and extensive collections of Apples. Mr. J. Turner, gardener to Major Cluggett, brought two dishes of Peasgood's Nonesuch Apple not for competition. They were part of a crop of twenty-six fruit gathered from a small pyramid, and were remarkably fine examples of a very fine culinary sort. The Market Hall was prettily decorated, and great pains



were taken by Mr. Pengelley, the Honorary Secretary, and other gentlemen to make the Show as attractive and as complete a success as possible. It is to be hoped the Devon and Exeter Horticultural Society will be equally as well supported when they hold their Fruit and Chrysanthemum Show on November 21st. The Exhibition will be composed entirely of voluntary contributions, and as there is every prospect of a fine display being made, it will be somewhat discreditable to the inhabitants of Exeter and neighbourhood if this attempt on the part of the Society to remove an old debt is not properly appreciated.



WE are requested to state that the REPORT ON THE APPLE CONGRESS, which was held at Chiswick in 1883, is now ready, and that nurserymen and seedsmen who desire to purchase it in large quantities can have it on special terms on application to Mr. J. D. Dick at the offices of the Royal Horticultural Society at South Kensington.

— CHANGE OF NAME.—We are desired to state that Mr. T. H. P. Dennis, having retired from the firm of T. H. P. Dennis & Co., Anchor Works, Chelmsford, the business will be carried on by the remaining partners, Messrs. R. E. Crompton and F. A. Fawkes, under the title of Crompton & Fawkes.

— CONCAVE FLOWER POTS.—Mr. Crute, whose pots we illustrated and referred to approvingly a few weeks ago, desires to state that his pots are different in principle to the "convex" pots that were made by Mr. Matthews in 1876; also that he (Mr. Crute) did not know that such a pot as that made by Mr. Matthews was in existence when the idea first occurred to him of constructing the pot which he has patented, and for the sale of which Mr. B. S. Williams has become an agent. Mr. Crute, therefore, conceives that Mr. Matthews cannot claim priority in the manufacture of concave flower pots.

— MR. H. MARTIN, Paris, writes:—"I really wonder why the old and good TEA ROSE GLOIRE DE DIJON is but the twenty-seventh in the list of Teas and Noisettes so well compiled by "E. M." We think it is the best of all Teas here. It is true that we first consider its qualities as an outdoor, hardy, and profusely blooming sort. Catherine Mermet and Devoniensis come very near it. There are splendid Maréchal Niel on the Mediterranean coast, but it does not succeed very well in the interior, except in peculiarly exposed situations. I must add that if we had such a liking for buttonholes as English people have, Maréchal Niel and Niphotos would come to the front at once."

— A VERY interesting collection of TROPICAL AFRICAN MOUNTAIN PLANTS has been brought to Kew by that intrepid African explorer, Mr. Joseph Thomson, made during his late journey into the Masai country. They have been examined by Prof. Oliver, and consist of about thirty-five species from Kilimanjaro at 9000 to 10,000 feet of elevation; a few from a crater near Lake Nairasha at 7000 to 8000 feet elevation; thirty-four from the Kapté plateau at 5000 to 6000 feet; and fifty-eight from Lykipia at 6000 to 8000 feet. These collections exhibit the mingling of north temperate types with others characteristic of Southern Africa, for which previous discoveries had prepared us. Of these the most interesting are, as new to tropical Africa, an Anemone, a Delphinium (very different from the Abyssinian *D. dasycaulon*), and a *Cerastium* of remarkable habit. Of South African forms the most striking is the handsome arborescent Rutaceous plant, *Calodendron capense*, the "Wild Chestnut" of Natal, to the north of which it had not previously been found. Of northern forms is a Juniper, another genus unknown to tropical Africa, and which was found forming groves at an elevation of 6000 to 8000 feet, and itself attaining a height of 100 feet. It is the *J. procera* of Abyssinia. A *Podocarpus* gathered along with the Juniper, and also attaining 100 feet in height, is probably the *P. elongata* of Abyssinia, which, or a near ally, also occurs in South Africa. The only other Conifer previously found in the equatorial regions of Africa is the *Podocarpus Mannii* from the peak of St. Thomas in the Gulf of Guinea.—SIR J. D. HOOKER (in *Nature*).

— GARDENING APPOINTMENT.—Mr. Thomas Cross, late gardener to W. R. Coleridge, Esq., Salston House, Ottery St. Mary, Devon, has been appointed gardener to J. P. Thomas, Esq., Warneford Place, Highworth, Wilts.

— A MOST interesting and very full meeting of the Floral Committee of the NATIONAL CHRYSANTHEMUM SOCIETY was held on Thursday last at the "Old Four Swans," Bishopsgate Street. Many exhibits were staged, and the following awards were made:—First-class certificate to Mr. Wering for golden sport from Madame Desgrange named G. Weing. First-class certificate to Mr. Sullivan for large-flowered Anemone Chrysanthemum named Sœur Dorothee Souille. Cultural certificate to Mr. Harman Payne for Japanese Chrysanthemum François Delaux; first-class certificate to Messrs. J. Veitch & Sons for Souvenir de Japon as a Japanese decorative variety, and for Mr. Robinson as an exhibition Japanese variety; also to two varieties of Tree Carnation—viz., Mrs. Keen and Pride of Penshurst, each first-class varieties. A special vote of thanks was accorded to Mr. G. Stevens of Putney for his exhibits, and also a first-class certificate for single Chrysanthemum White Perfection. This variety bids fair to prove a very great acquisition to this class of Chrysanthemums. First-class certificates were also awarded to Mr. N. Davis, Camberwell, for the following varieties:—Lord Wolseley, incurved sport from Prince Alfred; Madame Cabrol, large Anemone variety; Beauté des Jardins, Japanese; Fernand Ferrol, Japanese; Madame de Senin, Japanese; Nellie Rainford, very pretty buff sport from the old Pompon Rosinante. First-class certificate to Mr. Galton, Winchester, for sport of a rosy peach colour from Bouquet Fait, a very telling and useful variety, only wants a good name. First-class certificate to Messrs. Cannell & Sons for Miss Rose, single Chrysanthemum, and Mrs. Gladstone, a semi-single variety. The next meeting of the Floral Committee will be held on November 12th at the Westminster Aquarium, and again at "The Four Swans" on November 27th at seven o'clock in the evening.

— IN reply to the inquiry of "F.," on page 381, on MILDEW ON ROSES AND CHRYSANTHEMUMS, "C. W." writes:—"Mildew is caused by too damp an atmosphere in proportion to the temperature. In cold wet summers both are very liable to be affected; they are also much more subject to it in low-lying damp positions than in elevated and drier ones. The best preventive, as well as antidote, is clear soot water and sulphur applied with a syringe three or four times a week—1 gallon of the former to 1 oz. of the latter. When under glass mildew can be effectually destroyed either on Roses or Chrysanthemums in three days if a moderate dusting with sulphur be given, and a dry atmosphere be maintained with free ventilation. By a dry atmosphere I mean one that contains only 60 to 70 per cent. of moisture by day and 80 to 85 per cent. at night."

— AS will be seen by a communication in another column, the Committee meeting of the NATIONAL CARNATION AND PICOTEE SOCIETY that was to have been held on November 11th has been necessarily postponed to December 9th. The members will be duly apprised of the hour of the meeting.

— MR. GEORGE PRINCE.—I have to announce with deep sorrow—a sorrow that will be shared by all who know him—that Mr. Prince has met with a most serious accident. He was thrown out of his trap on Wednesday evening last, the 29th ult., and received a severe concussion of the brain. He was for a couple of days unconscious, but has recovered consciousness, and by the last account received this afternoon (Tuesday) he was enabled to speak a little. It was only some few months ago that he lost his excellent and devoted wife, and now at the busiest time of the year he is completely laid by and his life in great danger. That it may please God to restore him will be, I am sure, the hearty prayer and sincere wish of all who know and regard him for his many excellent qualities.—D, Deal.

#### THE PARKS AND OPEN SPACES OF LONDON AND PARIS.

A PARAGRAPH which appeared in the Journal of October, detailing the amount of space available as breathing spaces for the various capitals of Europe has led me to think over the state of London as compared with Paris, and possibly to correct some erroneous views that are entertained upon the subject. I do not think that we can reckon under the head of breathing spaces those places which are distant from the metropolis, places which are only visited once or twice in the year. I say this, because I find that Fontainebleau is credited as one of the parks for Paris. Now it is about thirty miles from Paris. The journey, even third-class, costs six francs, and when you get to the station the Forest is some considerable distance; hence I venture to say that there is not one Parisian in twenty who ever goes there, and certainly very few of the labouring classes. The Forest is very extensive and fatiguing, and unless you can afford a carriage the pleasure is really a toil. It is therefore to me absurd that a place of this description should be counted as one of the Paris parks; it would be just as right to class the New Forest as a London park. The same may be



said of Chantilly, which, except at race and fair time, is even less frequented by Parisians. The lungs of the human body are not at the extremities, but in the centre, and hence the lungs of cities are not such far-off places, but those open spaces which are in the centre of the population, which give them places to get at without expense to reach readily from their homes, and which occupy spaces which would otherwise be filled by bricks and mortar. Now I shall run, I know, counter to many received opinions when I say that I consider that London is considerably better off in this respect than Paris; but as I have recently been there, and this was one of the things about which I was interested, I looked carefully at the matter, and am more confirmed in this opinion, which I have long held. Let me first, then, write of the places themselves and their extent, and then of the manner in which they have been utilised.

That there are advantages which Paris possesses over London in respect of its capabilities for horticulture, anyone acquainted with the two capitals will, I think, at once admit. It is situated in a basin surrounded by more or less lofty eminences, and is itself about 200 feet above the level of the sea, and like as the spider spins its house out of itself, so has Paris been built from the stone which underlies the whole city. It is in this way that the Mushroom caves at Montrouge are formed, and that the perfectly unique garden of the Buttes Chaumont has of late years been so admirably arranged (the same has to some extent been a great advantage in the formation of the new gardens of the Observatoire), where you have a high wall of natural rock 160 feet high, and capabilities for introducing artificial water. It is manifest that with the taste which the French unquestionably have, the possession of such a site as this must be a great advantage. No artificial rocks, however well constructed, can hope to equal this, and those at Battersea Park, good in their way, can only excite a smile when one thinks of the Buttes Chaumont. We have elevations in and about London, such as Primrose Hill, but no ingenuity of man could ever make it into a Buttes Chaumont.

Another great advantage that Paris possesses is its climate. This is of a very remarkable character. The climate of the north of France, Normandy and Picardy, differs but little from that of the south of England, as anyone who has gone through those departments can at once see by the condition of both farming and gardening products. But Paris is entirely different. There is a brightness and dryness in the air, and an amount of sunshine, which, while it entails a considerable amount of trouble in watering, is also very favourable for the outdoor culture of sub-tropical plants. Out-of-door Grapes are not of any very good quality, although they nearly always ripen, and it is only when we get to Thomery and Fontainebleau that the Chasselas or Buckland Sweetwater becomes really a dessert fruit. A good deal of the clearness of the atmosphere depends, I think, on the nature of the ground, while there can be little doubt that the less extensive use of coal and the amount of the population as compared with that of London conduce to the same result. London, situated as it is on the borders of the Essex and Kentish marshes, resting on a bed of that dreadful substance called London clay, using in its manufacture and private houses enormous quantities daily of coal, with its chimneys vomiting out clouds of dense smoke, which the heaviness of the atmosphere drives down upon the trees and shrubs within its reach, and filling up their pores with its abominations, places it at a sad disadvantage, and yet withal I am inclined to give expression to what may seem a very heterodox opinion, that we have a great superiority over the French capital.

The Champs Elysées is unique; we have nothing, and I venture to say can have nothing like it; can have, I say, because the *cafés chantantes*, the merry-go-rounds, cirques, and other amusements are totally foreign to our habits. We cannot sit in the open air as they can. I was there in September this year, and it was possible even then to sit out on the boulevards till ten o'clock at night, and as a garden the Champs Elysées have no great value, they are too much cut up by these buildings, but as an open space it is perhaps one of the most beautiful in Europe. Its long stretch from the Tuileries Gardens right up to the Arc de Triomphe is, especially in the early summer, very delightful. The Tuileries Gardens are mainly composed of large broad walks and open spaces, with some fine Chestnut trees, while the gardens of the Luxembourg contain many excellent examples of bedding-out, various sub-tropical plants, such as Cannas, Caladiums, Musas, &c., being used. It is a large piece of ground, but has neither the exclusive character of a garden or a park. All the other open spaces in Paris, such as the Square Montholon, the garden of the Tour de St. Jacques, the Louvre, the Square de Montrouge, the Square de Batignolles, are very small, some of them pretty enough, and exhibiting a good deal of taste. I have left to the last the Bois de Boulogne and the Bois de Vincennes, but we can hardly call either of them open spaces in Paris; the former is, at least, even the entrance of it, two miles from the centre of Paris, and a heavy walk, as the whole way to the Arc de Triomphe is a steep ascent, and you cannot get a drive there under five or six francs. It is very nice when you do get there. There are, it is true, no large trees, the various sieges to which Paris has been subject have time after time devastated the Bois, but it is tastefully laid out. Great pains have been taken to plant such things as may give variety all through the year, while in spring and early summer the many beautiful flowering shrubs and trees are delightful. The islands on the ornamental water are tastefully arranged, barring the kiosques, &c., and yet withal there is an air of artificialness about it that detracts somewhat from its beauty. Its grottoes overgrown with Ivy, its picturesque cascades please the eye, but at the same time you see at once that it is all made, unlike a lake close by me here, that of Eastwell Park, which many people have taken for a natural piece of water. Then the wood is itself disappointing. There is the same monotonous style of laying it out which characterises

Fontainebleau, St. Germain, Vincennes, and indeed every wood with which I am acquainted in France; and the trees are so wooded together that there is no possibility of their attaining their proper dimensions, so that those who, not having seen the Bois, expect to see grand spreading Beech trees, such as Tityrus delighted, we are told, to stretch himself under, or fine Elms such as we have in London, will be grievously disappointed. The trees are planted so closely together that it is impossible they can do well. In various parts of the wood there are wild-looking spots where wild flowers flourish.

It is a strange instance of the caprices of fashion that for one person who goes to the Bois de Vincennes there are a hundred who go to the Bois de Boulogne, and yet in some respects the former is better worth seeing. It has the defect of being the place where recruits are drilled, and the wood is, as usual, too crowded; but there is less of an artificial character, and the lakes and streamlets are prettily arranged, but, as I have said, to the great mass of Parisians and visitors it is out of the way.

I had intended to have (before entering on the subject of contrast) given a brief description of the Parc Monceau and the Buttes Chaumont, but as I have already run on to some length, defer them to a future paper. If I have succeeded in giving a clear idea of my views, it will be seen that I do not think the French have it all their own way; and that while there is much to admire in the landscape gardening and the manner in which they have utilised their open spaces, there are still defects which we may avoid, although unquestionably many excellencies we have imitated, and would do well still more to do so when we can.—*D., Deal.*

### KELSEY'S JAPAN PLUM.

AT the meeting of the Royal Horticultural Society's Fruit Committee on October 14th, Mr. W. Bull of Chelsea exhibited some fruits of a remarkable Plum bearing the above name and said to be from California. These were so distinct in form and general appearance that it was at first thought they were not true Plums; but on examination of their structure and the small shoots which accompanied the specimens sent to Chiswick, it has been decided that the name is correct. The fruits are conical in form, about 3 inches in depth and 2½ in diameter at the base, of a uniform dark red colour externally, the skin smooth and much like a Nectarine, the flesh being firm, of a pleasant flavour, and yellowish colour. That it is a good keeping variety, and one well fitted for sending long distances, is proved by the condition of the fruits shown at Kensington, which had been received by Mr. W. Bull from California, and appeared to have suffered little by their journey, though the flavour was probably not so good as it would have been if they had ripened on the trees.

A full description of the variety and its qualities was published in the *Pacific Rural Press* last year, together with an illustration, which we have reproduced in fig. 69. This faithfully depicts the form and character of the Plum, as it was taken from a photograph of a fruit-bearing branch. The account referred to is also very interesting, and the substance of it is as follows:—

"This remarkable Plum was imported from Japan in 1871 by the late John Kelsey of Berkeley, California, whose name has been given to the fruit as a just tribute to his memory as one of California's pioneer leaders in horticulture, and the first producer of a fruit that has any promise of being one of the greatest acquisitions to our already long list of good Plums.

"We are told by Mrs. Kelsey that there was but little attention paid to the trees at first, the merits of the fruit not being known. They were allowed to stand in the nursery rows until they fruited, after which they were transplanted to the orchard, where there are at present upwards of a hundred trees, which have been in bearing since 1876, and have never failed to produce all the fruit the trees could carry, thus fully establishing its successful culture even under unfavourable circumstances. The tree is a moderately vigorous grower, should be moulded to the fancy of the grower when young, and ever after pruned to the new wood.

"The fruit is now being largely propagated by W. P. Hammon & Co. of Oakland, who expect to introduce it largely in time for the next planting season. Mr. Hammon assures us that he believes the variety possesses more points of excellence combined than any other Plum now grown. Its claims for this prominence he enumerates as follows:—1, Its wonderful productiveness is unsurpassed by any other Plum, either native or foreign. 2, It comes into bearing at the age of two to three years, and continues with great regularity, blossoms frequently appearing on yearling trees. 3, The fruit is of very large size, being from 7 to 9 inches in circumference, and specimens weighing 6½ ozs. each, and it has a remarkably small pit. 4, It is very attractive in appearance, being of a rich yellow nearly over-spread with a bright red, with a lovely bloom. It is heart-shaped. It ripens from first to last of September, at a most favourable time for harvesting and marketing the crop, the larger part of the Plum crop being gone. 5, It is of superb quality, melting, rich, and juicy; in fact, to some tastes, at least, has a more satisfying flavour than any other Plum. For cooking, jelly, or preserving in any manner it has no equal. Its large size renders the paring of the fruit as practicable as the Peach, which is quite a novelty in the line, and excels all other canning Plums. As a dried fruit it is destined to take the lead, equal to if not surpassing the best dried Prunes or Peaches for drying results. Mr. William H. Jessup of Haywards, California, who dried some of the fruit last October, 1882, reports as follows:—'There were just 9 lbs. of fruit; loss in pitting 7 ozs., loss in drying 6 lbs. 13½ ozs.—total loss 7 lbs. 4½ ozs., giving a nett result of 1 lb 11½ ozs., or equal to about 19½ lbs. dried to the 100 lbs. of fresh fruit. In



texture the Plum is firm and meaty, and a most important feature that will undoubtedly commend it to all orchardists is the superior qualities it possesses for shipping long distances, can be sent to any part of our country, it remaining solid longer than any other variety.'

"Mr. Thomas Meehan of Germantown, Philadelphia, Editor of *Gardener's Monthly*, in speaking of this fruit sent him by Hammon & Co.,

committee on new fruits, in their report, advise fruit-growers to give attention to the cultivation of this fruit. It should be stated that his fruit bears no relation whatever to the Loquat, an evergreen tree more commonly called Japan Plum.

"Messrs. W. P. Hammon & Co., of Oakland inform us that they made



Fig. 69.—KELSEY'S JAPAN PLUM.

*deners' Monthly*, in speaking of this fruit sent him by Hammon & Co., October 2nd, 1882, says in the November number of his magazine:—'The flesh is firm and flavour admirable. If it prove adapted to our climate there is no doubt of the great value of the introduction.' At the meeting of the California State Horticultural Society, October 27th, 1882, the

arrangements with Mrs. Kelsey, so that they will be enabled to furnish trees propagated direct from the original trees, thus avoiding any confusion in varieties of other Japan Plums, of which no others of special value are yet known here."

[Mr. Bull's correspondent states he is a native of Dorsetshire, and that



the climate of the south of England is similar to that of the district in which the fruit was grown, and he is consequently of opinion that the Japan Plum would succeed in favourable positions in this country."]

## HISTORICAL JOTTINGS ON VEGETABLES.

### THE RADISH AND THE HORSERADISH.

In their researches after our native species plant-collectors meet occasionally with the wild Radish, which, like many others in the Cresswort or Cruciferous order, has a partiality for waste land, where we may pick its white or lilac flowers veined with darker shades, and it is in the chalk or limestone districts it is most likely to show itself. The Sea Radish, with its primrose-coloured flowers, haunts the cliffs, especially on the western coast of England. Neither of these, however, were the progenitors of the garden Radish, which is commonly stated by botanists, upon rather insufficient evidence, to be a native of China. Both Greeks and Romans knew and grew the plant 2000 years, or longer. The Greek name is thought to have been suggested by the rapid increase of the plant; the Latin may be connected with "radix," because the root is conspicuous and capable of excessive increase in size. The Anglo-Saxon "radic" points to the same source. Its history as an Egyptian plant is of great but undefinable antiquity. Pliny states that the natives of that country grew it, amongst other reasons, that they might obtain oil from the seeds; and they had this inducement to cultivate it, the Radish was not liable to the tribute or tax which was chargeable upon corn. All admitted, in Pliny's day, the excellence of Radishes grown in Egypt, explainable, he says, by the fact that the plants were sprinkled or watered with a solution of nitre; he advises, therefore, the selection of brackish places for the culture of the vegetable. He appears to have been acquainted with both the long and the Turnip variety, and he mentions that one kind grown in Italy, and which was pulled during the winter, was raised from seeds produced in Syria. Some of the finest he had seen were obtained from a cold district of northern Germany. Of one transparent variety sold in Rome, he observes that it was so clear a person could see through it. We have Radishes semi-transparent certainly, but not one rivalling this ancient sort.

Though in some parts of France and Switzerland, and even in our island, some medicinal value is ascribed to the Radish, its repute is now small to what it was in the olden time. On the Continent they roast the roots under the ashes of the hearth, or compound a Radish syrup, both being used for hoarseness and chest affections. The Greek physicians declared that Radishes were a cure for consumption, dropsy, scurvy, excellent as a general antiscorbutic or diuretic. They appear to have recommended that the root be boiled ere taken, to remove all acrimony. Not so the Romans, they advised the sick to eat Radishes with salt before they took breakfast. A Pagan superstition was that the Radish served as a preventive and antidote in the case of poisons, either external or internal. It is quite probable the monks and others may have grown the Radish during the Middle Ages, though we do not read of it till we come to Hill's "Art of Gardening," published in 1568. He speaks of it as a vegetable then well known to husbandmen and citizens, to the poor as well as the rich. Gerard, when making reference to it about twenty years after, implies that the variety chiefly grown then was one white and semi-transparent. A black or purplish variety, common on the Continent for centuries, did not obtain English patronage, but the pink and the white Turnips were approved, though for a time the long Radish was supposed to be the more wholesome. Some persons still cut the young leaves to eat with Mustard and Cress as small salad. Our forefathers, however, did not disdain the mature leaves, which were boiled and eaten in the manner of Spinach; also they occasionally allowed the plant to go to seed, and pickled the green pods in July or August. Radishes of the monstrous size that are said to have been grown by the Romans would offer no temptations to modern epicures. We read of a Radish that weighed 40 lbs., of another 60, and another 80, but there is surely some exaggeration here. One author states that immense Radishes were produced by making a largish hole in the earth, filling this up with chaff nearly to the surface, placing then a seed therein, which was covered with dung and leaf mould mixed, and in time the root would increase so as to fill the hole. "White Radish!" appears in a list of old London cries, presumed to be of the date of Charles II., the price two bunches a penny, but as we do not know the size of the bunches we cannot tell if they were cheaper two centuries ago than at present.

The Horseradish acquired, in all probability, its distinctive name in our vernacular through its size, "horse" being formerly attached to sundry objects to express bigness, just as the word

"dog," in a compound name, implied contempt or dislike. Although the record of the street cries of Old London contains a large number of vegetables thus vended, the Horseradish is not amongst them, nor have we ever observed it on the barrows of the costermonger who struggles for existence in this age of cheapness. It is, and has been, a vegetable for the few rather than the many. There is really no evidence of any value that it is a plant alluded to by Dioscorides and Pliny, and we have to date its history from 1530, when it was satisfactorily described by Brunfels. It is found wild throughout Europe, having apparently a liking for hilly ground, but there have been some who regard it as a doubtful native of Britain, supposing that the specimens met with have escaped from cultivation. And in gardens the Horseradish has often received very careless treatment, being planted in some odd corner of the kitchen garden, or on a patch that has been made the receptacle of a promiscuous assortment of vegetables and flowers. No arrangement for its culture and periodic removal has been carried out, and in consequence there have been sundry instances where other roots have been dug up and eaten for Horseradish, especially the highly dangerous root of the Monkshood. That any person could eat a portion of this, however, and think for a moment that he was palating Horseradish, implies a sad lack of discernment, almost to be compared to the obtuseness of those ill-starred individuals who swallow oxalic acid in mistake for Epsom salts.

The botanist Gerard, of Elizabethan history, was acquainted with this species as a garden plant, and also as one growing wild, and he evidently believed it was a British species. He had noticed it in several localities, and names Namptwich, Cheshire, a place he calls "Milne-eye," not known to us. Moreover his esteemed friends, Master Bredwell and Master Martin, had discovered the plant near Hogsdon (Hoxton) not far from London, growing in a field between that village and Kingsland, where it flourished many years. He imagines that the Germans were the first to use the Horseradish at the table. They "stamped" it, and mixed it with vinegar as a sauce for fish. The French physicians had given the scraped root to expel worms, also they infused it to form an emetic draught. Outwardly it was applied to raise blisters, or a small quantity steeped in milk was used to form a cosmetic. Some also prepared a syrup or sweet infusion from it, which was taken in a variety of complaints, so that formerly its value as a condiment was rivalled by its importance as a natural medicine. A preparation from the Horseradish is still recognised by medical authorities, and it is an undeniable fact that the effect of this plant upon the human body is a very wholesome one as a deobstruent and a purifier.

The market gardeners at one period grew Horseradish, I think, more extensively than they do now, though it was considered to be an objection against it that at first the return of profit was slow, owing to the time it required. From its being partial to a moist and loamy soil, the banks of the Thames near London came to be selected for its culture, where acres of it might have been seen about Battersea, Bermondsey, and other suburbs. Perhaps it has since lost favour owing to the multiplication and extensive advertisement of a great variety of sauces. Having the remarkable property of reproducing itself from a fragment of the root, there is no difficulty in growing it upon the same ground year by year, when portions of the root have been taken up and stored for winter use, the smaller fibres left in the trench will produce a successional supply. Both Knight and Judd advise planting it in February or March, but Knight preferred buds from old plants, and Judd cut about 3 inches from the top of a root.—J. R. S. C.

### NATIONAL CARNATION, PICOTEE, AND AURICULA SOCIETIES (SOUTHERN SECTION).

I HAD not intended to send any communication to the papers in answer to Mr. Dodwell's letters. It seemed better to avoid any controversy, and I will try to do so now as far as it may be personal to myself. Since that decision I have been advised that Mr. Dodwell is taking steps to resist the action of the Committee. It is therefore, I think, only fair that I should try to justify my own action in the matter and also that of the Committee. As soon as I had finally decided to resign my office as co-Secretary, I believe amongst the first persons I made acquainted with my decision was Mr. Dodwell. I ultimately wrote to him, asking him to summon a meeting for October 14th. He could have called a general meeting or a committee meeting, I did not care which. He refused to do so, but wrote to me an evasive letter. I say this to show that the manner of summoning the meeting was left in the first place in Mr. Dodwell's hands. The next step I took was to summon a meeting for the 14th, and Mr. Dodwell was invited to attend. He knew why the meeting was summoned, the members of Committee I think did not. I ultimately, as I thought, wrote to all the members with the exception of two, who I knew could not attend, but I copied from the wrong list and omitted



Mr. Dean. To him I have apologised, and he accepts my apology in good faith.

Mr. Dodwell says he was elected by the general meeting held on February 12th last. A meeting of members was called for that date; but they did not choose to attend, they never did attend meetings. Mr. Dodwell knows well that the business has always been practically transacted by the Committee. All the members of the Committee present at that meeting were invited by me to attend on the 14th of October last. There was certainly one member present on the 12th February, a Mr. Rowan, but neither rules nor precedent would constitute one man a quorum to elect officers. It was well known to all the members present at the meeting that Mr. Dodwell had not resigned. He had not sent in his resignation. Mr. Dodwell and I have recently been so frequently at issue in transacting the affairs of these Societies that I am amazed he should think any explanation necessary. Indeed, he apprised me by letter that the "dual secretaryship had added to, not diminished the work." After all that has passed between us I cannot think that my resignation could have taken Mr. Dodwell by surprise. The Committee had to decide on the spur of the moment between Mr. Dodwell and myself. There were no rules to guide them; they acted as any other business men would have done. They reconstituted the Societies on a different basis. Office-bearers were elected for the year 1885. I was appointed sole Secretary (without a dissentient voice), Mr. Whitbourn of Great Gearies was elected President of the Auricula Society, and Mr. Llewellyn of Penllergare, Swansea, who had sent in his resignation, was asked by the Committee to reconsider it; and he has, at the urgent request of the Committee, also accepted the office of President of the Carnation Society for next year. Mr. Hibberd and Mr. Veitch of Chelsea were appointed Auditors, and Mr. Rolt of Wimbledon, Treasurer. Mr. Turner of Slough and Mr. Hibberd were appointed to draw up a code of rules; but I am advised that they will not be ready by November 11th. It will therefore be necessary to postpone the meeting until December 9th, when a general meeting will be called, at which the Committee will, no doubt, be prepared to justify their proceedings. Surely Mr. Dodwell cannot believe that the gentlemen present on the 14th October would transact any business that was not fair and open, or that they were animated by any personal animosity to him.—J. DOUGLAS.

#### LOWFIELD NURSERIES, CRAWLEY.

PLEASANTLY situated in an open district about two miles from Crawley on the London and Brighton main road, and four miles from Three Bridges—the most convenient station for visitors from the metropolis—are the nurseries of Messrs. J. Cheal & Sons, which have in the last dozen years gained a much more than local fame for outdoor hardy stock generally. Fruit trees have long been a most important feature in this establishment; to these have been added an extensive miscellaneous collection of the most useful trees and shrubs, while still more recently special attention has been paid, with remarkable success, to hardy herbaceous plants and single Dahlias, of which very fine collections have been formed. The last named in particular are largely grown, and many new varieties of great merit have originated in this nursery. For the fruit trees with ornamental trees and shrubs the situation is extremely well adapted, as while the soil is of that solid firm character which induces a strong but not too luxuriant growth, the openness of the situation insures their perfect hardiness, and Messrs. Cheal never feel the slightest doubt respecting the trees from their establishment succeeding in any exposed position in which they may be planted. The condition of the stock generally also indicates hardiness, the wood being well and freely developed, yet thoroughly matured and admirably fitted to endure keen winds and severe frosts. This is a matter of much importance, as all who have much planting to perform often experience to their cost when gross over-luxuriant and immature specimens are transferred from a sheltered position to a garden less favourably situated. These natural advantages, together with the most careful attention to transplanting, training, correct naming, and other important details, have enabled Messrs. J. Cheal & Sons to establish within the comparatively short space of fourteen years a flourishing business, ranking with the best of the kind in the kingdom, and reflecting considerable credit upon their skill, energy, and perseverance.

A glance at each of the departments mentioned will enable the reader to form some idea of the extent and general scope of the nurseries, commencing with the fruit trees, which occupy the greater portion of the ground. For several years Messrs. Cheal & Sons have given special attention to the cordon system of training, and the result is that an uncommonly good stock of these trees has been formed, and so much satisfaction have they given that the stock is being still further increased. Growers are becoming aware of the advantages possessed by such trees, which combine in a remarkable degree ornamental with useful qualities. Where in gardens of moderate extent it is desired to grow as large a number of varieties as possible cordon-trained trees are almost indispensable, and with a judicious selection the season of several kinds of fruits can be greatly prolonged. For ornamental purposes, such as training on iron arches over walks in the kitchen garden, they are also peculiarly valuable, as is well proved in the nursery under notice, where there is a most beautiful example of this method. The trees, both Pears and Apples, are trained over the arches, and meeting at the top form a tunnel of foliage and fruits which has a most distinct and effective appearance. It is surprising also what a number of fine fruits these cordon trees produce, the Apples, two to three years old and 3 to 4 feet high, having in many cases a dozen to twenty good

fruits. There are some large quarters of cordon Apples, between 6000 and 7000 being grown of about 200 varieties, including all the best in cultivation and some local varieties of merit that are too little known beyond the county of Sussex. They are all on the Paradise stock; and though the cordon system receives particular attention, the other modes of training are duly represented, bush and pyramid trees having large spaces devoted to them, and all are equally satisfactory. Of the local varieties referred to above, one deserves further notice—namely, the Forge Apple, which originated on the Forge Farm, a few miles from Crawley, and was first brought prominently into notice by Messrs. J. Cheal & Sons. It is a constant and heavy-cropping variety, the fruits of medium size, slightly conical, when ripe yellow streaked with red, and possessing a peculiarly rich and distinct aroma. Either for dessert or culinary purposes it is most satisfactory; it keeps well till Christmas, but is in its best condition during October and November. Many growers have conclusively proved the value of this variety, and recommend it highly for market culture, and when its merits are more widely known it will undoubtedly become a most favourite Apple.

Pears are grown in similar numbers to the Apples, and like them there is a large proportion of cordons, though the stock in other forms of training is also considerable. They are all worked on Quince roots, and in the case of varieties which do not succeed when immediately upon that stock double grafting is resorted to. Marie Louise, for instance, which makes very poor progress, or fails altogether on the Quince direct, is worked on to an intermediate stock of Ducebese d'Angoulême, which evidently suits it admirably, the growth being as free as could be desired. This subject is a most interesting and important one; and with a view to testing the partialities of certain varieties in regard to these intermediate stocks, Messrs. J. Cheal & Sons have tried several experiments which will doubtless yield some valuable results. It is very strange that 2 or 3 inches of wood introduced between the stock and the scion should make all the difference between success and failure, but that such is the case is now well known, though much more has yet to be learned on the subject.

Plums, Cherries, Peaches, Nectarines, Gooseberries, and Currants are all grown by thousands, representing good selections of the best varieties, and all are in that clean healthy condition which a fruit-grower can thoroughly appreciate. A very full collection of Strawberries is also cultivated, comprising nearly all the varieties known in England. Raspberries and several other fruits receive a share of attention, and all are alike satisfactory.

The trees include the majority of the leading Conifers, some of which are grown in very large numbers. *Pinus Laricio* and *P. austriaca* are well represented by strong carefully transplanted trees that might be fully relied upon to succeed where other less frequently moved specimens would be certain to fail. Unfortunately those engaged in planting these trees do not always fully recognise the importance of procuring such as have been transplanted several times, preferring the apparently cheaper and usually stronger-looking trees, which have not received so much attention. Nurserymen who have a credit to maintain always recommend the former, and the purchaser is undoubtedly the gainer, even though the price be ten times greater, for these two Pines, in common with a few others, have delicate slender roots, and often in the first or second transplanting 20 per cent. of the trees will be lost even if the greatest care be exercised. The survivors are those that have stronger closer roots, and therefore the more fitted for planting permanently. *Pinus cembra* succeeds capitally in the Lowfield Nurseries, making sturdy vigorous growth, and, being a strong-rooting species, it bears transplanting well, and is therefore in much demand. Deodars, Scotch Firs, Spruce, and Cypress are grown by thousands, and one charming variety of *Cupressus Lawsoniana*—namely, *erecta viridis*, is in better condition than we have previously seen it. In growth it is most elegant, being erect and conical, and the colour is a very distinct bright shade of green, which, in contrast with the other darker varieties, is most remarkable. *Picea lasiocarpa*, *P. Nordmanniana*, *Abies Menziesii*, *Abies Douglasii*, *Cupressus Nutkaensis*, and *Thuja Lobbi* are, with many other established favourites, grown in considerable numbers and equally well.

A good general collection of deciduous trees and shrubs is represented, and some, like the Black Italian Poplar, occupy several acres. This Poplar is now being largely planted in Sussex for underwood, as owing to its quick growth it is found to give a quicker return than many other trees employed for this purpose. The saplings, when of a suitable height, are in especial request for Hop-poles, and when the base has been saturated in creosote they are extremely durable. As an avenue tree this Poplar is also very valuable, especially in towns and exposed places, one of the finest examples of its utility in this respect being afforded by the beautiful avenue in Finsbury Park, London. Maples, Oaks, Limes, Planes, and innumerable other trees are proportionately abundant, while the shrubs include all the best in cultivation. Laurels are an important feature. The Portugal Laurels are uncommonly fine, some six-year-old specimens being in grand condition, while of the common Laurel nearly 50,000 plants are grown. In regard to the latter it may be remarked that the chief favourite is the variety *rotundifolia*, which has broader, rounder, and brighter green leaves than the ordinary form, and is moreover much more hardy. This is due to its growth being finished and ripened earlier in the autumn than that of the common variety, and consequently is better enabled to resist the frost. The variety *cancasica* is also extremely hardy in some districts, more so than *rotundifolia*, but its leaves are narrow and darker green, the plant being also less compact in habit, and therefore does not make so good a bank or hedge. Of Rhododendrons there are about 100 varieties, the soil and situation apparently exactly suiting them, for they grow vigorously and flower freely. The



plants are all home-grafted, and in the propagating house is now the usual large annual stock in course of preparation.

Near the entrance to the nurseries the large beds of single Dahlias have for several months during summer and autumn, and even late in October, yielded a profusion of brilliantly coloured flowers, which have well indicated the decorative value of these popular plants. Not only are all the most distinct and effective of other raisers' varieties grown, but several of great merit have been raised in this establishment, and one of these (*Formosa*) has been honoured with a certificate this season.

Scores of beautiful hardy plants are grown, and in one portion of the nursery is a tastefully arranged rockery on a small scale, but sufficient to show how a moderate space and little material can be utilised.

In concluding these brief notes of a most agreeable visit our heartiest thanks are due to Messrs. J. Cheal & Sons for their courtesy and attention.—L.

### CACTACEOUS PLANTS.

(Continued from page 334.)

*OPUNTIA*, Miller.

(The Indian Figs or Prickly Pears.)

THE ordinary type of *Opuntia* is one of the most familiar forms of Cactus. The peculiar flattened, oval, or elliptical branches destitute of leaves, but armed with abundant spines, constitute the distinguishing characters of the Indian Figs as they are known to most people, and that, in fact, is the predominating form in this large genus. There are, however, many very striking departures from these prevailing characters: for instance, several species have irregularly cylindrical stems and slight elevations of the surface, similar to but not so prominent as the tubercles in other genera, and identical with them in structure. Some of these species have very slender stems, such as *O. leptocaulis*, and when not in flower could scarcely be recognised as a member of the Indian Fig group. In one respect the *Opuntias* are especially peculiar, and this is in the production upon the younger branches, particularly of the flat-stemmed kinds, of small thick fleshy appendages, which are regarded as leaves, or, at least, as their representatives. These appear below the clusters of spines, and are very prominent upon the young growth of *O. vulgaris* and others, but they either become shrivelled and scarcely perceptible as the stem increases in age, or they fall off, and they never advance beyond the rudimentary state mentioned. Structurally this is interesting, as it is a step towards the leaves which we find so strongly developed in the next genus, *Pereskia*. The intermediate gradations appear to have been lost, for the transition is a very sudden one from the grotesque *Opuntias* to the comparatively slightly modified *Pereskia*, which makes the nearest approach to the ordinary characters of flowering plants.

The floral structure of the Indian Figs does not present any strongly marked variations. The sepals and petals are very numerous and indistinguishable, the outer generally narrow, the inner broader and spreading. The stems are shorter than the petals in a dense central cluster, above which the five to seven-lobed stigma is slightly raised. A large proportion of the species have yellow or orange-coloured flowers, and though some of these are exceedingly handsome the majority are not very imposing and of little value in gardens. The fruits, which have given the popular name to this genus, are comparatively large, 3 to 4 inches long and 2 to 3 inches in diameter, egg-shaped, or in a few cases somewhat Pear-like in form, covered with clusters of minute spines, and containing a sweet or sub-acid pulp of a rather agreeable flavour. Over 150 species are known, all natives of America, principally California, Mexico, Chili, and Peru, but two or three have been so long naturalised in South Europe, North and South Africa, and other widely separated portions of the globe, that they have become as abundant as native plants, and are often regarded as such by travellers.

One highly important service the *Opuntias* render to man in the districts where they thrive—they make admirable live fences or natural barriers, and for this purpose they are largely employed, not only in America, but also in South Africa. In one remarkable instance it is recorded that when the Island of St. Christopher in the West Indies was divided between the French and English, three rows of *Opuntia Tuna* were planted to mark the boundary. As an effectual protection against depredators of all kinds the *Opuntias* are indeed useful "hedge" plants, as they form a dense growth, the branches closely interlacing and bristling with spines—a veritable *chevaux de frise*—absolutely impassable. The value of such a defence can be fully appreciated in the countries where it is most employed, and where, without its aid, man would be almost powerless to prevent the devastating inroads of many enemies. When employed in this way portions of the branches are broken off and placed in trenches of a suitable depth, and there ends the attention afforded to or needed by the plants. They grow in any dry sandy soil, and will subsist where scarcely any other vegetation is found—namely, on the porous lavas of volcanic districts. In Sicily a striking instance of this is seen, for there the *Opuntia vulgaris* grows and thrives in what would otherwise be sterile districts; and in this power of preparing sterile soils for other vegetation, the *Opuntias* strangely resemble the Mosses, Lichens, and similar minute cryptogamic plants.

In so large a genus as *Opuntia* it would be unnecessary to enumerate many of the species as, except in a botanical point of view, a good proportion are of little interest. A few of the best may, however, be noted.

*O. VULGARIS*, Miller (*Cactus Opuntia*, Linnæus).—In Gerarde's "Catalogue of Plants," published in 1596, this *Opuntia* is mentioned, and it also appears in the "Herball" under the name of *Ficus indica*, the Indian Fig Tree, so that it has been grown in this country for nearly 300 years, and is, therefore,

the patriarch of the Cactææ. It had, however, been then grown for some years in South Europe, and Gerarde obtained his plants from Zante through his servant Marshall; but the exact time of its introduction does not appear to be known, though it probably occurred shortly after the Spanish expeditions to America early in the sixteenth century. Gerarde states that he was unable to fruit the plant, although he had "bestowed great pains and cost in keeping it from the injury of our clymat." In Johnson's edition of Gerarde's "Herball" (1633), a fairly accurate figure is given of the plant, and from that it is evident that he succeeded in flowering it as freely as could be desired, and we cannot do much more now without protection. Having been so long cultivated in Europe it has extended into most of the warmer districts of Spain, Italy, and the Mediterranean Islands and North Africa, and there, under the influence of a higher temperature, the fruit ripens readily. Large quantities of these are consumed in those countries, and some are imported to England, where, with the fruits of a few other species, they are sold under the name of Prickly Pears. They are esteemed by some persons, but they are more usually employed as a curiosity in dishes or dessert, as the minute spines which cover the skin render the fruit in some degree dangerous if not very carefully peeled. At one time they were sold at from 4d. to 6d. each, but in recent years they have been so abundant that they occasionally appear on street stalls and barrows in London at the popular price of two for a penny. In Sicily it is very abundant, and during three months of the year it is said to form "an important portion of the inhabitants' diet, though generally considered insipid by strangers."

The common Indian Fig is rather dwarf in habit, with flat, rounded, spiny branches, upon the edges of which its rich golden yellow flowers are freely produced, and the plant is then decidedly ornamental. It is one of the best of the Cactææ for culture on a rockery, and is often left quite unprotected, though a handlight is beneficial to throw off excessive rain, and the plants so treated always have a better appearance than those constantly exposed to the weather. In reference to the culture of this plant out of doors Mr. D. Dewar, Superintendent of the herbaceous department, Royal Gardens, Kew, writes me as follows:—

"Although the cultivation of hardy Cacti in the open air has not been so successful as desired in some gardens, where artificially constructed positions have been given them, the result has been fairly satisfactory. Exposed on the open rockery they will live, but our moist climate tries them severely, especially in winter. Under projecting ledges, as seen at Floore, Weedon, and where there is little chance of their being exposed to too much rain, they flower with remarkable freedom, but this plan requires material not within the reach of all lovers of hardy plants. The best method of growing these plants that I have seen, and which I am now practising, is simply placing a small handlight in a specially dry and sunny position, placing inside 2 inches depth of broken bricks, stones, and lime rubbish, planting the *Opuntias*, or other Cactææ, and leaving them unattended. *Opuntia vulgaris* grows vigorously under this treatment and flowers freely, and needs scarcely any attention from January to December. The lights are never taken off winter or summer. No water is given at any time after they are established, and yet they are as healthy as possible. *O. vulgaris* is the most common and the easiest to procure, but we have also *O. missouriensis*, *O. Rafinesquei*, and others, all of them perfectly hardy and easily managed as described. *O. vulgaris* grows more rapidly than the others; the joints are oval, flat, covered with small leaves which come out in knots on the branches and which soon fall, leaving a number of short bristly hooked spines. The branches spread near the ground, or trail upon it snake fashion, putting out new roots at every joint as they go, and thus facilitating progress, seldom rising more than 6 inches in height. As the plant begins to grow old the first-formed joints begin to get hard and dry, of a tough texture, and inclined to be fibrous or woody. Blank spaces are easily averted by pegging over some of the younger branches."

*O. RAFINESQUEI*, Engelm. — Quite a recent introduction is this handsome hardy *Opuntia*, for it is within the past twenty years that it made its *début* in England. It has, however, become an established favourite in gardens, as when in flower its beauty is amply sufficient to recommend the plant to the most fastidious. It somewhat resembles *O. vulgaris*, and the latter is occasionally seen under this name; but *O. Rafinesquei* has more elongated branches, fewer smaller spines, and the flowers, though about the same size, are slightly paler and softer in colour. It is very floriferous, and being perfectly hardy it grows well on a rockery or a dry raised border, where, during July and August, it will bear a succession of blooms each 3 to 4 inches in diameter. If a position is prepared for it the soil should consist of loam, sand, and plenty of finely broken bricks, as too much moisture about the roots will do the plant more injury than will moderate frost. The stock can be quickly increased, as the branches form roots if placed in sand under a frame.

*O. TUNA*, Miller (*Cactus Tuna*, Linnæus).—This is a very strong-growing species, and is one of the principal of those employed for fences and hedges, as already mentioned. It is also one of the Cochineal plants, and in some districts is more largely grown for that purpose than the *Nopalea*, particularly in Mexico, its native country, but in many other parts of America it is nearly as abundant. The branches are long, flat, and elliptical in form, with numerous yellowish spines. The flowers are large, pale yellow, or with a rosy tint, and are followed by the characteristic "Prickly Pears" of the genus. One interesting peculiarity of the stamens in this species was long ago observed by Dr. J. E. Smith, then President of the Linnean Society, and published by him in a volume of "Tracts Relating to Natural History" in 1798. In one of these the author discusses the various phenomena connected with the "Irritability of Vegetables," especially referring to the stamens of *Berberis communis*. In connection with this he mentions, "The Barberry is not the only plant which exhibits this phenomenon. The stamens of *Cactus Tuna*, a kind of Indian Fig, are likewise very irritable. These stamens are long and slender, standing in great numbers round the inside of the flower. If a quill or feather be drawn through them, they begin, in the space of two or three seconds, to lie down gently on one side, and in a short time they are all recumbent at the bottom of the flower." I have tested this, and find that the rapidity of the response to the stimulus varies greatly with the condition of the weather at the time, and the age of the flower. In some cases the stamens appeared to have quite lost the property ascribed to them, and in others several minutes elapsed before there was any perceptible motion. The peculiarity is, however, not confined to *O. Tuna*, some other species



exhibiting a similar sensitiveness, but the case is not quite analogous to that of the Berberis, the arrangement in that flower being more of a mechanical nature.

*O. SALMIANA*, *Parmentier*.—One of the most attractive of the slender-growing species with cylindrical stems is that upon which has been bestowed the name of a celebrated patron of the Cactus family, Prince Salm-Dyck. It is a native of Brazil, and was introduced about 1850, having been received at Kew from the continent about that time, and it has since then become one of the most favourite forms of the group in cultivation. As shown in fig. 70, which is a very slightly reduced representation of a portion of the plant, the stems are very slender and cylindrical, with numerous little tufts of small spines, and bearing near the summit dense clusters of very pretty neat open flowers. These are  $1\frac{1}{2}$  to 2 inches in diameter, creamy white, the buds and outer surface of the petals being tinted with red, which gives a most pleasing appearance to the plant. It requires to be grown in a warm position, and needs a light soil, loam and leaf soil in equal parts having been found to suit it admirably. It is well worthy of more extended cultivation.

*O. ARBORESCENS* (the Walking Stick or Elk-Horn Cactus).—This species, which grows in Colorado and contiguous districts, has a narrow much-branched stem, which often rises to a considerable height. These stems are cut, and after the fleshy substance has been removed there remains a hard woody network of thick fibres, which is converted into walking sticks. Specimens of this kind from Colorado, presented by E. G. Loder, Esq., are included in the collection at the Kew Museum. The same gentleman has also sent me some beautiful photographs of the scenery where this plant abounds, one view of the Grand Canon of the Arkansas being especially remarkable.

Amongst other notable species the following especially deserve



Fig. 70.—*Opuntia Salmiana*.

brief mention:—*O. aurantiaca* (*Cactus aurantiacus*), a Chilean species, with bright orange flowers and irregularly terete stems. Introduced in 1824. *O. brasiliensis*, with irregularly flattened and branching stems, bearing scattered solitary dark spines 1 to 2 inches long, and pale yellow flowers 3 inches in diameter. The odour of the ripe fruit has been thought to resemble the leafstalks of garden Rhubarb. *O. candelabiformis*, a remarkable plant, with flat almost circular branches about 6 inches long by the same in width, and closely covered with white spines. *O. curassavica* (*Cactus curassavicus*), the Pinpillow or Minion Prickly Pear, deserves notice for its historical interest. It was one of the few Cactæe figured in Bradley's work on Succulent Plants, where it is named *Opuntia minima Americana spinosissima flore sulphureo*, and is said to have flowered and fruited in the Duchess of Beaufort's garden at Badminton, and on the authority of the "Hortus Kewensis" we learn that it was introduced from Curaçoa in 1690. The flowers are greenish-yellow, not very handsome. *O. cylindrica*, a very distinct species, with cylindrical stems and spindle-shaped tubercles, each bearing a tuft of spines at its summit. The flowers are red, 2 inches in diameter, and the plant was introduced to England in 1799.

*O. DARWINII*.—This species is interesting, as having been discovered by Mr. Charles Darwin in Patagonia, and it is mentioned by him in his "Naturalist's Voyage Round the World" as follows (p. 165):—"I found here a species of Cactus which was remarkable by the irritability of the stamens when I inserted either a piece of stick or the end of my finger in the flower. The segments of the perianth also closed on the pistil, but more slowly than the stamens. Plants of this family, generally considered as tropical, occur in North America in the same high latitude as here—namely, in both cases in 47°." In the volcanic islands of the Galapagos Archipelago the same writer found an *Opuntia*, which was afterwards named *O. galapageji*, a tree-like species 6 to 10 feet high, and this is probably the plant mentioned in his account of these islands as "a great odd-looking Cactus, which, with some of the Euphorbiaceæ and an Acacia, are the only trees which afford any shade. After the season of heavy rains the islands are

said to appear for a short time partially green. The volcanic island of Fernando Noronha, placed in many respects under nearly similar conditions, is the only other country where I have seen a vegetation at all like this of the Galapagos Islands." *O. decumana* is an extraordinary plant, represented in the Kew collection by a specimen 12 feet high and of considerable age. It has huge elliptical flattened branches 12 to 20 inches long and 8 to 10 broad, with a few spines, the lower older portion of the stem being cylindrical, woody, and about 8 inches in diameter. It is a South American plant, has orange-coloured flowers, and has been described by various authors under the name of *O. maxima*, *Cactus elongatus*, and *Cactus decumanus*.

*O. DILLENII* (*Cactus Dillenii*).—One of the species cultivated at Eltham in 1732, being described and figured in Dillenius' work as *Tuna major spinis validis flavicantibus flore sulphureo*. It has flat stems with strong yellow spines, and bears yellow flowers 3 to 4 inches in diameter. This plant is grown in Teneriffe for its spines, which are employed to secure the clusters of cochineal insects to *O. Tuna* at the "sowing" period already noticed. In a group of flowers painted by Miss North at Teneriffe, and now in the North Gallery at Kew, this species is well represented, several views of the cochineal gardens in which it is employed being also given. In England this *Opuntia* flowers very freely, its large yellow blooms being very attractive. *O. horrida* well deserves its name, for it is a most formidable plant, the spines 2 to 3 inches long, very strong, of a peculiar tawny colour, and in clusters of seven or eight each. *O. imbricata* has irregularly cylindrical branching stems and tufts of white spines. *O. Kleinia*, also with cylindrical stems, receives its name from a slight resemblance to some of the *Kleinias*. *O. leptocaulis* is one of the most slender-growing *Opuntias*, the stems often not exceeding one-eighth of an inch thick. *O. leucotricha* has a curious appearance, owing to its oval flat branches being closely covered with long white spines, which are deflected towards the base of the plant and almost level with the surface. *O. microdasy* is a rather pretty dwarf and much-branched species, which with its variety *rufida*, has numerous small tufts of reddish-brown hair-like spines covering the elliptical flattened branches. *O. monacantha*.—This is one of the best known of the flat-stemmed Prickly Pears, as it is largely grown for sale with the miniature Cacti. It has dark green stems, with scattered solitary spines, and bears neat bright orange-coloured flowers. *O. nigricans*.—This is another of the largest specimens at Kew one old example there being of corresponding dimensions to *O. decumana*—namely, 12 feet in height, the branches 12 inches long by 6 inches broad, and bearing very dark spines 2 to 3 inches long, the flowers orange-red, and the fruits pear-shaped and rich crimson when ripe. This has been described as *Tuna major* (Dillenius), as *Cactus Tuna* var. *nigricans*, as *Cactus Tuna*, and as *Cactus nigricans*, and it appears to be one of the species upon which the cochineal insect lives.

#### PERESKIA, *Miller*.

(The Gooseberry Cactus.)

In all the preceding genera of the Cactus family we have been reviewing a form of vegetation widely different in appearance from the ordinary characters of flowering plants, particularly as regards the stem structure, but in the *Pereskia* by a sudden transition we come to a group of plants evidently connecting the family with several orders. The stems have lost the bulkiness of many Cactæe, and though still fleshy in a certain degree, and armed with clusters of spines, they are cylindrical and more shrub-like in form, while they bear normal leaves veined like the majority of exogens, and often with a distinctly developed stalk (petiole). The flowers, too, are very distinct, the petals being rotate—that is, spreading like the spokes of a wheel, and in several cases they bear a close resemblance to single Roses. The flowers are produced in a form of inflorescence, which is not found in any other member of the family—namely, clustered or paniculate at the sides or points of the branches, and this alone gives the *Pereskias* a unique appearance, and renders them easily recognised. Thirteen species are known, all natives of tropical America and the West Indies, but few are in cultivation, and these are in England chiefly employed as stocks for other kinds of Cactæe, such as the *Epiphyllums*.

The genus was named in honour of N. F. Peiresk, a senator of Aix, who is said to have "collected a considerable library and herbarium, but published nothing." The name is sometimes spelled *Peirescia*.

*P. ACULEATA*, *Plumier* (*Cactus Pereskia*, *Linnaeus*), THE BARBADOES GOOSEBERRY OR BLAD APPLE.—Though this plant is rarely seen in England except as a stock for *Epiphyllums*, or in course of preparation for that purpose, it is decidedly ornamental when trained to the roof of a house and allowed to flower. Its white blooms are much like a single Rose, or some form of *Rubus*, are produced in panicles of a dozen or more, slightly drooping and very graceful, the narrow white petals and similar green sepals contrasting rather pleasingly. The leaves are ovate or elliptical, 3 to 4 inches long, 2 to 3 inches broad, dark shining green; and the stems, which attain the height of 10 to 12 feet, and 1 to 4 inches in diameter, have numerous dense clusters of strong spines. As the popular name implies, the fruit is much like a Gooseberry, the similarity being observable not only in the form and size, but in the colour and flavour also, and in some of the West Indian Islands, especially in Barbadoes, a much valued preserve is prepared from the fruits, and is said to possess expectorant qualities. The use of this plant as a stock has been described under *Epiphyllum*, and it need only be added that it can be raised from seeds as well as from cuttings, the latter being, however, the quicker method. The time of flowering varies, sometimes occurring in the summer months, July, August, or September, and at others in early spring.

This species has been an inhabitant of English gardens for a great number of years, as it is recorded as included in the Hampton Court collection in 1696, and is mentioned by Dillenius thirty or forty years subsequently. When it was first used as a stock for *Epiphyllums* is uncertain, but it was employed in that way early in the present century. Several varieties have been described differing in the leaves, such as *lanceolata*, *rotundifolia*, and *rubescens*, the names indicating the characters.

*P. BLEO*, *Decandolle*.—An extremely distinct and bold-looking plant, with strong cylindrical stems, clusters of long formidable spines, and large dark green obovate leaves, 4 to 6 inches long, and 3 to 4 inches broad. It



attains considerable size, growing rapidly, and soon reaching under cultivation a height of 10 feet, frequently requiring to be cut down to keep it within bounds. The flowers are round, 1 to 2 inches across, the petals similarly placed to those in *P. aculeata*, but broader, and of a rich rosy crimson colour, varying slightly in depth of tint, being sometimes more delicate in hue; but all are pretty, as the flowers are borne in clusters or close panicles on the upper part of the branches, and are produced about the same time as *P. aculeata*, varying like that species. It is one of Humboldt's discoveries, having been found on the banks of the Magdalena in New Grenada, but it was first received in Britain from Mexico, whence it was sent to the Glasgow Botanic Gardens in 1827. In America the native name for the plant is Bleo, and in some parts the leaves are said to be used as a salad.

Owing to its quick growth, and the stem being stronger than *P. aculeata*, this would probably make a good stock for large specimen Epiphyllums; but no instance of its being so employed has come under my notice, though it would be well worth a trial.

Few of the other *Pereskias* are cultivated, but one, *P. calandriniaefolia*, is used on the Continent as a stock for Epiphyllums, though I am not aware that it is superior in any way to *P. aculeata*. Several are named after the resemblance of their flowers to other plants, as *P. lychnidiflora*, *P. opuntiaeflora*, and *P. zinniaeflora*, most of the others having names referring to the form of the leaves, the flowers being generally rose-coloured, while in a few cases the leaves are small and almost as rudimentary as in some of the *Opuntias*.

#### CACTUSES OUT OF DOORS AND IN COLD FRAMES.

In the preceding notes some reference has been made to species that can be grown out of doors in England, but the following summary of Mr. E. G. Loder's practice as described by him at the evening meeting of the Royal Horticultural Society in Burlington House, May 8th, 1883, will indicate what success may be expected under this system. When planted out of doors a dry sloping border is selected, or a position near the rockery where the plants are protected from rain by projecting ledges of stone, where some fifty species of Cactæ and other succulent plants have endured 16° of frost without injury. Of the Cactæ the following have been so treated:—*Echinocactus Simpsoni*, *Echinocereus phoeniceus*, *E. viridiflorus*, *Mamillaria vivipara* var. *texensis*, *Opuntia arborescens*, *O. missouriensis*, *O. missouriensis* var. *humilis*, *O. m.* var. *trichophora*, *O. erinacea*, *O. Rafinesquei*, and *O. vulgaris*. No doubt many others could be given in the same way; but a preferable mode of cultivating even these hardy species is in a cold frame, as the plants always have a better appearance. Mr. Loder's method is to place the pots on planks raised slightly above the soil, and cocoa-nut fibre refuse is packed between the pots. No water is given throughout the winter, but in the spring and during the summer the plants are watered and syringed freely, closing the frames early in the afternoon. By this means a quick healthy growth is induced, which is well matured in the autumn by removing the lights except in wet weather, and the plants flower even more readily than some of those grown in heated houses. The principal species that have been grown in such frames are *E. chloranthus*, *E. Fendleri*, *E. gonacanthus*, *Opuntia comanchica*, *O. hystricina*, and *O. Whipplei*; but, as was observed in the earlier chapters, a large number of Cactæ are benefited by being so treated during the summer months.

#### DISEASES AND INSECTS.

Cactaceons plants are subject to few diseases, and the only one which gives any trouble to the cultivator is a decay of the stem, which is sometimes very rapid. It is occasioned by excessive moisture in the soil, or more frequently perhaps by a drip from the roof of the house, and can be guarded against by the exercise of a little care. If a decay spot is observed it is a good plan to rub a little lime on it or cut the piece out, and fill the hole with lime; but very often when the injury is first noticed it is too late to effect a cure, so that preventive measures are in this, as in many other matters, much the best. Numerous insects attack these plants—green fly, red spider, mealy bug, and various kinds of scale, but the two last-named are the most troublesome and difficult to eradicate. The mealy bug in particular harbours in the clusters of spines, and is not easily removed by syringing, a small stiff brush being the most useful and ready means of cleaning the plants. Scale can be removed in a similar way, or with a small pointed stick, and green fly can be easily destroyed by moderate fumigation with tobacco. An excessively dry hot atmosphere causes the appearance and rapid increase of red spider, which soon effectually injures the plants. Cooler quarters, with frequent syringing, or sponging with soft soap and water, will soon diminish their numbers, while diluted petroleum is strongly recommended by some persons for the same purpose, Mr. Wright, who has charge of the Cromwell House collection, relying exclusively upon this as an effective insecticide.—LEWIS CASTLE.

#### CHRYSANTHEMUM SHOWS.

Now that the show season is on us, I wish to point out that exhibitors from a distance are caused great inconvenience and expense by Secretaries either refusing to send back the exhibits or making it such a favour that gardeners do not like to ask.

Now, I contend that if a gardener takes his exhibits and stages them (I do not include plants, only cut blooms), the Secretary is bound to send them back, the same as fowls in the poultry shows. If the Secretary does not do that, what has he to do? He has none of the staging to do and none of the packing.

I feel certain that shows would improve if Secretaries were to undertake the sending back of cut bloom exhibits, for the simple reason that a great number of amateurs like myself would send flowers to a greater distance if it were not for the expense of having to send a man on purpose

to fetch the exhibits back, sometimes a distance of over sixty miles. I hope the subject will be well ventilated and receive the support of your valuable paper.—J. FREEMAN.

#### FAWKES' IMPROVED SLOW-COMBUSTION BOILER.

SEVERAL improvements have been recently introduced into hot-water boilers by Mr. Fawkes, of the firm of Crompton & Fawkes, formerly T. H. P. Dennis & Co., of Chelmsford. The annexed section will illustrate very clearly of what these improvements consist. The boiler has a flat front, so that it can be easily built into a wall of a greenhouse similar to some other boilers. In this way the feed door and door for regulating draught and smoke flue are all outside the house, and consequently no fumes can injure the plants. The front is backed by a fire tile, by which means excessive radiation of heat into the open air is prevented. The boiler stands on a flat fire tile, in order that the true slow-combustion result may be obtained, as the air which is required to maintain combustion is only admitted in front of the fuel instead of underneath, so that complete control is maintained over the rate and manner of combustion. Not only so, but in consequence of no ash pit being required,

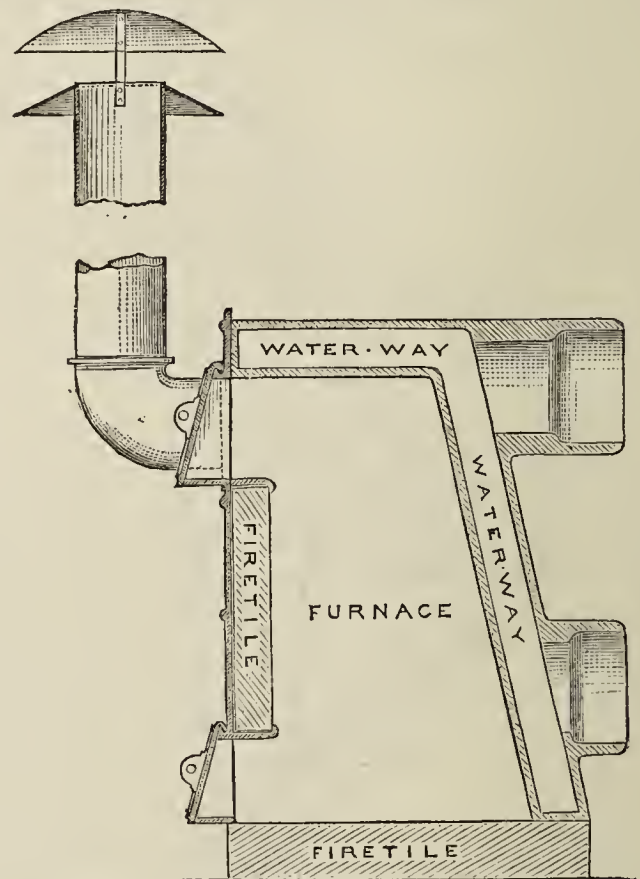


Fig. 71.—Fawkes' Slow-combustion Boiler.

a boiler occupying the same space as other ordinary boilers will, of course, contain a much larger furnace area and heating capacity. As will be seen, the back of the boiler is inclined, so that there is a greater tendency for the hot gases to impinge upon the water way than if the back were parallel with the front. In addition to this, by a very slight modification of the ordinary smoke flue cap, Mr. Fawkes claims to prevent all possibility of down draught. We understand these improvements would have been made public before, but Mr. Fawkes was anxious, by carefully testing his boilers, to ascertain that they were as near perfection as possible before introducing them to the public. This boiler has the additional merit of extreme cheapness, as we understand that by means of improved appliances and machinery in manufacture, a boiler powerful enough to heat 55 feet of 4-inch pipe with perfect ease can be delivered anywhere in England for 50s.

#### EALING CHRYSANTHEMUM SHOW.

NOVEMBER 5TH.

THE seventh autumn Show of the Ealing and District Horticultural Society was held in the Lyric Hall, Ealing Broadway, on Wednesday last, and, to the great satisfaction of the officials and visitors, proved the best the Society has yet held. The Hall is a spacious and handsome building, admirably adapted for an exhibition of this character, and the arrangement of the exhibits being very carefully directed an extremely pretty effect was produced. In the centre was a table upon which were arranged the cut blooms, the stands being divided by a number of handsome Crotons, Palms, and Dracenas from Mr. Hudson. At the sides of the building were placed the groups of plants, and at the end near the platform was the charming group from Mr. J. Roberts. The energetic Secretary, Mr. R. Dean, deserves much credit for the admirable Show he has assisted



in producing, and the Society evidently merits all the encouragement it receives from the leading residents in the district.

In the cut bloom classes the most important was that for twenty-four blooms, sixteen incurved and eight Japanese, and a very beautiful effect was produced by the eight collections staged, which were throughout distinguished by high quality and freshness of colour. The premier prize was awarded to Mr. W. R. Strong, The Gardens, Wellington College, Berks, for magnificent blooms, the back row consisting of the following Japanese:—Criterion, M. Plancheron, Tarantula, Meg Merrilees, Elise, Hiver Fleuri, Thunberg, and Mme. C. Audiguier. The incurved were Prince Alfred, Mrs. Heales, Lord Wolseley, Golden Empress, Queen of England of wonderful size and substance, Mr. Corbay, Emily Dale, and White Globe in the second row, and White Venus, Mr. Brunlees, Cherub, Princess Imperial (Lord Alcester), Angelina, Princess of Wales, Nil Desperandum, and Lady Slade in the front row. A very close second was Mr. C. Herrin, Chalfont Park Gardens, Gerrard's Cross, Slough, his Japanese being superior to the first; but the incurved were smaller, though very clean and even. Refulgence was exceedingly good, the best bloom we have seen at present. Mr. J. Beesley, gardener to A. Frazer, Esq., Esthonia House, Ealing, was third, and Mr. Wood, gardener to Mrs. Sanderson, Duke's Avenue, Chiswick, fourth. An extra prize being adjudged to Mr. E. Berry, The Gardens, Roehampton House, Roehampton. For twelve blooms, four Japanese and eight incurved, Mr. Beesley was first with neat samples, F. A. Davis in his back row being exceedingly fine. Mr. Collyer, gardener to Mrs. Murrell, The Elms, Uxbridge Road, being second; Mr. E. Chadwick, gardener to E. M. Nelson, Esq., Hanger Hill House, Ealing, third; and Mr. E. Smith, gardener to Thomas Nye, Esq., Oakville, Castle Hill, fourth. Mr. Beesley was also first with six Japanese, F. A. Davis and Comtesse de Beauregarde being his best blooms, Messrs. E. South, J. Baird, and Collyer following. Several other classes for cut flowers were also well filled.

Specimen Chrysanthemum plants were good, but not of extraordinary merit. Mr. Chadwick was the chief exhibitor, taking first place with four large-flowered and four Pompons, the former including Prince of Wales and Hiver Fleuri, in good condition. Of the latter Prince Victor, White Cedo Nulli, and Mr. Astie were very freely flowered. Mr. E. Smith followed closely in both classes. Other exhibitors were Mr. G. Elliott, gardener to Joseph Moore, Esq., Melbourne Lodge, Queen's Walk, Ealing, who carried off several prizes, and Mr. E. Smith. The former of these two exhibitors was also in the premier place with fine groups of Chrysanthemums, and a similar award was granted to Mr. Chadwick for a group of miscellaneous plants, including Gloxinias, Palms, Crotons, &c. Bouquets were pretty. Mr. Chadwick was first with a tasteful combination, chiefly of Japanese varieties, and he was also first with a stand of stove and greenhouse flowers.

Fruit was not largely represented, but the Apples and Pears were good, the principal winners being Mr. Chadwick; Mr. W. Wright, gardener to G. P. Springfield, Esq., The Spring, Hanwell, who also had three well coloured bunches of Alicante Grapes; and Mr. Fountain, gardener to Miss Wood, The Elms, Hanger Hill, Ealing. Not for competition were six dishes of large Pears from Mr. G. Jarlanbory, gardener to C. B. Bingley, Esq., Stanhope Park, Greenford; and from Mr. Hudson, gardener to H. J. Atkinson, Esq., of Gunnersbury House, Ealing, came eight fine bunches of Muscat of Alexandria, West's St. Peter's, and Alicante Grapes, together with several dishes of Apples and Pears.

Vegetables were well represented by several clean collections, the best being that shown by Mr. W. Peasey, St. Matthew's Road, Ealing. Potatoes were very largely shown, about 200 dishes being entered and the majority very even, creditable samples. Mr. R. Dean, Ealing, exhibited twenty-two dishes of varieties, Potatoes raised and sent out by himself, several of which have been certificated. Messrs. Sutton & Sons' prizes for four dishes of Potatoes, open to cottagers, brought sixteen competitors, all staging even and good tubers. Not the least interesting of the Potato classes were those for cooked Potatoes, of which fifteen dishes were entered.

The not-for-competition exhibits comprised several beautiful groups and collections, the following being especially noteworthy:—A most charming and tastefully arranged group of plants from Mr. J. Roberts, gardener to Leopold de Rothschild, Esq., Gunnersbury Park, Ealing, occupied the fore part of the platform, and consisted of Calanthes Veitchi and vestita, Nerine Fothergilli and sarniensis, Carnations, Pelargoniums, Crotons, Ferns, and Panicum variegatum, producing an extremely bright and handsome effect. Messrs. C. Lee & Son, Hammersmith, had a group of well-grown Chrysanthemums, bearing fine bloom, and a good collection of cut blooms was also staged by the same firm.

Mr. Harman, gardener to T. C. Capps, Esq., Crown Point, Ealing, sent a number of handsome Chrysanthemum blooms. Messrs. H. Cannell & Sons, Swanley, had some superb blooms of Zonal Pelargoniums, including the pure white variety, Queen of the Belgians, in splendid form. Mr. H. B. Smith, Ealing, showed a group of healthy and freely flowered Cyclamens, the blooms large and of good colour. Mr. Hudson, Gunnersbury House, contributed some very tastefully arranged stands of flowers, comprising Solanum jasminoides floribundum, very fine; Bouvardias, Vandas, and Chrysanthemums, together with several pretty plants of Asplenium cicutarium, which had a very graceful effect. Mr. G. Fountain was awarded the first prize for a group of Ferns, healthy, fresh, and vigorous specimens. A pretty group of Carnations and fine-foliage plants was also contributed by Mr. J. Odell, Uxbridge. A large group of miscellaneous stove foliage plants and Ferns, with Chrysanthemums, was shown by Mr. E. Smith; and from the Royal Horticultural Society's Gardens was sent an extensive collection of ornamental Gourds.

## CHRYSANTHEMUM AND FRUIT SHOWS, AUTUMN, 1884.

November 6th and 7th.—Southampton.

" 7th and 8th.—Havant.

" 10th and 11th.—Stoke Newington.

" 11th.—Putney; Royal Horticultural Society's Meeting, South Kensington.

" 11th and 12th.—Kingston, Croydon, and Lambeth.

" 12th and 13th.—Royal Aquarium, Westminster; Bath, Colchester, and Cranbrook.

" 13th.—Watton-on-Thames.

" 13th and 14th.—Richmond, Brixton, Teddington, and Tunbridge Wells.

November 14th.—Reading.

" 14th and 15th.—Crystal Palace, Huddersfield, Canterbury.

" 18th.—Winchester, Yeovil, and Lincoln.

" 18th and 19th.—Plymouth.

" 19th.—Wimbledon.

" 19th and 20th.—Northampton and Birmingham.

" 20th.—Taunton, Dublin, and Aylesbury.

" 20th and 21st.—Hull.

" 22nd.—Loughborough.

" 25th.—Manchester.

" 25th and 26th.—Liverpool, Basingstoke, and South Shields.

" 26th, 27th, and 28th.—York.



## KITCHEN GARDEN.

**Rhubarb.**—The leaves of this have now died, and as they are of no further use they should all be cleared away, then put a good layer of rich manure over the roots; but do not be very liberal with it on the crowns, as too great a thickness may cause decay. Weak roots will absorb much nourishment from a good top-dressing in winter, and all roots will be benefited by it. Roots for early forcing need not be treated in this way, and where very early produce is wanted a few of them may be lifted now and placed in a dark position, with a bottom heat of 80° and a top heat of 65° or 70°. The roots should be lifted entire and never broken; rich soil need not be put to them, as they will not grow much while being forced, and leaf soil or a mixture of that and sand or ordinary garden soil will answer the purpose as well as anything. Do not give too much water until growth begins, and then it must never be in excess.

**Globe Artichokes.**—The leaves of these died some time ago from the effect of the very dry weather, but of late they have been growing freely, and they have now fine stems with many young heads which will soon be of service; but we would rather have been without the large young growths, as, should it come a severe winter, they will suffer very much. They must be mulched early, putting a good quantity of littery manure and fresh leaves around the collars of the plants, letting it extend well over the surface of the soil where the roots are situated.

**Asparagus.**—The stems of this vegetable may now be cut away at the convenience of the cultivators. It would do no harm to allow them to remain on all winter, but we prefer cutting them close to the soil and then top-dress the roots, which is done in the same way as the Rhubarb. A mixture of sand and horse droppings makes a capital autumn dressing for Asparagus. We are just about to lift our first roots for forcing. The finest developed are used now. They are lifted without any breakage, and then placed in the bed of a Cucumber pit where the heat at top and bottom averages 60° and 70°, and with a layer of leaves under them and a quantity of light soil over them they begin to sprout in a few days after being put in, and we generally begin cutting in three weeks after planting. I do not know any vegetable which gives so much satisfaction on the dinner-table in November and December as Asparagus, and it would please all if a good batch of seedling roots were raised every spring, and a like number lifted for forcing annually from November until March.

**Spinach.**—The mild weather has caused this to grow very freely this autumn, and in many instances the leaves are full sized and becoming too old before they can be used. These will prevent the young ones, which may be much wanted later on, from developing, and we would advise that all old leaves be gathered and thrown away rather than allow them to hinder the forthcoming of the successional growths.

**Old Tomato Plants.**—Those in the open air are now over. They have been very successful. What splendid fresh, finely flavoured fruits those produced in the open air are! and how very much more general their cultivation might be if everybody could understand how well they thrive in favourable situations. Cut all green fruits off, hang the best up in a warm house to ripen, and clear away the old plants.

**Endive.**—Tie up a quantity of this that the centres may become tender and white. We have turned flower pots upside down over the plants, put a slate on the top of each, and long pieces of boards along each row, but we find nothing better than tying them up for blanching and preserving them. Never tie them up when they are wet, as this will cause decay immediately, but if tied when quite dry and made firm the wet will not readily penetrate to the centre. Lettuces which do not fold in themselves should be assisted in the same way. Where the good plan of lifting full-grown plants to put them in frames is practised it should be begun now, taking them up with good roots and putting them into frames which can be kept perfectly dry. We store many on the soil floor of one of our Peach houses, and find them do well there.

Lifting roots should be finished as soon as possible. Do not wait until frost comes, as it may come before preparation has been made, and much loss will be the consequence.

**Cauliflowers.**—These are heading fast, and coming in much quicker than they can be used; but they may not do this for long, as frost soon



checks them, and the present surplus should be carefully looked after. Cut all the heads now ready with 6 inches of stem attached. Cut the rough leaves off, sharpen the point of the stem, and then insert them as close as they will stand in boxes of moist sand or leaf soil, and place them in a cool dry shed, where they will remain fresh and sound for a month or more.

*Hotbeds.*—One or two good hotbeds in autumn and winter are always convenient for forcing roots, &c., and as the fallen leaves can now be collected in quantities, take advantage of them to secure some good beds. When leaves are collected into large loose heaps they soon begin to decay, and do not heat so well or last half so long as when made into firm beds when fresh and dry.

*Digging and Trenching.*—These operations should now be included amongst the regular weekly work. Never make fine surfaces at this season, but allow them to be as rough as possible, that the soil may be fully benefited by the fertilising influences of the weather. Look over Onions and Potatoes which have been stored for some time in sheds, and take out the bad ones. Look weekly to the straw or hay covering the surface of Mushroom beds, and always keep it fresh and dry.

#### FRUIT FORCING.

*PEACHES AND NECTARINES.—Early-forced House.*—The final thinning of the shoots in the earliest house should have immediate attention. Wash the trees in the first instance with warm soapy water, and afterwards dress the trees with an insecticide. Thoroughly cleanse the glass with water, the woodwork and trellis with soap and water, and whitewash the walls. Tie in the trees loosely, allowing the growth to swell without binding, letting the young shoots be laid in so as to secure an even spread of foliage, and sufficiently wide apart to admit of next year's growth being trained without crowding as the fruit approaches maturity; and to effect this the shoots should be a foot apart, and not closer on the main branches than 18 inches. A shoot of 12 to 18 inches in length will give a heavy per-centage of fruit for thinning, providing the wood be well ripened, and a Peach worthy of the name to every foot of trellis covered by the trees is quite as much as trees under early forcing can support year after year. If the lights have been removed they may be kept off if the weather be mild until the middle of the month, or if put on ventilation should be freely given until the house is closed. If the roof lights are fixed the doors and ventilators may be constantly open, and see that the inside borders of such houses do not lack moisture, but give a thorough soaking of water if necessary so as to moisten the soil thoroughly down to the drainage.

*Trees Intended to Ripen their Fruit in June.*—Trees that are to be started at the beginning of January will now be leafless, and should be pruned without delay, which, if the wood on which the fruits were borne this season was cut out when the fruits were gathered, will be light indeed. Beyond removing any weak growths and where they are too crowded the knife will not be needed, for however long the shoots, they will, if the trees are healthful, be ripened to their points, having stout short-jointed wood well set with flower buds. Trees extending may have the leading shoots cut back so as to originate others for furnishing the trees, being careful in all shortening the shoots of the current year to cut back to a wood bud, or, if to a triple bud, making sure that the centre is a wood bud, as trees in some cases form triple fruit buds at a joint. The house and trees should then be thoroughly cleansed and secured to the trellis. The roof lights having been removed some time ago should not be replaced until the middle of December, or the autumnal rains will thoroughly moisten the borders and keep the trees in a complete state of rest, which is a matter of some importance, as trees that ripen their fruit and growth early are easily excited, and excitement in November by putting on the lights, should the weather prove mild followed by a check, is very often the cause of the flower buds falling when they should be expanding.

*Houses Started in February.*—These trees will now be parting with their foliage, and should have all the air possible. Any lifting or root-pruning yet in arrears should be seen to and brought to a close as soon as possible. When the leaves are all down it will be an advantage to remove the roof lights and expose the trees for a month or six weeks, but if the roof lights are not moveable admit air freely in all but severe weather, and see that there is not any deficiency of moisture in the borders. If the trees are not lifted remove the surface soil down to the roots and supply fresh stiff loam, to which has been added some charred refuse and bone dust.

*Late Houses.*—The lifting and root-pruning of trees in these structures should be taken in hand at once and completed without further delay. During the operation the house must be kept rather close, the trees syringed, and the roots as little exposed as possible. When the roots have taken to the fresh material ventilate freely. If the trees do not require lifting it will be well to keep the house rather close by day, especially from sun heat, and to throw it open at night, which will soon ripen the growths, especially if the wood be thin so as to allow of light and air having free access to the wood. If the wood be at all crowded it should be well thinned. There must not be any deficiency of moisture at the roots, or they will not develop the buds perfectly, falling when they should be expanding in spring.

*CUCUMBERS.*—Plants which have been in bearing the past three or four months will be considerably renovated by receiving a good surface-dressing of a mixture of three parts light tufty loam, one part peat and charcoal, and then mulching with well-decomposed dung free from worms, the

manurial properties of which will be worked down by each successive watering. Examine the soil, and when water is needed give a thorough soaking at the same temperature as the house. Ventilate freely during mild weather, which must not be done to lower the temperature, but to prevent it becoming too high, admitting it progressively as the temperature increases, so as to prevent chilling draughts, which are highly injurious to the plants. Maintain a night temperature of 65°, but on cold nights 60° is sufficient, with 70° to 75° by day with fire heat, advancing 10° to 15° with sun heat. Close early in the afternoon. If canker appear rub quicklime well into the infested parts.

*Winter Fruiterers.*—Add more soil to the hillocks or ridges of late plantings as soon as the roots show through the sides, and complete the earthing of the first autumn plants, and then put on a mulching of well-decayed dung, which will not only act beneficially by maintaining the roots in an equable condition, but as a stimulant by its substance being washed down to the roots. Keep the bottom heat steady at 80°, and use as little fire heat as possible, turning off the heat on fine mornings about eight o'clock, by which time the solar heat will be acting on the house, and keep up the required temperature without having to resort to much ventilation to keep it from rising too high, as would be the case when the fires are kept going until the maximum day temperature is reached. The heat should be turned on again in the afternoon when the sun is going off the house, so that by the time the heat husbanded by early closing has fallen to 70° the heat radiated by the hot-water pipes will be sufficient to maintain the temperature through the night at 65°, to maintain which in severe weather there should be plenty of pipes, as nothing is so injurious to Cucumbers as heat radiated at a very high temperature.

#### PLANT HOUSES.

*Calanthes.*—The earliest of these plants will be pushing up their flower spikes rapidly by this time, and therefore require the most careful treatment. Feeding with weak stimulants need not be discontinued until the first flowers open on the spike, when further applications are useless. Considerably less water will be needed by these plants; sufficient only should be given, whether stimulants or otherwise, to prevent the soil becoming dry. It is a great mistake to water liberally up to a certain time and then discontinue applying it suddenly, which brings the pseudo-bulbs prematurely to a ripened condition. The work of maturation must be gradual, and this is accomplished by maintaining a drier atmosphere and supplying the plants with water judiciously until they can do without it altogether. Those in a more backward condition should still be liberally supplied with water and stimulants; the soil should not be allowed to become in any way dry before the flower spikes are visible near the base of their pseudo-bulbs.

*Phajus grandifolius.*—This useful old Orchid will have completed its growth if subjected to stove treatment as advised early in the season. The flower spikes will be making their appearance at the base of the growth, and if they are not wanted to come forward into flower naturally, but would prove more serviceable later, they may be retarded by placing them at once in a temperature that ranges about 55° at night, or even a few degrees lower. They should be removed gradually from the stove to the lower temperature advised, so that no check will be given them. In the temperature indicated they can be retarded for a very long time without the slightest injury. Where many of these plants are grown they should be divided into two or three batches and brought into flower successively. This is one of the most useful of Orchids for conservatory decoration, for when in flower the noble spikes of bloom stand well above dwarf flowering plants, and have a very commanding appearance. Considerably less water will be needed from this time, or the thick fleshy roots will soon perish, and the flower spikes will have to draw their support from the pseudo-bulbs, the growth the following season being weak in consequence. Careful feeding may be continued until the flower spikes are well advanced, but no more should be given than is really necessary to keep the soil in an intermediate state of moisture. While these plants are flowering in a cool house no water should be given them, for they are better and safer in a dry state at their roots.

*Cypripediums.*—Such varieties as *C. insigne* and *C. venustum* that have completed their growth and have been in a cool structure for some weeks past may be introduced into a stove and forced into bloom. The former will come into flower first and the latter follows it. When the blooms of the former are forced out in heat they are not only larger and brighter in colour, but they stand higher above the foliage than they will do when allowed to develop under cool treatment. *C. villosum*, that has been grown in heat, and is required for the same purpose, may need retarding in a cool house. Our plants of this variety are showing their flower spathes much earlier than usual this year, and to be of service after the varieties named above are over they will be kept in a cool house for some time. All *Cypripediums* will bear conservatory treatment for a few weeks while in bloom, providing cold water is not applied to them and the plants are protected from cold currents of air. At this season *C. Spicerianum*, which is likely to supersede the useful old *C. insigne*, is a beautiful plant when used for this purpose. The whole of these plants require a good supply of water at their roots, even during the resting season, for, unlike many Orchids, they have no pseudo-bulbs to rely upon for support during the period of rest. These plants are best rested by lowering the temperature considerably for some weeks or months during the season of inactivity.

*Dendrobiums.*—These plants must be examined from time to time, and as growth becomes completed and ripened they must be removed to cooler and drier quarters. While in this position no more water should be given them than is necessary to prevent the pseudo-bulbs shrivelling. Some of



the earliest rested plants may be introduced into heat and moisture to bring them into flower. These plants, for instance—such as *D. nobile*, *D. Wardianum*, *D. heterocarpum*, and others—are invaluable for conservatory decoration when in flower, provided they are kept free from damp. In this position the flowers last longer than in a heated moist structure, and have a beautiful effect unequalled by any other flowers. While these plants are employed in a cool structure no more water should be given than just sufficient to keep their pseudo-bulbs plump.

*Odontoglossums*.—The shading employed for these and other cool Orchids may be dispensed with for at least the next three months. Light and a good circulation of air are necessary for the production of stout sturdy flower spikes. The spikes of *Odontoglossum Alexandræ* will be showing freely, and must be protected from snails either by suspending the plants from the roof, or by placing a little cotton wool around them until they become hard, firm, and capable of resisting the attacks of these enemies. The useful and beautiful *Masdevallia towarensis* will be throwing up its flower spikes in abundance, and is invaluable, flowering as it does at this season of the year. It should be grown in good numbers where buttonholes and bouquets are in demand. The whole of the plants in this department should be supplied with water, *Lycastes* and *Maxillariæ* excepted, for they require to be comparatively dry after growth is completed. A night temperature of 50° should be maintained in this structure, and by day 10° higher from sun heat may be allowed without injury.

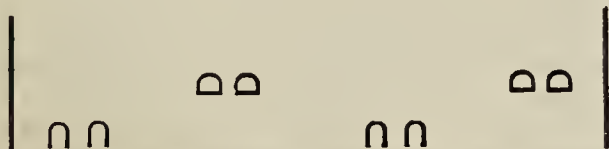
## THE BEE-KEEPER.

### BEE HOUSES.

LIKE your correspondent, "A Dumfriesshire Bee-keeper," I have observed articles by the despisers of bee houses; but I cannot, like him, endorse the opinion that they were experienced bee-keepers, because no experienced bee-keeper would do so, nor have a bee house unless it was one of great advantage in many respects, which a proper bee house is, therefore would not condemn it. Bee houses have been in use for a very long time of all shapes, from the most primitive up to the most costly and ornate style. There are two styles of bee houses—viz., those that admit the proprietor to manipulate inside, and those that are merely outside protectors. The latter are the most expensive; still are much enjoyed by their owners, who take not only great delight in their construction and position, but in the bees as well, because they know full well that the nearer the thoroughfare the milder the bees. One of the oldest bee houses I know (octagon in shape) is within a few miles of where I reside, and was built by the owner nearly a century since, who long enjoyed it as a quiet retreat for study, and as a security against bee thieves, more common in those days than now. The bees facing all the points of the compass were a careful study for their owner to discover which was the best aspect, his opinion being that of a sheltered north aspect being the most favourable. The above is a stone building, and has three or four rows of pales for entrances for bees in the height. I have observed that bee houses hold from three to four hives, which cost the owner £30; but it is not such as these I recommend, but one which is commodious, useful, and cheap, and which few bee-keepers may lack.

There are some important points in connection with bee houses which require careful consideration. The door should open inwards and have a verandah, which in an oblong house may be a continuation of the roof, so that the door is not affected by the weather, but opening easily at all times. This verandah will be found useful in many respects. The next thing is that the centre part of the floor should be detached from the shelf which runs round the house for the support of the hives, and must all be rat and mice-proof.

Another very important thing is the entrance way to the hives. In form I have found a half circle, with a circle facing, to lead the drip off the landing-board, and this circle need not be of greater diameter than 5 inches by 2½ high. As we wish to economise all the space we can, and as we have found any aspect to suit bees provided they are not subjected to high winds, the cutting these holes must be carefully performed. In a bee house 12 feet long by 6 to 7 feet wide there is ample room to hold from eighteen to twenty hives of the Stewarton type, or of any other sort which diameters are not more. The entrances must be cut either in twos or threes. With a long house the latter is to be preferred, and such as the hives may either touch each other or nearly so, but never equi-distant. If a house of 12 feet high is pierced for twos they should be so—



But if in threes thus—



By this arrangement it will be observed there is no one hive right above another, and with the entrances either varied in colour or device the bees will not mistake their proper entrance nor be liable to fall down upon its neighbours. The first row should stand on a level with the top of the base, which must not be attached to the house, but come only to the lower edge of the walls and be fastened at each corner. This plan, to prevent decaying, will be obvious to the merest tyro. The other row should be about 9 inches higher. Both should have a ladder to assist weary bees to creep up, and with a piece of perforated zinc placed horizontally underneath the alighting boards will prevent mice ascending to the hives. Bees seem to have the sense of height, so that they do not mistake the lower entrances for the higher, nor *vice versa*. In order to allow freedom of manipulation the higher hives must not rest upon a shelf more than they require, so that tiering is never interrupted.

It will be observed that the gable end will have room for two or more hives. Bees when placed in such a house require less covering than when placed outside, and if there be no communication from one entrance to another, and none of the entrances where there are no bees left open, draughts will be avoided, and the bees will not only be comfortable but more forward in spring. Such a bee house is also invaluable for holding small seeds, and is a capital place for drying herbs and holding other requisites for the apiary, &c. It must have the indispensable window pivoted in the centre so as to admit air at times, as well as to allow the bees to escape that find their way to the interior during manipulation.

A tradesman by the foregoing description would know how to make such a house; but I wish to initiate the poorer class who can neither afford to have an expensive bee house nor to employ a tradesman, but who may enjoy the luxury of having a cheap yet useful bee house, and of such a form that there could be as much decoration as desired.

The following explanation may suit any form of a house, but I think one 12 feet by 7, and about 6 feet high, a very suitable one. First take something solid, such as bricks or stones, for the foundation at each corner, placing them level and to the required dimensions, after which take scantlings 3 feet by 2 feet of the proper lengths, and either half cheek on the flat or simply place one on the top of the other; bore a hole right through the one into the other, in which a brass screw or pin may be put, but which will be easily withdrawn if the house requires to be taken down, as it is a portable not a fixed house. When the three frames are thus coupled take a few racks and one or two persons to assist to fasten them temporarily. Have sufficient boards cut to the proper height, ½-inch lining is heavy enough. Now commence to nail these boards on to the framework with 1½-inch nails. Mark out where the door is to be, cut one or two of the boards at both ends, and relieve the opening side of it so as to enable the maker to have no difficulty in cutting the door out. The hinges will be better put on before cutting, as well as the extra bars to hold together. It will be observed that the bottom runner must not be cut, but kept entire, so as to hold the house better together. After the gable ends have been fair cut four purlins, two for each side, of the same size as the other scantlings, but longer if a verandah is to be over the doorway, these to be let into the gable; then the roof is better to project a good way, so as to throw any drip over the entrances, but if an efficient conductor is used there will be very little drip. Over the wood nailed on to purlins may be fastened corrugated iron, which makes an efficient and lasting roof. Of course a ridge is necessary, also that there be no openings to admit bees from outside.

The advantage of such a bee house need not be specially pointed out. Only imagine the convenience and comfort manipulating and feeding hives in such a house is from attending to the same number outside, while the bee-keeper may take a rest after a hard day's labour in such a house. At all events it affords a quiet retreat for reading and study over and above the other advantages affords. The price of such a house need not be more than £3 first outlay.—A LANARKSHIRE BEE-KEEPER.

### EXPERIENCES IN BEE-KEEPING.

SEEING the retrospect in the Journal of October 23rd by Mr. T. Marriott, I thought if I were not encroaching too much on your valuable space I would also send my experience in bee-keeping. Although I have been accustomed to bees all my life, it was not till the summer of 1883 that I gained any practical knowledge of their management. After reading several books on bees and articles in the *Journal of Horticulture*



I obtained two hives of condemned bees, of which one was a cast and the other a virgin swarm. I joined both hives together and put them into straw skep, where I fed them up to 25 lbs. weight. During the winter of 1883-84 I made a Broughton-Carr hive. The first week in March I began stimulative feeding. The last week in March I applied to you for information on transferring, which was given me on page 273 of vol. viii.; but a mistake was made in supposing that I had had fourteen years' experience, instead of which I was only fourteen years of age. My hive in the spring was very backward; it had plenty of food and a good many bees, but when I transferred them to the bar-frame hive at the end of April I found only four or five patches of brood. I put a sectional super on with one row of six sections the second week in May, and about a fortnight later another row. Two days after they threw off a swarm which went into the garden wall. The next morning I made a large hole in the wall, and intended to try to get them out. Accordingly I went with smoker, veil, ladder, &c., but to my surprise found them gone. The following is the

BALANCE SHEET.					
	£	s.	d.		£ s. d.
Sugar ... ..	0	7	3	Honey sold ... ..	0 6 6
Foundations, &c. ...	0	2	0		
	0	9	3		

The bees and bar-hive did not cost me anything.

I only had 10 lbs. of honey—viz., six 1 lb. sections, and 4 lbs. from the body of the hive, and only sold 5 lbs. The hive was very weak all through the summer, never covering more than eleven frames; and as one of the hives was a virgin swarm I must have had an old queen. As my own hive has done so badly it is but fair for me to state that some others under my charge have not. An old stock had 55 lbs. of honey, an artificial swarm 45 lbs., and a natural swarm 25 lbs., which, considering the locality and size of the hive (14 by 8½ inches), is very good. This autumn I have saved twelve hives from a cruel death, and hope next autumn to save many more, and so help to extend the profitable as well as humane system of modern bee-keeping.—H. BROWN, *West Essex*.

#### TRADE CATALOGUE RECEIVED.

Charles Turner, Slough.—*List of Chrysanthemums.*



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Books (H. R. B.).**—We know of no book that gives all the information you require, but Professor Church's work "Food" (published by Messrs. Chapman & Hall) may possibly be of service to you. We do not remember the price, but the work is quite inexpensive.

**"Fruit Manual" (J. E.).**—The "Fruit Manual" does not specify the proper time for gathering the different kinds of fruit; but in the case of some kinds requiring special treatment such information is afforded, and is given in the case of Williams' Bon Chrétien and other Pears. Experience, however, is necessary for determining the exact time for gathering, as fruits differ considerably according to soil and climate.

**Culture of Trichinium Manglesi (J. R.).**—This beautiful little plant is not very easily grown, but a few skilled cultivators have been very successful with it by practising the following system. The pots should be small thumbs, thoroughly drained, and the compost consist of peat and sand, while on the surface after the plant is potted should be placed a layer of silver sand to be kept constantly moist. The temperature of a greenhouse is the most suitable, choosing a position not too much exposed to the sun, and airy but free from draughts. Water can be freely supplied if the pots are well drained. Several of these small pots may be plunged in a pan if a good mass is required.

**Seaweed and Spent Hops (G. E. Y.).**—The seaweed will be excellent for digging into the soil for the production of all kinds of vegetable crops for market. The spent hops will also be useful, but perhaps especially so for spreading on the surface between the rows of different vegetables in summer, to prevent the escape of moisture, and thus reduce considerably the necessity for watering. We found such covering of great value during the hot and dry weather of the present year.

**Chrysanthemums (A Young Beginner).**—We have received your letter, and the subject shall have our early attention.

**Beds for Ranunculi and Anemones (R. C.).**—Choose an open situation, but sheltered from winds and where the soil is rich, deep, and moist. They should be in the full sun, and not have any shade whatever, though an artificial shading at the time of flowering will enhance their beauty and prolong the flowering. Keep the roots cool by rich surface-mulching, and watering freely in dry weather after they begin to button or show for flowering. Beds of these are not nearly so frequently met with as their merits deserve.

**Furnishing Vases (D. E.).**—Furnishing vases with cut branches of evergreens is solely a question of taste and material. All that can be usefully said on the subject is that the soil must be firm and moist, the sprays tastefully arranged and removed as they lose their fresh appearance, others being inserted. Bulbs may be planted in the same vases, also Wallflowers and such dwarf spring-flowering plants as may be taken up from the borders. In mild showery weather evergreen sprays keep fresh for a long time; in dry weather they need more frequent renewal.

**Dressing Fruit Trees in Pots (J. E.).**—The trees should be dressed in winter with an insecticide, than which there are now so many and all efficacious for the purpose, some of the best being the good old Gishurst compound, nicotine soap, Fir tree oil, &c. The trees should be dressed so soon as the leaves have fallen, applying with a brush to every part, being careful not to dislocate the buds. The trees are the better plunged outdoors in an open situation for a few weeks when the leaves give indications of falling, and not taking them indoors until the turn of the year. It is best to fumigate the house before the blossoms expand if there is any trace of aphid, and repeat if necessary so as to eradicate the pests before the flowers open, and so avoid the necessity of having to resort to an insecticide whilst the trees are in blossom.

**Eucharis amazonica for Christmas (F. H.).**—Continue the plants in heat until they have completed growth, as they will by this time, having been plunged in bottom heat early in September, gradually withdrawing from the bottom, and keeping them rather cool and dry, but not to cause serious flagging, and in plenty of light until the early part of December, when they should be returned to the bottom heat (80° to 90°), and the top heat kept at 65° to 75° by artificial means by night and day respectively, affording liquid manure at the roots. The plants will flower in about three weeks, provided, of course, buds were formed or exist in embryo in the bulbs. If the plants are now growing freely and have not completed the growth, do not remove from the bottom heat, but keep them well supplied with liquid manure until the third week of this month, and then withhold water for a fortnight, and commence watering again about twenty-one days before the plants are wanted in flower. It would have been much better had the plants been given more time to make and complete growth before being rested and again pushed into growth.

**Growing Sweet Peas (Idem).**—The Sweet Peas now up strongly in boxes should be potted off, three plants in 4-inch to be transferred to 7-inch for flowering, or five in 6-inch to be transferred to 9-inch for blooming, shifting them when they have become established in the smaller size, and before the roots become very much matted around the sides of the pots. When in the flowering pots keep well supplied with liquid manure, close to the glass and freely ventilated so as to insure a sturdy habit.

**Raspberries and Strawberries for Succession (C. B.).**—Summer-bearing Raspberries ripen pretty much at the same time, and a succession can only be had by planting some canes in a sunny, and others in a more shaded and cooler position. We know of none to excel Carters' Prolific, dwarf and sturdy; Prince of Wales, tall and productive; and if you wish a yellow variety the Yellow Antwerp. The best of autumn bearers, all the canes being cut to the ground annually, are Belle de Fontenay and October Red, the young growths of which should be well thinned out in the spring. The best method of prolonging the Strawberry season as long as possible is to plant the early sorts in warm and the later in cool positions. One of the earliest Strawberries is the Black Prince, but the fruit is small; and good for succession are Keen's Seedling, Vicomtesse Hericart de Thury, President, Sir Joseph Paxton, Dr. Hogg, Helena Gloede, and Loxford Hall Seedling. Some at least of the three varieties last named to be planted in cool and partially shaded positions, such as the north sides of walls that stand east and west, or other suitable places.

**Vines Infested with Mealy Bug (Trike).**—Cut all the Grapes with a piece of wood, and place in bottles of clear rain water with a few bits of charcoal in each, and keep in a cool dry place, placing the bottles in a slanting position so that the bunches hang clear of the bottles. They will keep quite as well in this way as on the Vines, and the latter will be clear for operating against the mealy bug. Get some cans full of rain water, those holding three gallons are best, and to every three-gallon potful add a wine-glassful of petroleum, and with this syringe the Vines thoroughly, wetting every part of the foliage, the rods, and woodwork of the house. Repeat in the course of four days, and again so soon as the leaves have fallen, which, as they drop, must be cleared away and burned. It is necessary that the petroleum be kept thoroughly mixed with the water whilst it is being applied, which may be done by one person stirring sharply with a broom handle, whilst another person applies it to the Vines; or, if only one person performs the work, first fill the syringe and squirt a few times sharply into the watering-pot, and afterwards apply alternate squirts to the Vines and into the watering-pot. When the leaves are all off, prune, and, removing the loose bark, wash the Vines with soapy water at 120° to 140°, employing 8 ozs. of soft soap to a gallon of water, and paint the whole of the woodwork of the house with petroleum, moving the plants out of the way, so that the petroleum undiluted does not fall upon them, and limewash the walls. Then dress the Vines with some approved insecticide. Before the Vines are started syringe them and the house with the petroleum and water, and keep a sharp look-out for the pest in the early stages of growth and destroy with the hand, continuing the look-out right through the growing season.

**Grapes Rusting (J. R.).**—The Grapes are badly rusted, due no doubt to a chill consequent on sudden and extreme evaporation. This usually



occurs in bright weather, when the nights are cold and the external air cutting, although the sun be bright and powerful. It also happens when a house has been closed too long in the morning and then the ventilators thrown open widely at once. In such weather the fires have to be kept going sharply, and the moisture increased to maintain a genial condition of the atmosphere, and in the morning the fires are pushed to raise the heat to the required day temperature with damping available surfaces. The sun breaks out powerfully, air is given, and it may be side air to prevent the temperature rising too high, and the cold cutting air so dries the atmosphere and sucks the moisture from the tender skin of the Grapes as to harden it, and it rusts from the injury inflicted; but there may have been other aggravating circumstances, as that of syringing the pipes whilst hot with water, the moisture rising from the pipes in steam and settling on the berries, which, being suddenly dried up or evaporated by an outburst of powerful sun or the admission of a cold cutting current of air, caused the berries and tender growths to rust. The only remedy is to prevent the temperature rising high before turning off the heat when the day is likely to be fine, and to allow the heat to rise high when the days are bright and cold, rather than admit cold air in quantity, and produce a current to keep down the heat. Sulphured pipes are also a great cause of rust, and should be washed clean if used before forcing operations are commenced. A deficiency of lime in the soil will sometimes cause rust. Afford a dressing of quicklime to the border now at the rate of a bushel per rod (30½ square yards) and point in with a fork, choosing dry weather for the operation. The lime must be fresh slaked.

**Amaryllises and Ferns (J. A.).**—You have treated both wrongly. The former do not require potting in September, nor the latter to be grown on a shelf near the glass. As the Amaryllises are dry now you had better keep them so through the winter, but not so dry as to cause the bulbs to shrink. About March, or when convenient, plunge the pots in gentle bottom heat in your Cucumber house, and when growth has started allow the plants all the light possible, and supply water carefully yet sufficiently to encourage free growth. After flowering the plants may be placed on a shelf where they can have the full sun, and must be copiously watered till the middle of August, then kept drier to ripen the growth. Active root-action must be promoted, and a compost of two parts turfy loam, one part leaf soil, with crushed charcoal and sand added to render it porous. The soil you use for the Ferns is right, also the temperature, but the plants must have a shaded place and moist atmosphere in the summer, or they will not thrive. We suspect your plants have not had sufficient water during the summer. Early spring is the time for repotting.

**Names of Fruits (D. C.).**—Apples—No. 3 Mère de Ménage; 4, Bedfordshire Foundling. Pears—No. 1 a worthless thing, certainly not Marie Louise d'Uccle; 2, Vicar of Winkfield; 3, another worthless thing that never deserved a name; graft it with Doyenné du Comice. The other three Apples we do not know. (Rev. J. A. Williams).—Kentish Fillbasket. (E. Sheppard, Roden Hall).—1, Gloria Mundi; 12 and 21, Blenheim Pippin; 5, Cellini; 18, Scarlet Nonpareil; 8, Winter Colman; 28, Dumelow's Seedling. We do not name more than six specimens. (W. N.).—1, Golden Winter Pearmain or King of the Pippins; 2, Cox's Orange Pippin, very fine; 3, not known. (G. S.).—1, Hollandbury; 2, Golden Russet; 3, Court of Wick; 4, Pigeon; 5, Beurré Diel; 6, Bergamotte Esperen. (L. B.).—1, Wormsley Pippin; 2, Gravenstein; 3, Syke House Russet; 4, Duke of Gloucester; 5 and 6, not known; 7, Urbaniste. (T. Stephens).—It is Bascombe (not Basscoms) Mystery. (Jno. Jeff).—1, Minchull Crab; 2, Annie Elizabeth; 3, Bedfordshire Foundling. (J. D.).—1, Tower of Glamis; 2, Orange Goff; 5, Lewis' Incomparable; 6, Winter Colman; 9, Peasgood's Nonesuch; 10, Cornish Gilliflower.

**Names of Plants (J. O.).**—1, *Cyperus alternifolius*; 2, *Juniperus excelsa*; 3, *Spiræa crenata flore-pleno*. (J. M.).—1, *Physalis Alkekengi*, the Winter Cherry; 2, we cannot determine without flowers. (H. M., Paris).—The plant known as London Pride is *Saxifraga umbrosa*. (W. P.).—*Oncidium concolor*.

**Erratum.**—In the notes on Dumfries House, referring to the borders, the word "renewed" was misprinted "removed."

**\*\* Letters received on Wednesday cannot be answered till next week. We have received both Grapes and plants with no letters pertaining to them.**

#### COVENT GARDEN MARKET.—NOVEMBER 5TH.

TRADE quiet; all classes of goods in full supply.

##### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. .. ½ sieve	2 6	to 3 6	Oranges .. .. 100	8 0	to 12 0
Chestnuts .. .. bushel	0 0	0 0	Peaches .. .. per doz.	3 0	8 0
Cobs, Kent .. .. per 100 lbs.	65 0	0 0	Pears, kitchen .. dozen	0 0	0 0
Currents, Red .. ½ sieve	0 0	0 0	„ dessert .. dozen	1 0	3 0
„ Black .. ½ sieve	0 0	0 0	Pine Apples English .. lb.	4 0	0 0
Figs .. .. dozen	0 6	1 0	Plums .. .. ½ sieve	0 0	0 0
Grapes .. .. lb.	0 6	4 0	Strawberries .. .. lb.	0 0	0 0
Lemons .. .. case	15 0	21 0	St. Michael Pines .. each	7 0	10 0

##### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes .. .. dozen	2 0	to 4 0	Lettuce .. .. dozen	1 0	to 1 6
Beans, Kidney .. .. lb.	0 3	0 0	Mushrooms .. .. punnet	0 0	1 6
Beet, Red .. .. dozen	1 0	2 0	Mustard and Cress punnet	0 2	0 0
Broccoli .. .. bundle	0 9	1 0	Onions .. .. bunch	0 3	0 4
Brussels Sprouts .. ½ sieve	2 6	3 0	Parsley .. .. dozen bunches	2 0	3 0
Cabbage .. .. dozen	0 0	1 0	Parsnips .. .. dozen	1 0	2 0
Capsicums .. .. 100	1 6	2 0	Potatoes .. .. cwt.	4 0	5 0
Carrots .. .. bunch	0 3	0 4	„ Kidney .. .. cwt.	4 0	5 0
Cauliflowers .. .. dozen	2 0	3 0	Rhubarb .. .. bundle	0 4	0 0
Celery .. .. bundle	1 6	2 0	Salsafy .. .. bundle	1 0	0 6
Coleworts .. .. doz. bunches	2 0	4 0	Scorzonera .. .. bundle	1 6	0 0
Cucumbers .. .. each	0 2	0 4	Shallots .. .. lb.	0 3	0 0
Endive .. .. dozen	1 0	2 0	Spinach .. .. bushel	2 0	4 0
Herbs .. .. bunch	0 2	0 0	Tomatoes .. .. lb.	0 6	0 0
Leeks .. .. bunch	0 3	0 4	Turnips .. .. bunch	0 4	0 6



#### ANIMALS OF THE FARM.

##### SEASONABLE HINTS.

AUTUMN is upon us once more; a fine autumn truly, remarkable for fair bright weather and an abundant growth of grass upon the pastures, and which, owing to the dry and comparatively warm weather, has proved more nourishing than is usual at this season of the year. Frosty nights and the fast-falling leaves, however, unmistakably announce the swift approach of winter, and our arrangements for the comfort and health of every animal upon the farm should now be complete and efficient. So much harm is frequently done to animals by a want of timely care that some consideration now as to what is really necessary cannot fail to be useful. As long ago as early in September the older horses were put into the stable at night, and their apparent freedom from colds and rheumatism now shows the value of such care. We have had old horses that have been exposed to heavy rain as the nights grow cold in early autumn rendered useless for weeks by rheumatism, the limbs becoming stiff and swollen, involving pain to the animals, loss to the farm, and not unfrequently a heavy item in the veterinary account. In a cold wet October colts are taken early off the larger pastures and confined either to the paddocks or yards according to the condition of the weather. Due care is taken to separate animals of vicious temper, a single kick often leading to a heavy deterioration in the value of a colt. It is true economy to provide large yet snug lodges and yards for them, and though highly finished and expensive buildings are unnecessary, yet every part should be substantial and free from all projecting posts or swinging doors against which an animal could sustain injury.

Young cattle have had the yards and lodges littered and opened for them to enter at will since the middle of September, and they have also been kept off damp low-lying pastures to avoid risk of husk or hoose. Bronchial filaria (*Strongilus micrurus*), the cause of this complaint, are sometimes found in hundreds rolled together in the lesser bronchi, causing a loud husky cough. The larva are taken up from the coarse herbage of low damp pastures, and are developed into thread-like worms 1 to 2½ inches in length. Diarrhoea, loss of appetite, poverty of condition, all follow in bad cases, and we have recently known cases in which the animals have died through mismanagement. The remedy is to cause the affected animals to inhale sulphur fumes by putting them in a tolerably close lodge and burning sulphur upon a heated shovel. Two or three inhalations are sufficient. Diarrhoea is an indication that worms are in the bowels, and then turpentine given in milk is a sure remedy.

Calves well repay a little extra care and judicious treatment now and during winter. Cleanliness, warmth, and careful feeding are all-important here. There must be no damp beds, no foul air, no cold draughts. The food should be abundant and sufficiently nourishing, but due care must be taken not to force young animals too fast. We last spring were asked to inspect a very fine lot of some thirty calves that had been wintered in a barn, and of which one or two were dying daily. Overfeeding and a want of cleanliness, especially in the drinking water, had brought on what is known as black-leg or quarter evil, and nothing could save those animals affected by it. For the remainder setons were inserted in the dewlap. An altered lower diet with pure water, a change to a clean, dry, and warm but airy building proved effectual in arresting the progress of a disease for which when an animal is once seized with it there is no remedy. A simple diet of the best meadow hay, with some bran, crushed oats, and a little linseed is really all that calves require to keep them in a thriving condition during winter and to prepare them to go out upon the pastures next summer in full health and vigour.

Animals purchased now for the yards should be kept apart from others till it is certain that they are in good health. It is from the late fairs of the year that foot-and-mouth disease is so frequently brought by over-driven cattle. Very little actual loss results from it, but the beasts are woefully reduced in strength and condition, and are several months in fully recovering from its effects. A warm clean lodge, careful feeding with soft, easily masticated, digestible food, washing the sore feet and mouth



several times daily with dilute salicylic acid, are effectual remedial measures.

As the cows are withdrawn altogether from the pastures they have a large, snug, well-littered, well-drained yard with deep open lodges on two sides of it, the cow house on another, and snug close lodges along the other side for calves and delicate cows, under which designation we include all Channel Island cows, and which are always shut in close lodges at night. There are big heaps of litter in two corners of the yards, and the cows are very fond laying around such heaps on a mild winter's day. There is a large hay crib in the middle of the yard, and other long cribs in the open lodges with lumps of rock salt in them. Cows are quarrelsome, and it is well to have plenty of feeding space so that the weaker animals may not go short. For drinking there is an open cistern of brickwork lined with Portland cement, through which runs a constant flow of fresh spring water—a safeguard against negligence, insuring a supply of clean fresh water sufficiently agitated to prevent its being frozen over.

(To be continued.)

#### WORK ON THE HOME FARM.

*Horse and Hand Labour.*—The extraordinary abundance of food still remaining upon the pastures has brought the carting of manure to a standstill for a short time. We regret this, because this work is quite certain to prove more laborious for the horses as the land becomes soft with the rain, which we are bound to expect now. Meanwhile ploughing of some Wheat stubbles not cleaned after harvest, and, consequently, having now an abundant crop of weeds, which with the stubble will decay during winter, and the land with a full dressing of manure next spring will be in good order for a crop of Potatoes. Enough Docks and Thistles appeared among the other weeds to render it necessary for a couple of men to go before the ploughs and dig them up. A little timely attention to such matters now makes a clean sweep of such pests, and is a saving of labour in the future. Root up the Thistles and Docks, say we, and so get rid of them and the vexatious "spudding" which must otherwise be done throughout the season of growth. An abundant crop of acorns has given work to several women and boys, who gladly earn the shilling per bushel given for picking them up under the trees round outlying fields, upon carriage drives, and other places where the acorns are not required for game or sheep. Excellent food as acorns are for sheep, we should be disposed to have them cleaned off the land as speedily as possible if it were not so, for they offer apparently an irresistible attraction to tramps and loafers generally, leading to a vexatious spoliation of any convenient hedgerow that affords a supply of stakes for pelting the trees with. After a recent windy Sunday we found several rods of hedges destroyed in this manner, despite the careful outlook kept to prevent, or rather check such depredations. Heavy poor rates and much distress are certainly inevitable in the coming winter. Hardly a day passes now but we have several applications for assistance by labourers out of work. Farmers cannot pay their way, and workmen have to go, or if retained it is at a lower rate of pay than has been known for many years.

*Poultry.*—Our Michaelmas geese were plump birds of an average weight of 10 lbs.; they were never shut up, but were fed regularly with oatmeal and maize near the poultry house; and as there is a pond and plenty of grass close by, they were never tempted to wander away. We are now killing geese weighing about 11 lbs., and although the Christmas geese will probably exceed that weight, there will be no change in the treatment, our aim being to produce poultry of a fair size and condition at a reasonable rate of cost. A selection must now be made of turkeys for killing at Christmas and for breeding next season. The breeding birds must be examined so as to insure the saving of well-formed bodies free from any deformity, especially crooked breastbones, a common fault in turkeys. The selected birds are marked by putting a ring upon one leg. An unusually heavy demand for chickens has caused our stock of fat birds to run short, and we have had to resort to shutting up a certain number in fattening coops. Small legs and large deep breasts are required, for which reason preference is given to pullets, which are kept about three weeks in the coops upon a diet consisting of oatmeal, pollard, boiled potatoes, and suet chopped fine, mixed together with milk. Only as much food is given at once as can be cleared up, or if any is left it is removed from the trough and not left to sour. The third broods of Pigeons are well feathered, and will soon fly. We have had several young fantails destroyed by rats; the old birds will lay the eggs upon the ground despite all we can do, and as rats ramble from farm to farm we are never quite safe from loss.

*SPRATTS PATENT.*—We understand that Spratts Patent have received a prize medal at the International Health Exhibition, 1884, being the highest and only award for their class of goods.

#### BATH AND WEST OF ENGLAND SOCIETY AND SOUTHERN COUNTIES ASSOCIATION.

A COUNCIL meeting was held at Bristol on Tuesday, October 28th, Sir J. T. B. Duckworth, Bart., in the chair.

*THE BRIGHTON PRIZE SHEET.*—Colonel Luttrell, as Chairman of the Stock Prize Sheet Committee, brought up the prize list proposed for the Brighton meeting next year. He explained the additions and alterations recommended by the Committee, which in most cases were made with a

special regard to the district into which the Society was going. Among the additions proposed were prizes of £15 and £7 for harness horses; of £15 in the Jersey classes for young bulls, and a similar amount in the Guernsey classes; and of £40 for new classes of pigs of the middle white breed. These additions were approved by the Council, and Colonel Luttrell then submitted a list of prizes amounting to £212 proposed to be offered by the Brighton Local Committee. These included additions to the classes for agricultural horses, Sussex cattle, and Southdown sheep, and special prizes for bulls of any pure breed, with two of their progeny, for dairy cattle, and for black Sussex pigs. Colonel Luttrell also reported the offer of prizes amounting to £67 for harness horses from the trustees of the Brighton race-stand; of a champion prize of £15 15s. in the same classes from Mr. H. J. Infield, of Brighton; of a silver cup from the Marquis of Bristol for the best entry in the bull and progeny class; of third prizes in all the Sussex cattle classes, by the Sussex Herd Book Society; and of third prizes in all the Southdown sheep classes, by private subscription. The above prizes having been accepted by the Council with thanks to the donors, Colonel Luttrell pointed out that the regulations and conditions had been carefully revised and were now for the first time consolidated, which permitted of one general classification being adopted, and much facilitated reference to them. A discussion took place in reference to some of the regulations and conditions, which were then passed.

*POULTRY PRIZES.*—Mr. Bush, on behalf of the Poultry Stewards, presented the list of prizes proposed to be offered for poultry at Brighton, and asked for an additional grant from the Council for prizes for table poultry, which had not been offered on any previous occasion. This was agreed to, and the list was approved. The regulations were then discussed and passed.

*THE IMPLEMENT REGULATIONS.*—Mr. Knollys, as Chairman of the Implement Regulation Committee, brought up the regulations proposed for the Brighton Meeting, and stated that in deference to the wishes of some of the leading exhibitors, as expressed in a requisition to the Committee, Regulation 16 had been altered, so as to give additional facilities to exhibitors under shedding for machinery in motion for exhibiting their names in front of such shedding. The regulations were approved and passed. Mr. Knolly said that he was glad to be able to report that the amount received for fees in the implement department in connection with the last show was much larger than usual, there having been a considerable increase upon previous years in the number of implement firms represented.

*THE SPECIAL DAIRY PRIZES.*—Mr. Neville, on behalf of the Committee specially appointed to consider these prizes, submitted a list of prizes, amounting to £60, which the Committee recommended the Society should offer at the Brighton Meeting for cheese and butter. He hoped that, although the Committee had exceeded the amount voted by the Council by £10, the list would be agreed to in view of the increasing importance of dairy husbandry and the desirability of the Society encouraging such products. This view was supported by other members, and the list was unanimously approved.

*CONTRACTS AND ARTS COMMITTEES.*—Reports were also presented by Colonel Luttrell on behalf of the former, and by Mr. Wyatt-Edgell on behalf of the latter Committee, which chiefly referred to matters of detail in the arrangements. Mr. Edgell concluded by moving the appointment of six gentlemen as local members of the Arts Committee for the Brighton Meeting, which was agreed to.

*THE DATE OF THE BRIGHTON SHOW.*—The 1885 Show was fixed to commence on Monday, June 8th, and to terminate on the following Friday, this being the week between Epsom and Ascot Races.

*COUNCIL MEETINGS IN LONDON.*—Mr. Cramer-Roberts moved a resolution of which he had given notice, "That when the annual meeting is held in the southern division some of the preceding Councils be held in London." The mover pointed out that the journey to Bristol was a long one for members of Council living in the southern division to take, and when the annual meeting was held in that division they were naturally desirous to attend the previous Council meetings, and he hoped that the Council by adopting this resolution would facilitate their doing so. Mr. Moore-Stevens said that, as one from the west, he thought the request a fair one, which it would be desirable to accede to, and therefore he begged to second the motion. After some discussion it was unanimously agreed that the February and April Councils in 1885 should be held in London, this meeting the views of the mover of the original resolution.

#### OUR LETTER BOX.

*Prickly Comfrey (A. E.).*—The information you require will be given next week.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1884. Oct.—Nov.	Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.				
		Dry.	Wet.			Max.	Min.	In sun.	On grass.			
Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.			
Sunday .....	26	29.557	54.3	54.1	W.S.W.	48.8	55.8	35.3	87.8	38.7	0.027	
Monday .....	27	29.876	44.0	39.4	N.W.	48.0	52.3	39.0	85.4	32.9	—	
Tuesday .....	28	29.533	60.6	55.4	S.W.	48.3	61.7	42.3	73.2	38.8	0.143	
Wednesday ..	29	30.081	37.5	36.6	S.W.	48.0	51.3	32.2	76.2	25.6	—	
Thursday ....	30	30.259	45.6	45.0	S.E.	46.8	55.7	36.4	74.8	23.0	—	
Friday .....	31	30.314	54.1	51.2	S.E.	47.9	57.2	44.8	81.2	42.2	—	
Saturday ....	1	30.175	50.9	49.5	S.E.	48.4	54.6	46.6	58.2	35.9	—	
		29.971	49.6	47.3		48.0	55.5	39.5	76.7	34.6	0.173	

#### REMARKS.

26th.—Showers 8 to 9 A.M. and about noon, fine and windy afternoon, fine sunset.

27th.—Morning fine and bright, afternoon cloudy, gale at night.

28th.—Gale early, heavy shower soon after noon, remainder of day fair and calm.

29th.—Fine, bright, and cold.

30th.—Fog early, fine bright day.

31st.—Bright, warm, and pleasant.

1st.—Cloudy nearly all day.

A fairly average week for the time of year, but with a small rainfall; in fact, October has been exceptionally dry, the total being less than an inch.—G. J. SYMONS.





## COMING EVENTS

13	TH	Richmond, Brixton, Teddington, and Tunbridge Wells (two days).
14	F	Reading. Crystal Palace, Huddersfield, Canterbury (two days).
15	S	
16	SUN	23RD SUNDAY AFTER TRINITY.
17	M	
18	TU	Winchester, Yeovil, and Lincoln. Plymouth (two days).
19	W	Wimbledon. Northampton and Birmingham (two days).

### AN ADDRESS TO GARDENERS.

**T**HE enclosed is an extract from a paper read by W. G. Soper, Esq., President of the Caterham Horticultural and Cottage Gardeners' Society, on October 31st, at the opening of the session 1884-5, of the meetings for mutual improvement, and which it was unanimously resolved should be forwarded to the *Journal of Horticulture*.—B. CATT, *Secretary*.

The occupation of the gardener seems to demand a variety of qualities. Patience is needed, for although no one would be so childlike as to scratch the earth to inquire if the seed is germinating, in many instances months must elapse before the failure or success of a given treatment can be affirmed. Minute observation is also necessary, for it is chiefly in the observance of petty details that there lies the difference between success and failure. Teaching will accomplish much, but observation is fruitful of more. There are many bits of experience, amounting almost to tricks of trade, which are found very useful; but given these, nothing is a substitute for watching, testing, and reading. It is doubtless the innumerable and subtle chemical conditions, varying with every change of atmosphere, soil, and condition, which have produced a literature so copious and so continuous week by week. The gardener who is not a reader soon ceases to occupy the foremost place. Nothing he can read can be a substitute for his own brains, but his own ideas will narrow and crystallise unless he reads as well as thinks, and thinks as well as reads. These are the reasons which give potency to your technical discussions.

One is sometimes surprised to hear depreciatory remarks of these meetings. Some phenomena must surely exist which induce gardeners to suggest each to the other better modes of treatment. The cobblers do not debate how best to mend boots; the coachmen do not discuss how best to manage horses. Why do gardeners meet to read and hear papers on the best system of cultivation? Are they more loquacious than their brethren? Are they less employed than their compeers? Rather is it not that the gardener has to deal with a more variable quantity with respect to the conditions under which he can operate, and hence he needs every possible hint which by any and every means he can obtain. Your discussions are in the interest of your occupation, and whatever tends to develop your powers benefits those in whose employ you are labouring.

Now there are a few points affecting the relationship of employers and employed to which, perhaps, I may be allowed to advert. I can conceive a gardener who takes a deep interest in his work producing some magnificent bloom, and with commendatory pride placing the plant in a prominent position in the conservatory. I can fancy the young lady, or say the young gentleman, having their eyes attracted by the beautiful flowers, and forthwith without any ado abstracting the bloom—that very bloom which for many a day has been the anxious solicitude of the cultivator. I can realise

the blank amazement and intense disappointment with which the gardener on returning to the conservatory finds his pet bloom murdered. If the gardener felt no chagrin, in my judgment he would not evince the zeal which, in this imaginary case, I have assumed him to possess. If the gardener speak out the feelings with which he is filled, the employer can strictly say the flower was his; that with his appliances, with his labour, and with his money, the bloom was produced. Now this is just one of the many cases in which mutual forbearance is so necessary. Justice without sentiment is shown by the employer; affection without vested right pertains to the employed; but how often has such an episode disturbed, if it has not destroyed, the existent relationship?

Take another case. A gardener raises plants from seeds. If he be in an ordinary gentleman's private garden the number of the one kind of production is in excess of the requirements. What more useful than that the surplus should be handed to another producer, who, in response, is supposed to supply out of what he may have in too great abundance? Thus both are served. "Exchange is no robbery," as we used to say at school. Within the limits thus sketched, good, and only good, arises. But do matters always rest there? From these harmless exchanges in kind do not there sometimes follow exchanges for money, and if not sales to other gardeners sales to shopkeepers? and if such sales, whose is the money? Is it the gardener's "perquisites" or the master's own? What I have sketched has occurred and does arise. In these and kindred matters the best solution lies in the consideration of both parties. The master might recognise the servant's zeal by a bonus, the servant might protect the master's interest with added perspicuity in remembrance of the appreciation thus tangibly shown.

I will cite one further instance. A head gardener enters on a new engagement, and brings with him (the employer knows not whence) a number of plants. These are interspersed with those already on the premises. The employer perhaps notes a change, but no special remark is made. At the end, say, of twelve months master and servant agree to part. Assuming the plants are now removed a gap is noted. If the gardener asks the employer to pay their value there is, not unnaturally, an unpleasant sensation. Were, however, the plants pointed out at the commencement the master can either refuse to accept them or offer to pay for them; but when they have formed a portion of the common stock—a stock cultivated at the expense of the master—either removal or monetary claim is alike a delicate proposal, however just the initiatory claim may have been. Imaginary, did you say? On the contrary, such incidents have occurred, and just for want of a manly understanding at the start. The finish has been painful.

I am desirous of directing your attention to another inquiry—viz., whether sufficient opportunities exist for young men to make themselves fairly reliable all-round gardeners. The specialist has a chance. He may enter a small nursery; he may take a given branch; from the small he may advance to the larger nurseries; he may choose bulbs or seeds, flowers or fruit, plants or trees; he may adopt the useful or choose the ornamental; he may confine himself to the conservatory, or branch into landscape gardening. These are his possibilities. But where is the school or training-ground wherein an all-round man is to be trained? Some maintain that a gardener is like a poet—born and not made. Within limits there is truth in this statement. It is sometimes pitiable to see a mother demanding her daughter to practise at the piano when the child has no more music in her than an old brass kettle; but a good tutor will make a musical child a yet more accomplished musician. So the advantages of training even to one who has innate love for gardening cannot be over-estimated. Some men can make flowers grow, as it were, by simply looking at the pots. But these are the exceptions. What is to become of the man with



only ordinary taste? Where can he learn to raise seeds, to pot plants, to mix various composts, and to adapt his management to the varied treatment of Fuchsias, Pelargoniums, Cinerarias, Camellias, &c. Where are the technical schools for gardeners? The only available mode at present accessible is by change from place to place, and from gardener to gardener. If the head men taught the under ones perhaps no better mode could be desired, but in the majority of instances the candidates have to pick up their knowledge usually by themselves, and not unfrequently from unwilling teachers.

### ASPARAGUS IN AUTUMN AND WINTER.

LAST autumn we cut the first of our forced Asparagus on November 10th. This year we have been a week later in putting it in, and will be the same in cutting. The roots we lift now are from four years to five years old, and have been grown wide apart and in a sunny position. The old stems are cut off close to the surface of the soil, and then the roots are lifted carefully without breaking any of the small rootlets. About two dozen good roots will produce several dishes of useful shoots, and we lift this number and put them in to force every fortnight all through the winter.

At times when we have to supply for shooting parties and extra company we put in more roots; but lifting them in small quantities and putting them in often is a good plan. We never allow the roots to become dry before they are placed in the forcing quarters, as the roots being so succulent they would soon shrivel and lose strength. Our favourite forcing place, which we use every winter, is the bed of a Cucumber pit. Sometimes there is a corner of this empty, which is then filled, and if the Cucumbers are in their mounds of soil and do not occupy the whole bed we fill up all round with Asparagus roots. A quantity of fresh leaves is put under the roots and then they are packed in as closely as possible. Old soil from the potting shed is then put over them in sufficient quantity to cover the roots and no more. A thorough supply of water is then given with tepid water, and the work is completed. If they require more water before the growths appear it is given them. With a bottom heat of 75° and a top heat of 60° the heads will be ready for cutting twelve days or fifteen days after forcing begins, and the same roots will continue producing shoots for a fortnight at least.

Some think it is a pity to lift and force good Asparagus roots, but this is not my opinion, as it is such an easy matter to keep up a supply of roots by sowing a quantity of seed annually, and there is no vegetable so valuable in winter as Asparagus. We invariably hear from headquarters respecting what we send in, especially in November and December, and what we hear amply compensates us for all the trouble taken with the plants. Last year our employer informed us that he once bought Asparagus in Paris in November at £5 per bundle, and we told him that was just the value of what he was then having for dinner three times a week!—A KITCHEN GARDENER.

### ENEMIES AND FRIENDS OF THE ROSE.

ALTHOUGH the past season will be allowed by most growers to have been better than the average as to beauty and size of the blooms, it must be granted that the favourite flower has not been without its enemies, both as to insects and weather. The mild winter seemed to give the plants but little rest, slow growth continuing; pruning time dismissed an immense quantity of shoots, and I suspect many hundreds of buds in most gardens. As far as my experience goes, there was not nearly as much bleeding after the pruning as might have been expected, certainly not as much as I have had in previous seasons, when apparently the plants were less advanced.

My Roses are in two different gardens, one close to my house, the other three or four hundred yards away. In the garden behind my house the primary bud was almost generally a failure; this I attributed to the larvæ of one of the small moths. The other garden, however, was singularly free, and I begin to doubt whether the culprits were not much larger creatures. My small boy keeps two or three pairs of Baldhead pigeons, and I saw these frequently on the Rose beds, and am very suspicious that these were the depredators. Has any other Rose-grower, more amongst his plants, noticed whether pigeons do pick out the bud as it starts to grow? Anyway, mine were gone, and at almost every joint, two, sometimes three, little weakly shoots replaced the sturdy growth I had hoped for. Doubtless under such circumstances I ought to have gone over the beds again

early and rubbed away all but the strongest of these. I omitted this until somewhat late, and the blooms in this garden have not been remarkable this season. Then in the early part of May, when growth was pushing, came the severest pinch of the whole winter, 12° of frost, and the young growth did not approve of it.

Then in the early part of June came such a visitation of the aphid tribe as I never recollect. It is not surprising that the public should believe they come in the air, for it is difficult for those unacquainted with the natural history of the green fly to realise that the myriads clinging round and hiding a shoot entirely from view may all be the produce of a single female; but such it is. The life of the perfect female is not very long, yet Reaumur calculated that one might be the great-great-great-grandmother in her own lifetime of 5,000,000,000 descendants! If but a tithe of this calculation is correct, it is easy to understand the rapid appearance. I urge those, then, who have the time to spend among their plants, to deal at once with the first specimens seen. The rapid increase is dependent on a species of disbudding as it were, by which female aphides are continually given off, and these juveniles very shortly do likewise, hence the value of securing the early solitary specimens. When, however, the plague has spread, we must act rapidly, would we save our exhibition blooms from injury. Each of these tiny pests has her piercer into the soft stem, and is diligently sucking juices that should go to the bud.

The Fir tree oil will kill all pests, but it does not mix kindly with water, and it has a power for evil as well as good; by it the foliage may easily be marred. Spraying the shoots is not as successful as I had hoped it would prove. So many escape destruction, that two days after the shoot is as thickly covered as ever. A year or two ago someone kindly gave in your pages a method of preparing petroleum for green fly. This I have used freely this year, and prefer it to the Fir tree oil, and it is far less expensive. I take a pudding basin and put in it some of the petroleum preparation, and go round carefully, bending down each shoot and shaking it in the petroleum, sometimes gently rubbing the shoot between the finger and thumb. Some few cannot be thus treated for fear of breakages, here I keep wetting my finger and thumb and wiping the shoot. The petroleum preparation does not leave the same soapy look on the foliage that the oil does.

Both these remedies, being death to all insect life, are apt to kill some of our best friends at the same time. The innocent often suffer for the guilty, and in using either of these valuable aphicides we doubtless often slay one that is working hard for us in the same direction. The larvæ of one of the Syrphidæ is one of our most valuable helps in keeping down the numbers of the aphides; but, alas! it has a resemblance to a grub, and therefore rarely escapes the gardener's squeeze when seen; and yet how valuable is this larva, and how widely should it be known by all interested in gardening! The two other chief destroyers of the aphides, the ladybird and the lace-winged fly, have not in their larval state the same resemblance to a maggot, and therefore possibly are at least considered innocent, and so escape; not so the larva of the Syrphus, by far the most useful.

It is very difficult to so describe this larva as to make a person who has never watched it distinguish it from an ordinary grub. It may be of various colours; nay, somewhat like the chameleon, it may change its colour—that is, if living on the green fly it is green, but the same specimen transferred to a Cherry tree and feasting on the black aphid will soon take on a blackish colour. The great difference between this larva and an ordinary grub is that the head is pointed, and that when extended it gradually becomes thicker towards the tail, and this appears as if cut off square. The action of this larva, which is blind, is peculiar when in search of food; the tail half of the body is, as it were, fixed, whilst the pointed head is lifted up and put down again in search of aphides. If in this foraging an aphid is met with, it is quickly seized, lifted in the air, and sucked dry, and the voracious larva "asks for more." The number that it will devour is surprising; I suspect one to be in the neighbourhood if many empty skins of aphides are about on the shoot. When this larva assumes its chrysalis form it resembles a frozen drop of green water on a leaf, having one end rather pointed. If such an excrescence be found fastened to a leaf, let gardeners leave the same, it may be the parent of countless allies.

In the gardening world the destruction of the earlier aphides is of vast importance, and on my Morello Cherry trees, in years gone by, I fancy I have saved my crop by watching for and destroying the scattered females on first appearing.

Another larva has been more than usually destructive with me during the past season. Every Rose-grower must have occasionally noticed a Rose shoot die off for a few inches. If this be



examined, the end of the shoot will be found quite hollow, nothing but the bark being left for an inch or more. If, however, the examination be made early enough, and we keep on cutting the empty shoot till we arrive again at the pith, we shall probably have the satisfaction of killing, as we approach the pith, a yellowish grub. I have never hatched this out, but fancy from its appearance that it is the larva of a beetle. So far as my experience goes, only one egg is laid in each shoot, and where there are a number of Briars placed for budding. Almost every shoot may be thus affected, but will probably be unnoticed as of no consequence. However, if I find one amongst my Briars, I begin to search round and destroy all I can see. A leaf fading at the end of the shoot is a tolerably certain indication of the presence of this unwelcome little visitor.

The mildew has not with me appeared so early, neither is it with me as diffused as with some of your correspondents. I am afraid Marie Baumann must be put down as very susceptible to its influence. President Willermoz is another Rose that yields early, also Comtesse de Serenye. With me these Roses dispute the palm for succumbing to its inroads, and Camille Bernardin treads closely on their heels. "A. F. M." talked of Prince C. de Rohan having degenerated with him, now Camille Bernardin has served me the same. I used to place it very high up. I cannot do so now except from memories of the past. "T. W. G." writes of Jules Finger as one of our best H.P. autumn bloomers. I have grown it several years, and never yet had a respectable bloom, summer or autumn. Capitaine Christy is much superior, although, as I have already remarked, it is with me a disappointing Rose.

By-the-by, a friend of mine, a capital Rose-grower and very successful exhibitor, says he does not mind a bit of mildew, as it checks the growth and hardens the wood. Is there any virtue in this idea? Even with this, the look of it is so dreadfully depressing, I fancy the "remedy worse than the disease."

Orange fungus I have scarcely noticed this season, and very little of a disease that one of our nurserymen wrote to me about a year or two ago, and which he then said he had found traces of in almost every stand of Roses throughout the latter part of that season. This is to be noticed on the under surface of the leaves, and the plant affected soon loses the healthy aspect of its foliage and becomes yellowish. On inspecting the leaf it looks to the naked eye as if it had been peppered. With a pocket lens much of this black proves to be the black tops of a yellow fungus. Interspersed with the black are the yellow spots, as I believe the early stage of the black. This year I have not seen much of this, but last year I had more, and it is a difficult thing to do anything for, as nearly the whole of the foliage appears affected. Should it appear early it will prove a great detriment to the beauty of the blooms, for healthy foliage is an essential to success in obtaining good flowers.—Y. B. A. Z.

### EUCHARIS AMAZONICA.

THERE are few flowers that are more useful or more appreciated at all seasons than those of *Eucharis amazonica*. They are used extensively in church and house decorations, for bouquets, wreaths, crosses, and other devices. They have become so popular now that they are grown in most places where there is a plant stove. As a rule, however, it is in few places that we see them really well grown. Even in some of our best gardens, with every appliance for their cultivation, they do not succeed as they should; while, strangely enough, in some places they grow vigorously and flower freely without apparently any trouble to the grower. I know some gardens where they do not succeed under ordinary treatment, and yet the gardeners have tried everything they could think of to make them grow satisfactorily. In some instances the plants were turned out of the pots, divided, and potted in fresh compost, and the pots plunged in bottom heat, and in others the plants were placed in different positions in the house to see if that would have any effect in making them grow, but the results were not what were desired in either case.

Some growers place their plants in cold frames or pits for a short time during the summer to rest, then withhold water from them, and allow the leaves to flag, with the idea that this treatment will ripen the bulbs and make them more floriferous. I do not think it is beneficial to the bulbs to allow the leaves to flag for want of water.

I am sometimes inclined to think there must be varieties of *Eucharis amazonica* possessing stronger constitutions than others, seeing they do well in some places and not in others under similar treatment. Here I find no difficulty whatever in growing and flowering them freely. Nurserymen and travellers who visit this garden tell me that the *Eucharis* plants here are the finest they see anywhere,

and I have never seen better myself, whether for size or free habit of blooming. Perhaps I should state the dimensions of some of them to give an idea what they are like. I have at present six 14-inch pots as full as possible. The plants in each measure 6 feet through, and the individual leaves are from 2½ to 3 feet long, and from 7 to 8 inches broad in the centre. The plants in each pot produce from four to five dozen spikes of bloom at one time, and this they do twice a year, and each spike has from five to seven large flowers; besides, they are seldom without a few blooms all the year round.

The treatment they receive is very simple. The pots are well drained, and the bulbs are firmly potted in a heavy red loam, with a mixture of leaf mould, crushed bones, and river sand. In growing the *Eucharis* I think success depends in a great measure in shifting or breaking-up the plants as little as possible, and in giving them abundance of liquid manure and soft water at all seasons when they require it. The plants here are never plunged in bottom heat, and some of the best of them have not been shifted or broken up for the last seven years; and I do not think anyone could desire to have better results than those obtained here under this system.—A. PETTIGREW, *Castle Gardens, Cardiff*.

### ANTHURIUM SCHERTZERIANUM.

THIS is one of the best flowering stove plants in cultivation, and some years ago it excited considerable attention when in good condition at our early summer exhibitions and in private gardens. There can be no doubt that it is a popular plant at the present time, but it is somewhat surprising that it is still represented in gardens generally by a few specimens instead of by dozens or scores, as it deserves to be.

I cannot discover why such a fine and useful plant has not been brought into greater prominence. It cannot be on account of the difficulty that attends its cultivation, for with ordinary care it is one of the easiest of plants to grow. It is by no means less beautiful or useful than many plants that are used by hundreds for purposes of decoration. Its bright scarlet spathes have indeed few equals either upon the plant or when cut and tastefully arranged with a spray or two of Maidenhair Fern in a vase. There is no comparison between this plant and the very finest forms of *Masdevallias*, which are now so popular. Certainly the latter require only a cool house, while the plant in question must have stove heat while making its growth, but the gorgeousness of the *Anthurium* more than compensates for the difference in this respect. Perhaps the true cause is the high price which has been maintained for really good varieties. This may be the chief cause, combined with the length of time required before a stock of plants can be raised by dividing the crowns or from seed, which is not very freely produced. Seedlings have been moderately cheap, but very rarely have they proved equal to the finest forms, but many of them are nevertheless worth a place for all practical purposes of decoration.

In addition to the decorative beauty of this plant in the stove while in flower, it should be largely grown in those gardens where Orchids form a chief feature of interest. There is a great scarcity of bright scarlet flowers amongst these plants, therefore the bright and curious spathes of this *Anthurium*, as well as its foliage, are admirably adapted for associating with them. During the early spring months, when *Dendrobiums* and *Cattleya Trianae* and *C. Mossiae* are plentiful, a number of well-flowered plants of *Anthurium* staged amongst them give to the house in which they are arranged a very effective appearance. Not only can these plants be employed in stove temperatures, but they are not injured by standing for a time in the conservatory, or any structure where the night temperature ranges between 45° and 50°. When these plants are employed in a low temperature, however, it is necessary to prevent cold draughts striking directly upon them, and care must be exercised in keeping them moderately dry at their roots.

Not only can this *Anthurium* be had in bloom during April and May, which appears to be the usual time under stove treatment, but it can be had in bloom during the dreariest months of the year and in succession for at least six months. This renders it doubly valuable for decoration. Its great value for the embellishment of our plant houses, however, is the fact that it can be had in flower to brighten and beautify these structures when *Poinsettias*, *Euphorbias*, *Centropogon Lucianus* and other winter-flowering plants are over, and there is little left until *Begonias* can be brought into flower in sufficient numbers to render warm houses attractive.

To flower these useful plants well they should not be subject to stove treatment the whole year or they will only throw up their spathes oddly and but few of them. When growth has been completed, say at this season of the year, the plants should be removed from the stove to a temperature of 55° for a week or two, and finally to some structure kept about 5° lower. This will induce the plants to rest thoroughly, by which they are very much benefited, and not



only flower with greater certainty and profusion, but grow more vigorously and luxuriantly afterwards. Before their removal from the stove they should gradually be kept drier at their roots, and then maintained in that condition while they are at rest. If they are wet at their roots when removed from the heat and kept in that condition afterwards, instead of the roots remaining perfectly healthy, they on the other hand are very liable to decay. The length of time necessary to give these plants a good season of repose may vary without any detriment to them, according to the time they are wanted to throw up their brilliant spathes. It is wise to give them two or three months' rest at the very least, and in order to accomplish this they should be removed from the stove sufficiently early. The whole of the plants should not be removed at the same time; for instance, when required in full beauty in winter a batch should be removed towards the end of August, and so on, according to the time they are required to do duty. Those for late flowering should be kept in stove heat for some time longer, say until the close of the year. For this purpose those should be selected that have not yet completed their growth. To bloom these plants months before their real flowering time and months later is not really the work of one season, but of several seasons' careful training, yet much can be done in one season towards attaining that end. Like many other plants used for forcing or late flowering they must be induced to make their growth at a certain time, then rest, so that they will be ready for producing their spathes when required. When introduced again into brisk heat after a good season of rest they quickly do this. When required to flower in the depth of winter they need not be unduly forced after they have been at rest to accomplish this, if only attention is paid to starting them early in the year, when forcing is done much more readily than during the declining months of the year.

These plants grow luxuriantly in a close moist atmosphere where they can be shaded from bright sunshine during the season of activity. The temperature most suitable is that ranging from 65° to 70° at night, with 5° higher as the season advances and the external air becomes warmer. The day temperature from sun heat may be 10° or 15° higher. While growing abundance of water is required at their roots, as well as over their foliage.

This Anthurium is not a large or deep-rooting plant, and the pots or pans in which they are growing—the latter for large or moderately large plants are decidedly the best—should be fully three parts filled with drainage. Although the plants require abundance of water they dislike the soil about their roots in a sour or saturated condition. Potting should be done directly the roots show signs of activity, whether in winter or spring, but this must be entirely regulated by the time the plants are started into growth and required to flower. In potting the plants should be well elevated above the rim of the pots or pans in which they are placed, the whole of the old compost carefully removed from amongst their roots, and then thoroughly washed in tepid water. They will do in the same pots for several years without being disturbed, but grow with greater freedom when repotted annually. This insures the soil in which they are potted being in a sweet condition for them, and from the enormous amount of water they require it becomes thoroughly decomposed in the space of a year. The soil we have found most suitable is fibry peat and sphagnum moss in equal proportions, with a good dash of sand and lumps of charcoal freely intermixed. The insect that troubles these plants most is brown scale, which is easily eradicated by the sponge with a weak solution of soft soap and water.—SCIENTIA.

#### DECORATIVE STYLES.

THE changeful moods of fashion are almost proverbial, and amidst the many other callings it affects, gardening has its full share of its fickleness. At present the fancy is for the natural style of arrangement—plants and flowers, trees and shrubs, all must be arranged in a natural careless manner. It has been my privilege to see many of these arrangements, and though I am an ardent admirer of Nature in all its forms, I have many times thought the latter term the more appropriate. I can well imagine how the stiff formal style, which all must be pleased to see dying out, originated; but I cannot think how the natural style should find favour, I mean the natural style in the extreme form in which it is often to be seen at present. Nature may be admired, it can never be imitated. No doubt the stiffness that has been so long apparent has much to do with the modern taste, but we ought not to rush to extremes either way, or we shall be tired of the new style far quicker than of the other. Even if Nature could be imitated it is not to be desired. Gardens are not wildernesses; why try, then, to imitate Nature in their arrangement? Houses are not meadows, why decorate them with flowers as Nature does? No, let us exercise true taste; and as gardens are places of refinement, let them be laid out with refined taste; and as houses are homes, let them be in all things homely. It is not so much Nature that should be imitated, as that stiffness should be avoided.

I dislike to hear the term "careless" applied to a natural arrangement. No one with true taste can admire carelessness, and yet artistic effects,

which are the outcome of much study and talent, are often designated as such. As we call a spade a spade, let us give beauty its true name, whether it is dressed in a picturesque garb or any other of its many costumes; but whatever is careless can never be beautiful. Most of us know how much easier it is to plant geometrically correct than to plant effectively, and the man who does the latter ought to hear his work praised for something higher than carelessness.

Nature, as I learn from it, teaches boldness and freedom. At the very spot where we in our timorousness would place a tiny plant Nature rears a noble tree, and we all admire the effect. Nature also teaches us to choose situations for the well-being of the plants; the hillside for the Heather, the shady dell for the Fern. Yes, there is much to be learned and enjoyed in Nature; but do not let us term the crude arrangements we so often see as careless and natural, for the one can never be associated with the other.—J. MACDONALD.

#### NEW ZEALAND SPINACH.

THIS I have found to be a good substitute for the more common Spinach, especially during the very hot dry summer we have just passed through; but I find it is not so well known as it deserves to be. The seed should be sown about the middle of March in boxes or pans, placed in a Cucumber frame or pit or anywhere, provided it receive a little bottom heat. As soon as the young plants are large enough they should be potted into large 60's, returned to the same position, or where the young plants can get the same amount of heat, until they are established in the pots, when they should be gradually hardened. In fact they should be treated precisely the same as Tomatoes.

About a week before they are planted out—which will be about the end of May or the first week in June—a trench should be dug out in the sunniest part of the garden, 15 inches wide and the same in depth, and filled to the top with well-decayed manure. On account of their spreading habit they should be planted 3 feet apart in the trench, allowing them the same space each side. All the attention they require will be to keep them well watered in dry weather and free from weeds. When the round or prickly sort is running to seed you will be able to gather abundance from this. From a row 20 yards long we have been gathering bushels every week all through this summer; the last we gathered was on the 4th inst.—J. PROUSE.

#### STORING POTATOES.

A CHEAP and efficient plan of storing Potatoes we have had in use about six years, and found it answer in every way; in fact, much better than the old plan of clamping them in the open ground as we used to do. We can examine them without trouble and in any weather. A description of this may be of use to some readers who have no cellar or frost-proof place in which to stow them.

We had a hole dug in the tool shed about 6 feet long, 4 feet wide, and the same in depth, placing some rough boards round to keep the soil from falling in, the end boards fitting tight to keep the sides in their places. The top was covered with two old doors, answering as a covering for the pit and a floor to the shed. We store about a ton of Potatoes every year, with a little straw on the top to keep the air from them. We have had them safe with the thermometer registering 20° of frost. We also find it an excellent place to keep our Dahlias in, also Beet or any roots that are injured by the frost. They keep as fresh and plump as when packed in sand.—H. E. M.

#### RESTING BULBS IN WINTER.

THERE are many bulbs, hardy, half-hardy, and quite tender, the top growths of which perish in the autumn, and then it becomes part of the cultivator's work to preserve them in as sound a state as possible throughout the winter. Hardy bulbs, which can be left in the open ground always, are the easiest to deal with. Many of them may be rested and preserved without any cultural attention whatever; but there are others which may be benefited by a little protection. We have repeatedly left Gladioli corms, Lilium, and other bulbs of this kind out all winter with only the ordinary soil over the crowns, and not one of them perished; but this was in mild winters, and it would not be safe or advisable to depend on this in severe weather. To use manure or anything adhesive and which would retain the wet as a covering over the crowns would cause many of them to decay before the winter was over; but ashes, sand, or sawdust may be placed over the crowns with advantage.

The best time to do this is when the stems are newly cut about this time. Where there may be bulbs scattered in an herbaceous border, it might be difficult to tell where to put the covering on were it left until after the stem had disappeared. To draw the soil over the crown affords a little protection; but frost soon penetrates soil, and of all materials I am most in favour of sand for bulb-covering in the open air. It will require an unusually severe frost to injure bulbs through 5 inches or 6 inches of sand, and it has always a strong tendency to prevent decay.



More tender bulbs and tubers, of which Dahlias may be taken as a type, should be lifted from the ground before being injured by frost. When they are lifted at first they will be very damp, and they must on no account be stored in this state, or decay and much loss will certainly follow; but they should be placed in some very dry room or shed until they have become quite dry, then store for the winter. Where there is a place with an equal and not a very high temperature, hardly any covering will be required for the bulbs, as a mat, a quantity of moss, or a handful of hay thrown over them will keep them plump and fresh; but while this is important it must also be seen that the roots are properly rested. This is a question of temperature, and no attempt should be made to store bulbs in any place where there is a strong heat. To place bulbs in warm lofts or close to hot pipes or flues is a mistake, as they would soon commence growing and would lose all the benefit of complete rest, which is so necessary to the success of all bulbs.

Any place where the frost can be excluded and where the temperature will not rise higher than that in the open air in the shade, will be found an excellent position in which to rest all bulbs requiring to be taken indoors in winter. Hothouse bulbs of the Caladium and Gloxinia description may be kept in a slightly warmer place, but if they are properly developed bulbs and well dried, we should rather store them in a cool place and with the others than in a position where growth would begin in a few weeks after they were stored, and where they would never have any complete rest. Storing bulbs in winter is one thing, resting them is another. The former is done to preserve them, the latter to recruit their energies, and this is the most important of all. I have often noticed how weakly a bulb which was never properly at rest began growing in spring, and how robustly and energetically another which was thoroughly rested commenced its growth. The aim of all should be to secure the latter and see that rest is complete.—M. M.

#### LIQUID MANURE.

I HAVE carefully read Mr. Abbey's article (page 401) on the above subject, also "A Thinker's," page 392. I cannot see myself what "Non-Believer" needs to convince him that to apply liquid manure when the ground is dry is not only dangerous but wasteful. In my opinion the illustration of a bottle being half full will hold more water than one that is empty is not only out of place, but absurd. Suppose, for instance, "Non-Believer" had to cultivate soil as it is here, a stiff clayey loam, with a subsoil of marl, he would find if it were allowed to become dry it would crack. What would become of the liquid manure if poured on and washed in afterwards? A more legitimate way would be to fork the surface over to fill up the fissures, give a good soaking with clear water, then, if in summer time, apply the liquid manure in the morning, give a good mulching with half-decayed manure, or anything to prevent evaporation. The same applies exactly in the case of plants in pots, Vines, or Peaches.—J. PROUSE.

#### THE CAUSE OF MILDEW.

I WROTE to you some four or five weeks ago on the subject of mildew on Rose trees. My object in doing so was to elicit any useful information that your readers might have to give. Perhaps you did not receive my note. I think the subject important enough for consideration, at all events quite as important as "whether A. K. Williams should be styled Emperor or Empress." In this week's Journal "C. W." says that mildew is very prevalent in cold wet summers. Now, I do not think anyone can call the summer of 1884 wet or cold, yet mildew on Rose trees has been very prevalent in this neighbourhood (North Cheshire). Sulphur is a snare and not a preventive; its effects are only temporary, and are gained at the cost of disfigurement. We want to get at the root of the matter, and not to content ourselves with guesses and nasty mixtures.—J. C. CLAYTON.

[We have no recollection of having received the letter referred to on this difficult and important subject.]

#### EXHIBITION ROSES.

In the Journal of 23rd October Mr. Mawley has given a most valuable paper on exhibition Roses, and the table of the relative exhibition values of the various sorts is certainly extremely useful, and one to which I have been looking forward ever since. A similar table for Dahlias appeared in your paper. Almost at the same time the National Rose Society issued its revised catalogue of Roses, and it is to a comparison of the two that I wish to draw your attention. Of course, in Mr. Mawley's catalogue there are many varieties mentioned which do not appear in the National Rose Society's catalogue. This is only to be expected, as in course of time new varieties push out older ones, but I cannot understand why any should appear in the National catalogue which are not in Mr. Mawley's. The following are the Roses in question:—Cath. Soupert, 1879; Centifolia Rosea, 1863; Comte Raimbaud, 1867; Egeria, 1878; Emily Hausberg,

1868; Harrison Weir, 1879; Maréchal Vaillant, 1861; Monsieur Boncenne, 1864; Mrs. Laxton, 1878; Thérèse Levet, 1866; Violette Bouyer, 1881.

Mr. Mawley does not mention any of the above, of which, with the exception of Violette Bouyer, the most recent was introduced in 1879, and if in five years a Rose has not made a name it certainly seems to me unfitted for the National catalogue. I cannot understand why Violette Bouyer is not mentioned, as she was largely shown in 1883.

Possibly some of your readers can enlighten me on the above point, as it cannot be a question of the year with the Roses referred to, as Mr. Mawley's catalogue extends over eight years, which would give every kind of Rose a chance.—ASPIRO.

#### BENTHAMIA FRAGIFERA.

THIS distinct and handsome tree succeeds in the south and west of England and in some parts of Ireland, but it is tender and very liable to be injured by unusually severe winters. In a few districts it grows, flowers, and fruits freely, and specimens of the latter are occasionally sent us by correspondents. Some of the finest we have seen, however, were



Fig. 72.—*Benthamia fragifera*.

recently forwarded to this office by Mr. Lakes of Trevarrick, St. Austell, Cornwall, one of which is represented in the woodcut, fig. 72. They were gathered from a tree 40 feet high, and with a spread of branches of about 45 feet; it is therefore one of the finest in cultivation, though we believe there is one near Cork, Ireland, of similar dimensions.

The tree is a native of Nepaul, where it was discovered by Dr. Wallich, who describes it as being the size of an Apple tree and bearing its yellow scentless blooms in June. As seen in this country the flowers are more of a buff hue, not very bright or attractive, but the peculiarly formed fruits are of a rich orange colour, and when abundant they give the tree a most pleasing aspect. The specimen shown in our figure is drawn of its natural size, the leaves being narrow, tapering, and glaucous on the lower surface. The fruits do not possess any quality to recommend them as food, though they are eaten by the inhabitants of the Himalayas.

#### CUTTING DOWN CHRYSANTHEMUMS.

A FEW notes of my experience may possibly be of some interest as regards the cutting-down system. I will commence with a few incurved varieties. I cut down a plant of Eve to within 4 inches of the pot in the second week of May, the result being five very promising flowers on the one plant, which I expect to be at their best about the 20th inst. Mabel



Ward was cut down at the same time with the same result. Mr. Brunlees, cut down a week later, threw three fine buds; unfortunately I lost one. The other two are not so satisfactory as the above, yet may turn out good, but this variety did not break so well with me. Jardin des Plantes, Queen of England, Golden Empress, Empress of India, and Golden Queen were cut down the second week in June with good results, these producing an average of five good flowers about 3 feet from the pot. Hero of Stoke Newington and Princess of Teck were cut back at the same time, the result not being so good; there were plenty of buds, but rather late, owing, I think, to the plants not being very strong when cut down. Mrs. Heale was cut down at the same time, and is still rather late; it should have been shortened at least a week earlier. Princess Beatrice, which is sometimes delicate, is producing three good flowers 2 feet from the pot. I have sometimes found it difficult to get this variety true to name, also Refulgence, which I am glad to say has done with me cut down at the same time as the last mentioned. I must thank Mr. Stevens, St. John's Nursery, Putney, for including these two grand varieties in the collection I had from him in the commencement of the year. I lost only one out of a hundred varieties.

I will now say a word about the Japanese. Madame C. Audiguier was cut down the second week in June, as in fact the most of this section were; but this in particular I pinched afterwards, about the 1st of July. The result is half a dozen really grand flowers, which will be in season for showing. Madame Berthie Rendatler I treated the same way, with about the same results. Madame Delaux is grand, also Baronne de Prailly, Fleur Parfaite, Hiver Fleur, and others cut down as above stated without extra stopping. I have found that I have to regret not stopping some varieties the second time, which have proved too early for me. Lady Selborne, Thunberg, and Red Dragon are a little too early. Dr. Macary and Bend Or flowered early also, but the latter is a remarkable keeper. I cut down Meg Merrilees and Yellow Dragon the last week in May with good results, especially the latter, of which I shall get some fine flowers. I hope this will induce some of the experts to describe how their Chrysanthemums have succeeded this season.—J. PITHERS.

### BOX EDGING.

OF the different plants used for edging garden walks there is not one that will supersede the Dutch Box. It is true that to keep Box edging in good condition requires annual attention, whilst tiles do not require any attention after being once firmly fixed. Box seems, however, to harmonise with the surroundings more than anything else which can be used. If Box is left unattended, it not only has a very untidy appearance, but it will harbour vermin; but if it have an annual trimming, and is not allowed to grow into dense masses, there will be no trouble in this way. Box edging may be laid from the present time up to the end of April, but in many gardens there are so many things which demand attention during the early spring months, that relaying Box edging, if there is much to be done, has to be performed during the winter months. Where such is the case there is no alternative but to do it during the most convenient time when other work is not pressing. Relaying Box edging during the early spring months is preferable, as the weather is then generally in a more settled state, and when the weather is pleasant the work will be finished in a more satisfactory manner than when the weather is cold and wet. During the early winter months storms of rain and snow may occur, which will disturb the bank, consequently the edging would not look so well as if it were done in settled weather.

Before commencing operations procure a good straight-edge a few inches longer than the width of the walk, with a spirit level fixed in it, or a moveable one, and three borning rods. Probably many young gardeners are not acquainted with these, therefore we had better describe them. The borning rods generally are about 4 feet 6 inches long and  $1\frac{1}{2}$  inch square, with a cross-piece about 12 inches in length and 2 inches broad nailed level with the top of the rod. Now take a rule and measure each exactly 4 feet from the top of the cross-piece, and cut a notch in two of them; this will allow the remaining 6 inches, which should be pointed, for fixing in the ground to keep the rods steady. The third rod should be exactly 4 feet in length, and quite level across the bottom, as this will have to be moveable, and will be more convenient for working than if pointed like the other two.

Now suppose we have a long edge of Box to lay. Deeply dig the ground first, then stretch a line in the exact place where the edging is to be, and drive a strong peg in the ground at each end, so that the top of the peg is level with the top of the walk at each end, and at each peg drive a borning rod, so that the notch which was made at 4 feet from the top is level with the top of the peg. Now place yourself at one of the borning rods. If the edging is to be quite level it does not matter which, but if the walk have a slope choose the highest end. You will require an assistant to take charge of the third rod. The assistant should place his rod in the centre of the two end rods, the base of it

resting on a firmly fixed peg. Now by carefully looking at the top of the bottom rod you can easily ascertain if the top of the rod the assistant is holding is quite level with the two end rods. When you have the exact level, the top of the peg the assistant's rod is resting on will be the exact level. Pegs will have to be driven into the ground at convenient distances along the line, the level of each to be taken in the same way as the middle level was taken. After all the pegs are made level, the tops of them will be the exact level the ground should be made up to. The level of the corresponding side of the walk can be had by using the straight-edge and spirit level from each peg.

The line should next be stretched tightly over the pegs, and the ground made very firmly up to it, and be well beaten with the back of a spade to the width of 18 inches. The trench for the Box should be cut out with a sharp spade, and if the bank has been made very firm, the edge of the trench when cut will be quite level and so id. It will now be ready for the Box, but we may as well make a few remarks on preparing the Box. Many gardeners cut the tops level with a knife, which is not only unnecessary but often does harm. If the Box has been trimmed the previous summer it will not be very straggling. It should be pulled apart into convenient sized pieces, and if there be a straggling point or two it may be nipped off. It will now be ready for laying. The Box should be placed evenly along the trench, the tops of the plants being 2 inches above the level of the bank. It should be held firmly in position by the left hand and arm, and with the right hand draw the soil to the roots and stems, packing it very firmly about them. We have found a piece of board about 9 inches long and 4 inches broad very convenient for drawing the soil to the Box, it is also very convenient for firmly ramming the soil. After the Box is laid the soil which was cut out of the trench should be replaced evenly and firmly. The first season after the Box is laid it should be allowed to grow unchecked, the next and following seasons it should have an annual shearing.—A. YOUNG.

### STEVIAS.

WHEN nearly all other hardy flowers are waning these late autumn plants are still as bright as ever, and if the weather continues mild we may expect to have them for some time to come. Eupatoria-like, but much more graceful, they are extremely useful for rockery decoration, especially as they seem to be at their best at this late season. Unfortunately, unless in very favourable positions, they do not endure our winters very well, but they are easily increased from cuttings or raised from seed, and may be had in plenty of time to get large flowering specimens before the season closes. The old plants may also be lifted and kept in cold frame during winter, and again put out in spring, as with many other plants that add little more to the embellishment of our gardens through the autumn months.

The species in cultivation at present is most generally *Stevia serrata* or *canescens*, a very pretty pink-flowered species, small but numerous, and collected into large corymbose heads nearly a foot in diameter, habit trailing, and most useful for a rockery. *S. Eupatoria*, a close-headed species with pure white flowers, is very useful for cutting. *S. Plummera* and the variety *alba* are both very handsome plants; the first with rosy-tinted flowers has a fine upright habit, and useful for dry borders. *S. ovata* and *amabilis* are also pretty plants, all deserving a place in large collections or where the demand for late flowers is great.—M. S.

### FUNGI AND DISEASES OF PLANTS.

By T. J. Burrill, Illinois Industrial University.

(Continued from page 313.)

#### KIND OF INJURY.

THE diseases caused by fungi present many peculiarities according to the species of parasite or of host. Sometimes the latter is simply enfeebled, grows slowly and slenderly as from want of sufficient nourishment, which doubtless is the fact, because robbed. On the other hand, the infested parts sometimes take on abnormal shape or size, the cells of the tissue swell to many times their proper dimensions, or become excessively multiplied, or excessively filled with nutrient material. Their normal functions are impaired or diverted, and curious deformations and transformations occur. Not unfrequently the abnormal growth, though very different from the healthy structure, is just as regular and characteristic, so that one who becomes acquainted with the peculiar development may be able to tell at once what species of parasite produced the odd cell-formation without seeing the fungus, just as certain galls on plants point unmistakeably to the species of insect which caused them.

This, or these, modifications of growth seem to be quite as injurious in many instances as the actual robbery of nutriment first mentioned; stems are swollen and knotted, leaves curled and distorted, fruit made unsightly and worthless. But the worst effect of fungi is the more or less immediate death of the invaded cells. In well-known instances this takes place as regularly as the foregoing, certain destruction following the penetration of the mycelium, and affecting the rest of the plant or not,



according to the location of the injury—if on the footstalk of a leaf, that leaf perishes, if at the base of the stem the whole plant succumbs. Sometimes a fungus seems to be so canstic in its effects that by merely creeping over the surface, sending down here and there, however, branchlets which without entering the epidermis act as suckers, the tissues beneath are destroyed.

#### REMEDIES.

It will be seen from the foregoing that there is much diversity in the physiology of fungi. A full account of the differences known in structure and habit would require a much fuller presentation of the subject than is possible here; but enough has been said to indicate, at least, that there can be no one method of fighting these invisible foes. The unfortunate thing really is, that with all the information yet attained, there is so little of practical value in the way of fighting them, after any methods. We can at least, however, understand many things which need not be done, and so save unnecessary expense and labour, just as the study of entomology saves men from stringing sweetened corn cobs and hanging them in trees to catch curculios. It is whimsical and futile to attempt any kind of medication of a plant by incorporating materials in the soil about the roots. Such applied substances will not usually be absorbed to any considerable extent unless, indeed, directly useful to the plant, and it may be safely said that no fungus parasite can be banished or even excluded by the presence in the tissues of any chemical substance thus absorbed, acting as a medicine. And the same may be said of any attempts at medication by directly introducing into the tissues by boring holes or otherwise, any substances whatever. The driving of nails, &c., into trees for such purposes is an admittance of ignorance, or it is quackery. In all this I do by no means assert that soil elements in certain cases cannot be added which may prevent or reduce the ravages of fungi; but, if so, these elements must be such as act by giving special thrift and quality of growth rather than as medicines.

We may understand, too, that nothing can be accomplished out of doors by fumigations or loading the air with strong odours. The impossibility of retaining even sulphur fumes sufficiently concentrated in the open air about plants to kill them should teach us that we cannot thus destroy an organism having so little dependance on pure air as a fungus. It is emphatically the exception, not the rule, that under suitable cover any such method of doctoring these diseases can be practised with profit. How hopeless, then, the case out of doors! So, too, it is usually useless to apply powdered substances to the affected plants in the hopes of ridding them of these parasites. Those who advise others from pretended knowledge still advocate in books and papers the application of flowers of sulphur to Grape Vines in our country to prevent or cure the "mildew" and "rot." How many tons of sulphur have been thus wasted! There is indeed one species of fungus (*uncinula*), sometimes found on American Vines, which can be reduced in this manner; but it, at least in the West, is of little moment compared with any one of the three others that is not in the least inconvenienced by the sulphur as applied. In Europe this sulphuring has been found beneficial, but against the recently introduced American mildew (*Peronospora*) they have already discovered the antidote ineffectual. It is surely time that writers in our country should begin to understand that a successful remedy for one thing in Europe may not prove useful for another thing in the United States. The application of washes containing ingredients inimical to fungi has in some cases more effect, and when the special work to be done is understood positive good may follow. But even in this, too much dependance must not be placed for general use. Such washes are only applicable to the trunks and larger limbs of trees, and owing to the increase in diameter of the stem cracks soon occur in any such coating, after which the exposure is nearly as great as before.

Without further criticisms of such methods of prevention or cure, it may be stated that something can still be offered for special cases; but the prescriptions cannot be made general. In the first place, much in the way of prevention can be accomplished, has already been accomplished, by selecting varieties for culture which are not subject to the despoliations of injurious fungi. The orange rust (on the leaves) is very destructive to the Kittatinny Blackberry, but does not appear on the Snyder; the White Doyenné Pear is very often caused to crack and thus become useless by a fungus (*Fusicladium*) which often grows to some extent on certain other varieties without injuring the fruit in the least. Such illustrations are very numerous, and when observers learn carefully to discriminate different diseases they will rapidly increase. Season of growth, soil, and methods of cultivation and fertilisation may be usefully studied for the purpose now in view. It is not always the least vigorous plants, as so often asserted, that are most liable to rust, mildew, &c. Sometimes it is directly the opposite, as in the case of Wheat grown on land which is too rich. Certainly we must not suppose the plants need be in thriftless condition before fungi can grow upon or within them. There is simply some condition more favourable than others for the injurious development of the parasite. This special condition it is our business as skilful cultivators to find out.

There are some special methods of treatment, too, by which success may be gained. One kind of Wheat smut (*Tilletia*) can be effectually prevented by washing the seed with a solution of copper sulphate (blue vitriol); but this treatment for the rust on the straw is like smoking cigars to cure corns on the feet. The rust has nothing to do with the seed, but comes from spores passing the winter in the fields. Bagging Grape bunches and growing the Vines under shelter has already been referred to. Washing the trunks and larger branches of Apple and Pear trees with strong alkaline solutions, makes the bark smooth and much less liable to injury by what is improperly called sun scald. The fact is

the bark after such washing is a more certain barrier to living enemies, because more elastic and less liable to crack by the expansion of growth or from the alternations of temperature.

Something can be done, too, by directly preventing the development and dissemination of the spores. In numerous cases the winter is passed only by spores on or within dead leaves. Careful destruction of these may assuredly be very helpful. If one has an isolated vineyard he may do much toward freeing his Vines from fungus depredations by burning affected fruit as discovered and just before the leaves fall in autumn, pruning and burning all refuse, then the following season frequently picking off any diseased leaves, tendrils, fruit, &c., as the marks appear. This has been practically tried with excellent results; but it takes some labour and eternal vigilance. Knowing just how, where, and when to strike is important in any warfare, and advantages can frequently be gained in the kind of struggle now in question. In some localities Apple trees, especially certain kinds, are badly afflicted with a fungus on the leaves and fruit, which burrowing in the tissues causes a reddish or yellowish, usually a swollen spot, from which finally appear numerous cylindrical spore vessels, becoming with age fringed by splitting into threads. More or less injury is done according to the number of infested areas, often, however, utterly devastating the tree. This fungus (*Gymnosporangia*) has a regular alternation of growth on the Apple tree and the Red Cedar, forming on the latter balls sometimes mistaken for the fruit of the tree. These balls are an inch or more in diameter, and in May send out, when soaked with rain, conspicuous yellow gelatinous masses, which must have drawn the attention of all who have had the opportunity of seeing them. The battle would be a hard one against this species if fought only on the Apple, but on the Cedar it is by no means so difficult. The annually produced balls (galls) can be picked off, if so desired, without great labour from one or a few trees, or, what is still easier and more effectual, the Cedars can be entirely destroyed and the Apple orchard perfectly saved. Other such cases are known, and more may be by proper investigations. It has been proved that the rust of Wheat (*Puccinia*) has an alternate stage on the Barberry, and the latter has in some places been carefully rooted out on this account. But facts show that the Barberry cannot be essential to the development of this fungus, for the latter prevails in regions where the shrub is not present at all. Either the alternation is not essential or something else answers the place of the Barberry. Suppose this last to be the truth, which indeed is most probable, and suppose this unknown something to be as valueless to the farmer and as readily extirpated as the Barberry, what benefit—counted in money—would successful investigations confer! Is it not worthy of endeavour, fostered by governmental or other aid? And if so in one case, what shall we say of the hundreds in which the demand for information is still more urgent because less is already attained?

#### A FEW NOTES.

ALTHOUGH the flowering season of the wonderful collection of Roses in the Waltham Cross Nurseries of Messrs. W. Paul & Son is now practically over, yet there is much worthy of note. Rose culture both in pots and out of doors is a special feature, and the plants are this season full of vigour and health, clearly demonstrating that they find a congenial home both as regards soil and skilled attention. Several of the new seedlings, designated "Waltham Climber No. 1," "2," and "3," were still in flower in the open ground at the time of our visit a few days ago. Camellias, too, are grown remarkably well, a very large house being devoted to a collection of these plants, ranging in size from very fine and well-trained specimens to small, sturdy, and exceedingly healthy examples. A house occupied with *Lapageria alba* and *rubra*, the shoots trained against the inside of the roof, completely covering it with healthy foliage and a mass of bloom, was an interesting sight. The young Vines in pots, which were ripening their canes outside, are grand sturdy examples. In the house occupied by climbing Tea Roses planted out is a wonderful example of *Devoniensis*. Although planted out less than ten years ago, it has a main stem nearly as thick as a man's arm. Many other items might be mentioned, but as these are only brief notes they cannot now be included.

On my return journey to town I gave a hurried glance through Mr. Ware's interesting nursery at Hale Farm, Tottenham. On the right-hand side of the entrance there was a bright assemblage of that grand autumnal flower the Chrysanthemum. Nearly every shade of colour was represented in the many striking and valuable varieties grown. The single Dahlias were still highly attractive with their gorgeously coloured masses of bloom. A few good plants were seen in my hasty glance round the beds and borders of hardy flowers. Particularly noticeable were *Stokesia cyanea*, a lovely perennial with lavender-blue flowers; *Erigeron Biglowii*, violet; *Aster Amellus*, violet, with yellow centre, and *salsuginosus*, large white; *Campanula Van Houttei pallida*, lovely pale lavender; *Tritoma Burchelli*, a striking novelty, and *Primula Cashmeriana*, a charming species, flowers rich violet, with yellow centres. Amongst bulbous plants in flower *Montbretia Pottsii*, an effective border plant, with lovely orange-scarlet tubular flowers; *Colchicum autumnale* fl.-pl. and *speciosum*, yellow; and another gay mass of bloom was conspicuously showy in *Amaryllis lutea*. A few bright plants were in flower on the rockery. *Saxifraga Fortunei* was still carrying a few of its erect panicles of snowy white blooms; *Silene maritima*, *Fuchsia globosa*, and *Campanula garganica* were also very showy. In little crannies of the rockwork *Sterbergia lutea* and *Nerine japonica*, lovely bulbous plants, were a mass of bright yellow blossom. Time would only permit me to jot down



a few of the most striking novelties, hence I am obliged to omit mention of many others worthy of note.

Kindly accord me space to thank Mr. Luckhurst for the excellent recipe he gave in the Journal some time ago for making Tomato sauce. My better half has produced, according to the instructions therein given, the best flavoured Tomato sauce I have ever tasted. So much is it appreciated here that I fear it will not "keep" long. I must also thank Mr. Iggulden similarly for his "chou-chou" recipe. Having a number of green Tomatoes by me when his article appeared my better half made a few jars of "chou-chou," and this also I consider is an exquisite sauce. I hope "Thinker" has had his promised "jar" ere this; if so I feel sure he will be charmed with it.—T. W. S.

### JUDGING TOMATOES.

I DO not appear to have made any converts to the proposal that Tomatoes should be judged by flavour, but as may be expected I, being convinced against my will, am of the same opinion still. The shudder from a friend at the very thought of having to taste a number of Tomatoes I can well understand, simply because he has not acquired the proper taste for them; and the same sensation comes over me at the thought of having to taste a number of inferior, and therefore most indigestible, Melons. "A Thinker" objects to the palate test, "which is not adopted for judging Cucumbers." This appears a reasonable objection, but does not this deep thinker overlook the fact that there is a rule pretty generally adopted by judges of Cucumbers? It is a neat, well-matched, and not very old brace that generally wins, and not over-grown monstrosities. It is some sort of rule for the guidance of competitors that I wish to see established. Where one class only is provided, is it still to be a lottery which shall win? I had the opportunity during the past season of visiting six large flower shows, and in each instance the Tomato-judging varied remarkably, but apparently there is no avoiding this in the future.

In most matters I must bow to the greater experience and superior judgment of Mr. Challis, but venture to differ with him when he says that Tomatoes are "chiefly cultivated for culinary purposes." At one time this was undoubtedly the case, but according to my experience they are now more generally preferred in an uncooked state or as a salad, and that is my reason for suggesting that they be cut and tasted when judged. There were plenty of good fruits grown outdoors this season, but unless I am much mistaken they were yet much inferior to those ripened under glass. Over-ripe and under-ripe fruits are not fit to eat, or at any rate are rather insipid when eaten in a raw state, and these may be much improved by cooking. Might I ask Mr. Challis if, when judging culinary Apples, he takes the exhibitors' word as to the value of any culinary Apple he is not acquainted with? Would he not rather pass them over in favour of equally as good-looking and heavy fruit of some known kind of culinary Apple? He is well acquainted with Apples and judges accordingly, but unless he is equally as well acquainted with Tomatoes his decisions, as far as quality is concerned, must be haphazard.—W. IGGULDEN.



AT a General Meeting of the ROYAL HORTICULTURAL SOCIETY held last Tuesday, Major-General Courteney in the chair, the following candidates were elected Fellows—viz., Frederick J. Cheesman, Herbert Letts, E. W. Serpell, G. S. Watts, Charles H. N. Lavender, S. K. Page, Mrs. Taylor, J. B. Thomas.

— WE are requested to state that the PHOTO-MICROGRAPHIC NEGATIVE OF PSAMMA ARENARIA, which appeared on page 415 last week, was taken by Mr. Charters White.

— MESSRS. JAMES CARTER & Co. write:—As many people who saw the LILIPUTIAN POTATO exhibited were anxious to know the exact number produced, we beg to inform you we yesterday detached these from the root and find they reached 353 in all."

— "G. L. M." writes: "We find CHRYSANTHEMUM SÆUR MELANIE most useful, yielding enormous quantities of fine white flowers. Those requiring such at the end of October or before the larger varieties come in would do well to make a note of the above variety."

— DR. ALEXANDER PATERSON, Bridge of Allan, N.B., sends us a bloom of MILTONIA MORELLIANA ATRORUBENS, an exceedingly dark-coloured variety, the sepals and petals very deep purple, nearly black; the lip broad, crimson-purple, with rich rosy-crimson streaks radiating from the column. It is undoubtedly an extremely fine variety, and Dr. Paterson states it has been in flower over a month.

— WITH reference to the remarks of Mr. J. Freeman in the Journal of 6th inst., respecting the RETURNING EXHIBITS FROM CHRYSANTHEMUM SHOWS, we should like to remark that this Society will not only send back any exhibits of cut blooms, but will also arrange for the conveyance of all exhibits to and from the railway station free of expense to the exhibitor on being advised two days beforehand.—R. F. JAMESON, WM. HAWKSWORTH, Hon. Secs., Hull and East Riding Chrysanthemum Society.

— MR. LAXTON, Bedford, announces for distribution his two NEW SEEDLING ROSES BEDFORD BELL and GIPSY. The first is described as "a hybrid Tea-scented variety of the second generation from Gloire de Dijon fertilised by Comte Cavour (a dark H.P.)." It is blush white in colour and very free. Gipsy is from the same cross, but smaller and more of the Hybrid Perpetual type. The colour is "dark velvety red, every bloom coming like a miniature Charles Lefebvre."

— MESSRS. J. LAING & Co., Forest Hill, have an extensive display of CHRYSANTHEMUMS on view, including all the novelties introduced this year and many handsome blooms of the older varieties.

— MESSRS. CUTBUSH & SONS, Highgate, also have a beautiful show of CHRYSANTHEMUMS, which is now attracting many visitors. A great number of varieties are represented, including all the best of the novelties, and the plants are in admirable health. The exhibition will remain open until the end of this week. It is illuminated every evening at dusk till ten o'clock by the electric light.

— MR. W. H. DIVERS writes:—"I remember seeing a cheap form of CARBOLIC SOAP (liquid) used as an insecticide, which was very effectual. Can any of your readers tell me where it can be obtained, in an answer through the Journal?"

— AT the monthly meeting of Belgian horticulturists, comprising M. M. A. Verschaffelt, A. Van Geert, Louis de Smet, C. Spaë, F. Desbois, C. Van Geert, and M. Lubbers, recently held in Ghent, the following NEW PLANTS were awarded certificates of merit—Batemannia valis major and Vriesia fenestralis from M. Louis Van Houtte, and Globba coccinea from M. De Smet-Duvivier. Cultural certificates were also awarded for several Orchids and other plants.

— GARDENING APPOINTMENT.—Mr. William Hepburn, gardener to J. Brunlees, Esq., Argyle Lodge, Wimbledon, Surrey, has received the appointment of gardener to W. F. Burnlay, Esq., Erich Bank, Kirn, Argyleshire. Mr. Hepburn is succeeded by his foreman, Mr. James Grant.

— AT the ordinary meeting of the ROYAL METEOROLOGICAL SOCIETY to be held at 25, Great George Street, Westminster, on Wednesday, the 19th inst., at 7 P.M., the following papers will be read:—"A New Method of Reading the Direction of the Wind on Exposed Heights and from a Distance," by Hugo Leupold, F.R.Met.Soc. "Description of a Component Anemograph," by Alfred N. Pearson, F.R.Met.Soc. "On the Injury by Lightning (April 28th, 1884) to the Monument to the First Duke of Sutherland at Lilleshall, Shropshire," by C. C. Walker. "On the Mechanical Characteristics of Lightning Strokes," by Col. the Hon. Arthur Parnell.

— A CORRESPONDENT near Edinburgh sends us a box of AUTUMN FLOWERS and writes: "As a reminder of the peculiarly mild season we are enjoying I send a box containing sprays of flowers gathered in the garden here. There are over ninety hardy flowers, besides a few tender ones, such as Pelargoniums, Lobelias, Tropæolums, &c. Phloxes, Pentstemons, and single Dahlias I have only sent a few examples, but we have numerous varieties in flower. Beds of Pelargoniums, Calceolarias, and Lobelias are as full of flower at present as at any previous time throughout the season. You will notice that most of the hardy flowers are kinds that are now flowering a second time. Tritomas, Sunflowers, and other late kinds lasted only a short time and are now over, so that these continuous flowering kinds, which after a rest throw up a second crop of bloom, are doing good service this autumn. Roses are still flowering. Dahlia Juarezi flowers best from old roots, all Dahlias do that, but it seems essential in order to get a good crop from Juarezi that old roots should always be employed. The new white Cactus Dahlia, Mr. Tait, is an extremely free bloomer. Among the flowers sent are fine varieties of Chrysanthemums segetum and leucanthemum, both indispensable flowers." The collection is a most interesting one and more suggestive of July or August than November.



— A PAMPHLET on the FOREST AREAS IN EUROPE AND AMERICA AND PROBABLE FUTURE TIMBER SUPPLIES, by Dr. Lyons, M.P., is just issued, and contains a large amount of important information in relation to this subject. Dr. Lyons has been engaged for two years, through the agency of the Foreign Office, in investigating the matter; but a large portion of the inquiries in reference to Canada has not yet been completed. The concluding paragraph, in reference to the importance of the subject, is as follows:—"With every State in Europe and America alive to the urgent necessity of forest work, and with the example of the great forest system of India before us—not yet forty years under conservancy, but already controlling 60,000 to 70,000 squares miles of forest—shall these islands alone stand aloof from the great work of forest conservancy and extension? Out of 77,000,000 acres it is possible for England, Ireland, and Scotland to contribute, with advantage to their industries as well as their agriculture, something like £20,000,000 sterling per annum. The day her industries are paralysed by failure of timber, now within measurable distance of us, this Empire must descend from her high place amongst the nations."

— MR. JOSEPH MALLENDER sends the following SUMMARY OF METEOROLOGICAL OBSERVATIONS AT HODSOCK PRIORY, WORKSOP, NOTTS, IN OCTOBER:—"Total duration of sunshine in month 76 7 hours, or 24 per cent. of possible duration. We had six sunless days. Total rainfall in the month 1 inch. Rain fell on eleven days; maximum fall in twenty-four hours on the 26th, 0.26. Average velocity of wind 10.4 miles per hour; it exceeded 400 miles on five days, and fell short of 100 miles on five days. Mean temperature of month 48.3°; maximum on the 18th, 63.7°; minimum on the 9th, 29.6°; maximum in sun on the 4th, 109.6°; minimum on the grass on the 9th, 25.6°. The warmest day was the 18th, the coldest day the 11th. Mean temperature of air at 9 A.M. 48.6. Mean temperature of soil 1 foot deep 50.6°. Nights below 32° in shade, 1; on grass, 13. Another dry but rather dull and cold month. Rainfall less than in any of the previous nine Octobers, except 1879. Velocity of wind 1.5 mile per hour higher than last year, the last week very stormy."

— REPORTS ON LOSSES AND INJURIES TO PLANTS IN SEVERE WINTERS.—We are requested to state that a large mass of materials having been compiled by Rev. Professor Henslow, Honorary Secretary to the Scientific Committee of the Royal Horticultural Society, referring to injuries and losses of plants in the severe winters 1838—1861, it is proposed to print it in its entirety, if sufficient encouragement be forthcoming. Mr. Henslow would be glad, therefore, to receive the names, addresses, and number of copies desired by anyone who will favour him with a post-card to that effect, addressed to Drayton House, Ealing. It will form an 8vo volume of about 450 pages. The price will be moderate, but cannot be fixed as yet. As only a limited number of copies will be printed, as early a communication as possible is requested.

— THE annual meeting of the members of the DURHAM, NORTH-UMBERLAND, AND NEWCASTLE BOTANICAL AND HORTICULTURAL SOCIETY was held last week at the Alexandra Hotel, Clayton Street West, Newcastle. Councillor Thomas Gray was Chairman. The Secretary (Mr. Jas. J. Gillespie) read the sixtieth annual report, in which the Council state "that they cannot but regret that the year's proceedings have resulted in a considerable deficit, entirely due to the adverse weather which prevailed during the three days of the summer show, the gate money for which, as compared with last year, shows a falling-off of £202 6s. 1d. Commencing with a balance in hand of £57 9s. 7d., the year closes with a debt of £92 6s. 11d., or an excess of expenditure over income of £149 16s. 6d. The shows for 1885 have been fixed to be held as follows:—Spring Show in the Town Hall on April 15th and 16th, and the Summer Show on July 22nd, 23rd, and 24th. In conclusion the Committee would again urge the importance of a largely increased members' roll, and trust the best efforts of all interested in the Society's welfare will be devoted to this end." Alderman Joseph Cowen, M.P., was unanimously elected President, and the Mayor of Newcastle Vice-President for 1885; and the following retiring members of the Council were re-elected:—Messrs. R. Beail, W. Dinning, W. C. Forster, W. Magall, I. Nairn, A. Tindall, and W. J. Watson.

#### GUMMING ROSES.

I SHOULD think the Journal could hardly contain the indignant protests of lovers of the Rose at the bare thought of blooms being gummed and tricked out for show. It is degrading and deceitful, and is besides unnecessary. No Rose in proper condition requires such aid. Those who

cannot grow Roses properly should not attempt to show them by keeping the eye closed with gum. No doubt others may have more to say, and with more authority; for myself I should turn from a Rose so artificially treated as I would from a rouged cheek or a painted Lily.—A. M. B.

IN reply to the communication which you have received from Mr. Johnson, Hon. Secretary of the Leek Rose Society, and published on page 214, we are requested by the Committee of the National Rose Society to say that they, in their decision, expressed no opinion whatever upon the practice of gumming Rose blooms, there being no law which could guide them in the matter.

After taking all the circumstances of the particular case submitted to them into consideration they came to the conclusion that the exhibitor in question had infringed no existing regulation of either Society, and that the prize could not be withheld from him.

When the new bye-laws and regulations which the Committee have for some time past had under consideration, and which will be submitted to the Society at their next general meeting, are in print, it will be seen that the Committee of the National Rose Society discontinue the practice of tampering in any form or shape with Rose blooms intended for exhibition. At the same time they wish it to be clearly understood that in their opinion it is but very seldom indeed that any such practices are resorted to by exhibitors.—H. HONYWOOD D'OMBRAIN, EDWARD MAWLEY, *Hon. Secretaries.*

#### SWANMORE PARK.

DURING the last three years the name of Mr. E. Molyneux, gardener to W. H. Myers, Esq., has figured prominently in the reports of the Chrysanthemum Shows that have been held at Southampton, Winchester, and Kingston-on-Thames; indeed, his signal achievements have placed him in the very foremost position among growers of cut blooms of the commanding autumn flower. His great success, too, ought to be encouraging to others, especially young growers, as previous to 1880 he never grew any Chrysanthemums for exhibition, nor had he ever been engaged in a garden where any special attention was devoted to the plants. He is thus entirely a self-taught grower. His engagements near Liverpool enabled him to see the splendid flowers grown and exhibited there, and no doubt awakened a desire which grew into a determination to equal them, and he has succeeded.

He commenced showing at Southampton in the year named, winning the first prize in the premier class. In 1881 he was again the victor, also in the class for twelve. He also appeared at Kingston the same year, and was first with twelve incurved blooms in a splendid class of ten competitors. In 1882 he took the first prizes in every class in which he competed at Southampton, and this against first-class growers; indeed, of such high quality were his flowers that it was said in the report of the show in this Journal that "Mr. Molyneux must rank amongst the foremost growers of the day." That estimate was well founded, for in the following week he won (for the year) the second twenty-five-guinea challenge vase at Kingston against four other competitors, also the first prize for twelve incurved blooms, the first for six of any variety with superb examples of Princess of Wales, and the corresponding class in Japanese with the finest examples of Madame C. Audiguier that have ever been staged. These two stands have never been forgotten by those who saw them, and it was said of the exhibitor in the report of the Show that he would "prove a formidable adversary" in future. He did prove formidable, for he won all the first prizes for blooms at Southampton and Winchester last year, also the challenge cup at Kingston, thus securing it; also the first prize with twenty-four incurved blooms, first with twelve Japanese, first with twelve reflexed, first with twelve Anemones, and first in each case with the best six incurved and best six Japanese of any one variety in the Show. That is a wonderful record for a "self-taught" man. He has commenced this year by again "sweeping the board" at Southampton, securing all the first prizes, and in any other great contest in which he may enter it is not very probable that he will be outside the charmed circle of prizewinners. However, without forecasting the future, sufficient has been accomplished to invest Swanmore Park with a certain amount of interest, and there are many readers of the Journal who may naturally like to know "what kind of a place it is," and especially to hear "how the Chrysanthemums are grown."

Swanmore Park, then, is the residential estate of W. H. Myers, Esq., and is splendidly situated in Hampshire, two or three miles from Bishop's Waltham, a sleepy-looking little country town, of which the grand old abbey mantled with Ivy is the most commanding feature. It is a magnificent ruin—a great historical relic of bygone days. The mansion at Swanmore is modern, the substantial Gothic building only having been erected some half dozen years, and the pleasure grounds planted and the gardens made within that time. Considering that fact, no one can examine the mansion covered with climbers from base to roof and the well-furnished pleasure grounds without being impressed with the excellence of the work in every way, for it is only by the highest culture that so much could be effected in such little time, and a new place made to look very like an old one. There was, however, plenty of old timber to begin with, but the progress of ornamental trees, shrubs, and Conifers has been quite remarkable. This can only have been produced by much and well-applied labour, for the soil is naturally very far from genial, being in fact more like clay than anything else, and can only be worked for some considerable time after rain.

The site is elevated, being 450 feet above the level of the sea. For miles on every side a well-wooded and beautifully undulated country is



brought within the line of vision; the views are indeed superb, the air pure, the autumn foliage richly tinted, with on one side the Solent shimmering in the distance and the purple heights of the Isle of Wight meeting the horizon. Chrysanthemums, it has been said, flourish best in low situations where the air is damp and fogs prevalent. That at least is what persons in high and dry districts say is the reason why London and Liverpool growers succeed so well. If they could see the plants and blooms at Swanmore they would perhaps admit they can be grown on a hill as well as in a valley, and possibly colour better. They would certainly have to go far to see finer plants and better, and especially brighter, flowers, also to see a finer range of glass than that in which the plants are arranged.

The kitchen garden, a walled enclosure, is quite new—that is to say, about four years old. Across the north side is this range of houses, 222 feet long in seven divisions—three vineries, three plant houses, and a Peach house, the central house at right angles with and projecting beyond the range—designed and erected under the superintendence of Mr. Molyneux. The houses are 18 feet wide, the back wall 12 feet high, with a hip of about 3 feet sloping to the north, the long southern roof having an angle of about 40°. Ventilation is by screw and crank leverage, the heating complete and effectual, the pipes not crowded together along the front, but placed in lines about 4 feet apart over the surface of the borders. Large tanks are constructed in the houses with pipes for heating the water distinct from those heating the houses. This work was done by Mr. Bramham of Liverpool, and done well, the Allerton Priory boiler working most satisfactorily. The path is along the back a short distance from the wall, room being afforded for a row of Chrysanthemums, or anything else requiring 2 or 3 feet of space. The Vine and Peach borders are of course in the front, but the whole space is not occupied with them. It is not needed, for the Vines are as strong as Vines can well be, and a Nectarine tree in four years has covered a length of trellis of 20 feet. In the space next the path not occupied by the borders, a width of about 4 feet, Chrysanthemums are arranged. The plants being tall, this enables the blooms to be seen the better, though some nearly touch the glass; while the "Audiguier" along the back reach from the floor to the roof—12 feet. It is a grand promenade of Chrysanthemums. The centre house is entirely occupied with them, the plants sloping from 10 feet high at the back to 2 or 3 feet in the front—a bank of 18 or 20 feet deep and 8 or 9 feet wide. It has fallen to my lot to assist in adjudicating the prizes for the best groups of Chrysanthemums that have been arranged, but I have never seen a group like this for extent, variety, size, and brilliancy of flowers. It will be perceived, then, that the plants that produce the prizewinning blooms range from 2 or 3 feet to 12 feet high. This house represents a small forest of Chrysanthemums, for they are more like trees than plants, the stems of some of them being quite 3 inches in circumference. The only similar examples I have seen were at Calderstone, grown by Mr. Tunnington. They are clothed with thick leathery foliage from the surface of the pots—or, rather, were before arranged, the leaves in the centre of the group naturally collapsing, for the pots nearly touch each other, and light cannot penetrate such a thicket.

The plants are grown in pots varying from 6 inches to 9 inches in diameter. A few 10-inch pots are used, but these mostly contain two plants. The majority of the plants carry three blooms. "Three blooms on a plant 12 feet high!" does somebody exclaim? "what a waste of space! I should want twenty flowers at the least." And they might easily be had; but cut them and place them in the scale against the three, and they will probably be outweighed, while the three help to win a twenty-five-guinea cup, the twenty not sharing in winning more than a wooden spoon—for coming in last. The twenty ordinary flowers anyone may grow, the three prizewinners are masterpieces. There is a difference from a cultivator's point of view. Did the twenty-bloom advocates ever see a Chrysanthemum flower 7 inches deep? The probability is they never grew one half that depth, but there are (or were ten days ago) examples of Madame C. Audiguier that depth and more at Swanmore.

Did anyone ever see the new incurved Chrysanthemum Jeanne d'Arc 15 inches in circumference, and as solid and symmetrical as a flower can be? As only a comparatively few individuals can have the opportunity of inspecting that bloom, it is represented in fig. 73 with not a shade of exaggeration. Plenty of others, such as the Queen family, are larger, but the example of Jeanne d'Arc is presumably the finest example of the variety that has ever been produced, and Mr. Molyneux considers this the most distinct and promising of all the new incurved Chrysanthemums. Lord Wolseley and Lord Alcester he regards as great acquisitions, but he considers they do not stand out so distinctly in every way as does Jeanne d'Arc. There appears to be some doubt as to the origin of this variety. It was exhibited by Messrs. Jackson & Son at Kingston last year, and certificated, though the variety named Mdle. Madeline Tezier in the list of Mr. Davis of Camberwell is no doubt identical. Jeanne d'Arc (Lacroix) is described in Lacroix's catalogue in the list preceding the novelties of 1883, and was presumably sent out in 1882. Also among the novelties of 1882 in Bouchardat's catalogue is Mdle. Madeline Tezier (Reydellet)—but, this is a little confusing—Bouchardat also includes Jeanne d'Arc, described the same as in Lacroix's list—silvery white, reverse of petals lilac, while Mdle. Madeline Tezier is termed snow white. The former description applies to Jeanne d'Arc as certificated, and grown so well by Mr. Molyneux, and that must now be the accepted name. It is curious that in foliage, also in producing the blooms on large peduncles 6 or 7 inches above the leaves, Jeanne d'Arc is exactly like Fair Maid of Guernsey, and is the only incurved variety in which the latter character is so distinctly marked. It should be added

that Mr. Molyneux finds Jeanne d'Arc one of the "best doers," every stem supplying him with an exhibition bloom; but it is too early for this year's shows.

It is quite unnecessary to enumerate the varieties that are so prominent in the Swanmore collection, as their names will be taken from the prize stands somewhere or other, and published in the reports of shows.

Perhaps it may be well to say that Bendigo and Mabel Ward are identical with Mr. Molyneux. Of that there is not the slightest doubt. The first premature bloom from a very early bud may come with florets like the Princess of Wales or its sport Mrs. Heale, but that is quite accidental. An example is seen at Swanmore, and it shows the advisability of not hurrying a sport into the market or disappointment may follow. Some other varieties might be named, the earliest blooms of which are often quite out of character, but the variety is not changed for all that, as the progeny proves.

Many persons, no doubt, would like to know the details of Mr. Molyneux's culture. It is for him to supply them when he may find it convenient to do so; but generally it may be said his success is the result of constant watchfulness and unremitting attention, especially in watering, from the day the cuttings are inserted to that on which the flowers are cut. The cuttings are taken "as they can be had," and not "coddled" in heat at any time. The plants are grown without check throughout, none allowed to become rootbound in their early stages; each pot of the "six hundred" is rapped for determining the exact time for giving water, as if given when not needed or withheld when wanted injury is done that will show itself before the end of the season.

Most of the very large blooms are from "crown" buds, but many very fine, but a trifle later, are from terminals in this way the season is prolonged, and a number of fresh examples are at hand for the different shows. Several dwarf or cut back-plants bear fine blooms; but the largest are from the crown buds on 8 to 10 feet high plants.

In one of the houses two dozen plants are arranged grown by Miss Myers, who inserted the cuttings, potted and watered the plants throughout, no one else having touched them; and considering that they have had no liquid manure they are most creditable to the cultivator and decidedly better than many examples seen in gardens and conservatories. The plants grown by Mr. Molyneux obviously received liquid manure freely, or they could not be produced in such splendid condition.

The blooms also, or some of them, are dressed to take off their roughness. In this work Mr. Molyneux is also "self-taught," and is now a master in the art of showing them in the best condition. In the work in question he has the able assistance of his foreman and brother, Mr. N. Molyneux, who is not a youth but a skilled gardener seeking a responsible charge, and if it happens to be where Chrysanthemums are desired as fine as they can be grown he is the man to produce them.

But though these flowers are grown so well at Swanmore, everything else is equally well attended to—plants indoors, herbaceous plants in the borders, Grapes, hardy fruits, evergreens, Conifers, ornamental trees and shrubs, with vegetables, all affording evidence that nothing is neglected in the well-appointed, compact, and excellently managed garden.—J.

## ROYAL HORTICULTURAL SOCIETY.

NOVEMBER 11TH.

CHRYSANTHEMUMS were well represented at this meeting, and several very meritorious novelties were certificated. Messrs. J. Veitch & Sons, Messrs. Cannell & Sons, and Messrs. Laing & Co. had especially fine groups and collections of blooms.

FRUIT COMMITTEE.—Present: John Lee, Esq., in the chair; Dr. R. Hogg, and Messrs. Phillip Crowley, George Bunyard, S. Lyon, George Paul, G. T. Miles, James Smith, John Burnett, W. Denning, R. D. Blackmore, and W. Paul.

A seedling Pear was sent by Colonel Trevor Clarke, Welton Place, Daventry. It had a good deal of resemblance to Huyshe's Victoria in appearance. The flesh is coarse-grained and gritty, the juice sweet with a pleasant sub-acidity; but as there are so many varieties of superior excellence in use at the same time the Committee did not think it an improvement on others in cultivation. Messrs. Strachan & Evans of Wrexham sent two handsome Apples, which were Catshead and Alfriston. Mr. Valpy of Bina Gardens, South Kensington, sent a seedling Apple raised at Enborne Lodge, Newbury, said to be a good cooking variety, but the Committee did not think it an improvement on other varieties. Mr. Robert Doe, The Gardens, Rufford Abbey, Ollerton, sent a seedling Apple of Pearmain shape with a grass-green skin and an unusually yellow flesh, which was considered no improvement. A seedling Apple was received from Messrs. Rutley and Silverlock raised by Isaac Harrison, Esq., of Leicester, a very pretty Apple resembling Cox's Pomona, but with a very crisp and tender flesh, full of juice and with a peculiar aroma. The Committee requested to see it again in March, as it was represented to be a good keeper, lasting as long as July. Mr. Thomas Lockley, Brewood, Wolverhampton, sent a seedling cooking Apple, which was passed. Messrs. John Laing & Son of Forest Hill sent a seedling Apple, which was not of high merit. Mr. Piper of Ledbury sent a seedling Apple which was not considered of great merit. Mr. Burbridge of Westgate-on-Sea sent a seedling Apple with soft flesh and sweet flavour, but of no great merit. J. McIntosh, Esq. (Mr. Taylor, gardener), sent three handsome bunches of Mrs. Pearson Grape, for which a letter of thanks was awarded. Mr. Oxford, gardener to C. M. Shipley, Esq., Twyford Moors, Winchester, sent a stem of Brussels Sprouts.

FLORAL COMMITTEE.—Present: Section A, Messrs. James O'Brien, John Woodbridge, H. Herbst, H. Ballantine, J. Dominy, H. Williams, and E. Hill. Section B, Messrs. Shirley Hibberd, W. B. Kellock, H. Bennett, W. Bealby, G. F. Wilson, J. James, and G. Duffield. Messrs. H. Cannell & Sons, Swanley, exhibited six boxes of handsome Chrysanthemum blooms representing the sections, singles, Pompons, Anemones, incurved and Japanese, and



cluding a great number of novelties. Amongst the singles the most noteworthy varieties were Mary Anderson, bluish white, finely formed broad florets; W. H. Harris, bright yellow, large; Miss Rose, pale pink, very delicate and pretty. The Japanese were very bright and beautiful, the incurved were fine in substance and colour, and a box of reflexed varieties was very striking.

Messrs. J. Laing & Co., Forest Hill, had a pretty group of new Chrys-

anthemums, the blooms large and brightly coloured. Very fine were Carmen, Japanese, rich rosy crimson, flat florets; Prince of Orange, medium size bloom, bright yellow, with a tinge of red; Tubiflorum, Japanese, pale lilac, long tubular florets; Talfourd Salter, Japanese, medium size, flat florets, bright red, slight yellowish margin.

A vote of thanks was accorded to W. Lee, Esq., Downside, Leatherhead, for some beautiful Orchids, amongst which was a spike of the superb



Fig. 73.—CHRYSANTHEMUM JEANNE D'ARC.

themums, several of which were certificated. Of others that were particularly good the following deserve notice—Madame de Sevin, Japanese, flat or fluted florets, bright rosy red, white under surface; M. Henri Jacotot, Japanese, dark rich crimson, tipped yellow, flat or slightly fluted; Beauté des Jardins, Japanese, rich rose-crimson, fluted; La France, Japanese, flute or thread-like florets, orange red; Galathée, Japanese, pale rose, long narrow twisted florets; John Laing, Japanese, fluted and curved florets, deep red with a yellow tinge, free and good.

Messrs. J. Veitch & Sons, Chelsea, showed a fine group of new

Vanda Sanderiana with ten blooms and a bud. Oncidium incurvum was also noteworthy in addition to the white variety, which was certificated. A vote of thanks was also adjudged to Norman C. Cookson, Esq., Oakwood, Wylam-on-Tyne, for spikes of Calanthe Sedeni, a fine hybrid, which has been previously certificated. Messrs. J. Veitch & Sons sent some new and choice plants, and Messrs. C. Lee & Sons showed some ornamental Conifers including several variegated forms.

First-class certificates were awarded for the following:—

*Cattleya trophthalma* (Baron Schröder).—A hybrid between *Cattleya*



superba and *C. exoniensis*, with pale lilac sepals and petals; the lip extremely rich crimson. Very handsome.

*Oncidium incurvum album* (W. Lee, Esq., Downside).—A pure white variety of this distinct *Oncidium*, exactly resembling the type in the narrow twisted sepals and petals.

*Ipomœa Thomsoni* (Veitch).—An excellent form, with trifoliate leaves and pure white large abundant blooms.

*Viburnum Tinus aureo-marginatum* (C. Lee & Son).—A prettily variegated form of neat compact habit; the leaves narrow and distinctly margined with bright clear yellow.

*Cupressus Lawsoniana Fleeti* (G. Fleet, Uckfield).—A very distinct and beautiful variety in the way of *gracilis* in habit, but with an abundant silvery variegation at the base of the short branchlets, which gives the whole plant a fine glaucous appearance. It is one of the best varieties that has been yet obtained.

*Caragana angustifolia* (Veitch).—A Bromeliaceous plant, with tapering narrow leaves, yellow flowers, and bright coral red bracts; very graceful and attractive.

*Senecio pulcher* (Royal Horticultural Society).—Several plants of this handsome and now well-known species were exhibited from Chiswick, the rich purple flower-heads being of great size.

*Chrysanthemum Criterion* (Veitch).—A well-known Japanese variety; very large, the florets flat or tubular, orange-yellow; handsome.

*Chrysanthemum roseum pictum* (Veitch).—Japanese; bright rose, crimson, flat florets; full and substantial.

*Chrysanthemum La Bien Aimée* (Cannell).—Japanese; white, the lower florets with a tinge of purple, something in the way of *Mdlle. Lacroix*, the florets fluted and irregularly cut at the tips.

*Chrysanthemum Cullingfordi* (Cannell).—A most handsome variety with broad flat florets, intensely rich dark crimson, the under side bronze-tinted; full, fine, and of good form; a large reflexed variety.

*Chrysanthemum Star of Whyke* (Cannell).—A large Pompon, pure white; fine and good.

*Chrysanthemum Anais* (Laing).—Pompon. Small bloom, narrow cut florets, pale yellow, with a pink tinge.

*Chrysanthemum La Pureté* (Laing).—Japanese. Very long flat pure white florets, large blooms; free and handsome.

*Zonal Pelargonium Le Cygne* (Cannell).—A double white variety with well-formed blooms, fine truss, good habit.

SCIENTIFIC COMMITTEE.—Mr. Loder in the chair.

*Weevils Attacking Orchids*.—Mr. Pascoe exhibited specimens of *Acythopeus*, n.sp., from Borneo and elsewhere in East Indies, imported with the Orchids which they attacked.

*Orchids, Photograph of*.—Mr. Smee exhibited photographs of Orchids as growing during the summer out of doors. They were taken into the house in October. Several had flowered during the three months they were out.

*Knot in Birch*.—Mr. McLachlan showed solid woody knots, apparently embryo buds of 1 to 1½ inch in diameter.

*Cockroaches in the Palm Stove*.—He also showed specimens of *Periplaneta americana* occurring at Kew, received from Mr. Dyer.

*Masdevallia Leaves Diseased*.—Mr. Smith showed specimens badly infested with *Protomyces concomitans* growing in the intercellular spaces. Mr. Boscawen thought it might have been attacked by a thrips. Mr. Smith had not observed any. Mr. McLachlan remarked that Portschinsky said that thrips only attacked unhealthy plants, but could not assent to the statement.

*Lilium auratum Bulbiferous*.—Mr. Wilson brought stems of this Lily provided with aerial bulbs like the bulbiferous section. He remarked that *L. longifolium* often bears them. He stated that the frosts of April cut down the young stems of *L. speciosum*, but the bulbs left in the ground appeared to be larger, with bulbils also in some cases, notwithstanding the foliage being unformed.

*Diseased Pear Stems*.—Mr. Murray reported on these, and said that though some fungus was present he could not account for the injury. He thought younger specimens might be studied with advantage.

*Experiments at Chiswick to Test the Jensenian Moulding of Potatoes*.—The report was sent by Dr. M. T. Masters, embodying the results of experiments carried out under the superintendence of the Sub-Committee. The chief conclusions arrived at were as follows:—1, Earthing up increases the period of vegetation and amount of produce; "except in one instance (whole tubers, bent tops, Adirondack) the produce of the sections earthed up for the longest period is markedly in excess of that yielded by the sections earthed up for the shortest time." It may be also observed that tubers not earthed up at all (control rows) yielded the largest quantity, but the worst in quality and most liable to disease. 2, Bending the haulm reduces the produce, but conclusions from these experiments cannot be accurately deduced, "nor is it practicable to dissociate the effects of the bending from those of earthing up." [Mr. Plowright observes that bending should not be done while the Potatoes are in blossom, but before July 15th and after 23rd no deterioration of the tubers occurred in experiments in Holland.—*Gardeners' Chronicle*, April, 1884.] Moreover, the bending the tops is practically almost impossible from the quantity of foliage and the quick recovery of position. 3, The effect of cutting the tubers is shown in a marked deficiency of produce compared with the result from using whole tubers, there being a difference of about 10 lbs. in favour of whole tubers of Recorder and of 12 lbs. in the case of Adirondack. 4, Amount of disease. So trifling has been the attacks of *Peronospora* that, as far as any results could be obtained to test the Jensenian method of moulding, they are practically nil. Many Potatoes were, however, characterised by reddish spots dispersed through the tuber, the cause of which is at present inexplicable. Tubers thus affected are called "suspects" in the report. The true Potato disease was almost exclusively confined to Recorder, and to tubers earthed up a proportionately short time. In the control rows, however, both varieties were affected. It was moved by Mr. Grote and seconded by the Hon. and Rev. Mr. Boscawen, that the same Sub-Committee be instructed to carry out a repetition of the experiments at Chiswick in 1885 to test the Jensenian method of protecting Potatoes from the attacks of *Phytophthora*.

*Potato Diseases*.—A communication was read from Mr. Plowright,

which the following is an abstract. The chief diseased conditions are:—A, Diseased conditions arising from causes affecting the growth of the plant itself: (1) green tubers, (2) hollow tubers, (3) supertuberation. B, Diseased conditions arising from causes external to the plant: (1) the "Potato disease" (*Phytophthora infestans*), (2) wet rot (*Bacillus amylobacter*, *Van Leigh*), (3) dry rot, (4) scab, (5) spotting or mottling. Passing over A (1) as unimportant, the author observes that hollow tubers are a reversion to the normal state of aerial stems. The cells bordering the cavity have no starch, and are suberised. Tubers diseased by *Phytophthora* are characterised by being first affected on the surface, as Kilm pointed out in 1859, as the zoospores attack it through the epidermis. The author quotes the view that the mycelium penetrates the tuber by the haulm, a view held in this country but not on the continent, and he remarks that the former view is proved by experiments, whereas the latter has not been experimentally tested, except that when cotton wool is wrapped round a portion of the stem, and all the rest artificially infected with the disease, the protected part alone remains entirely free from mycelium. The deep brown and opaque places, are not diffused but harder and drier than the rest. The cultivation of the fungus is easy, but it soon loses the power to produce conidia. The browning appears in two days at a temperature of 75°, but after longer periods with lower temperatures. *Wet Rot*.—Potatoes diseased with this decay in pits and in ground. It is caused by *Bacillus amylobacter*. This microbe attacks the cell-walls. It is very infectious. To cultivate *Phytophthora* without the *Bacillus* it is necessary to desiccate the slices charged with the former, as the latter then dies, or is quiescent. *Dry Rot*.—This occurred to a great extent in Germany in 1830, and has been common there ever since 1842. The Potato is "dead-looking," and has brownish or bluish spots within—in old stages the interior is a mass of yellowish white and friable substance. It has not been noticed to any extent in England. *Scab*.—This is unimportant. The cause appears to be unknown; but the author is inclined to think it is an effort to form cork to prevent the entrance of fungi.

*Spotted and Mottled Tubers*.—These spots differ from those due to *Phytophthora*—1, being inside the tubers; 2, they are neither so opaque nor so dry nor deep in colour. No trace of a mycelium was to be found, and no conidia could be obtained by cultivation by De Bary, Rostrap, Jensen, Plowright, Murray, or Henslow. Mr. Jensen suggested it might be an incipient stage of dry rot, but Kilm negatives this view. Mr. Plowright adds that a crop was unsaleable this season, as it cannot be foretold how many tubers may not be attacked. Mr. Plowright also forwarded specimens of tubers—1, diseased by *Phytophthora* through the epidermis; 2, mottled; 3, wet rot as it occurs naturally with *Phytophthora*; and 4, artificially induced on sound tubers; 5, *Spicaria Solani*; 6, *Acrostalagmus cinnabarinus*. He also sent copies of Rencke and Berthhold's figures of *Bacteria*, showing starch grains in the process of dissolution of *Bacillus Amylobacter*. With reference to Mr. Plowright's statement that mycelium was not found in the part protected by cotton wool, Mr. W. G. Smith reported that he had carefully examined the experimental specimens forwarded to the last meeting, and had found mycelium throughout the stem, quite as much under the wool as elsewhere. Mr. Plowright alluded to Mr. Murray's experience in getting the mycelium to penetrate the tough skin of Champions as corroborating De Bary's statement. Mr. Murray said that it was only in the case of about three or four tubers out of 100 that succeeded, but that he had repeatedly traced the mycelium down the haulm along the subterranean branches and into the tubers.

*Potato Sclerotia*.—Mr. W. G. Smith had carefully isolated these bodies on a slide, and treated them with nitric acid, which destroyed a coat of calcium oxalate, and revealed an oval plasmic body exactly as Mr. Wilson has done, as reported below. He had found similar bodies with *P. Schleideniana* in Onions and *P. nivea* in Parsley. Mr. Murray said he had found similar bodies in perfectly healthy plants, and suggested that Mr. Wilson should repeat his experiments, and that he would test Mr. Wilson's. Mr. Bennett raised the question whether malate of lime might not be present, as malic acid was particularly abundant in vegetables.

*The Potato Disease*.—A communication was read from Mr. A. Stephen Wilson on the so-called sclerotia found in the foliage of Potatoes. After referring to the history of them, and to the negative results of Mr. Murray and Dr. Flight, who regarded them as calcium oxalate, and not living bodies, he considers those observers as acting under a misconception, in that they attempted to make a parasite grow in dead matter. Hence Mr. Wilson traced the results of "myceliation" while the tissue was living, and found that the granules of the spherical bodies contained within the coating of lime threw up a complete crop of *Peronospora* in a night's time. He gives a description of his experiments with nitric acid, which, by careful application, dissolves the lime but leaves a pellucid ball of granular plasm behind. "This is everywhere permeated by sporeidic granules, some of a round form, others of an oblong form, like short pieces of excessively delicate mycelium. The whole has a soft hue, like fine pencilling, and the outline is in most places perfectly definitive, with here and there a break, as if part of the material has flowed out at the side." . . . "A conidium of *P. infestans* is about half the size of one of these bodies, and the contents of the conidium are optically very similar to those of the sclerotium as seen after being divested of its calcareous coating, and both equally give rise to mycelium."

The author then gives measurements, and observes that other plasmodiating fungi are coated with lime as some of the *Myxomycetes*.

*Sparmannia and Hoya Roots Clubbing*.—Mr. Plowright sent specimens which were referred to Mr. Smith and Mr. McLachlan for examination and report.

## HARDY PLANTS AT CAMBRIDGE.

### THE BOG GARDEN.

I CHANCED to call at the Cambridge Botanic Gardens on one of those hot sultry days which have made the past summer conspicuous, and having found the Curator, Mr. Lynch, under whose energetic direction the gardens have attained such a high state of practical and scientific efficiency, we began to examine the many interesting features which are here to be met with. It took but a moment's thought to decide that to visit the plant houses first would only add to car discomfort, so we wended our way to the bog garden,



which proved among the most interesting features of my visit. It is an addition to the Gardens, owing its origin to Mr. Lynch. It is close to the lake, and is supplied from the same source. The situation has evidently been selected with great care, the same having been duly exercised with regard to its construction and general arrangement, so as to accommodate as great a variety of plants as possible which are known to delight in such places, together with affording ample room for experimenting with those whose requirements are to some extent doubtful. Of aquatics proper, *Houttynia cordata*, with numerous white flowers, was represented by fine patches. *Orontium aquaticum*, or the Golden Club, was past flowering, though strong and vigorous. For some time this was considered tender, and was usually fully immersed during winter, though now generally considered sufficiently hardy to stand our severest winters. It is not a common plant, and we only meet it in really good collections. Next one catches sight of the double-flowered Arrowhead, *Sagittaria sagittifolia* fl.-pl., certainly one of the best and most ornamental of summer-flowering aquatics. It has large double white Balsam-like flowers, which last a considerable time. It delights in deep water, and can never be had in too great a quantity anywhere. The Water Soldier, *Stratiotes aloides*, was floating just beneath the surface, and seemingly at home. Many have experienced difficulty in growing this plant, but there is none provided it is allowed to ramble at will and not fixed in any particular spot with soil about its base, which latter it has a strong objection to. Then we had occasion to gaze for some moments on the spreading masses of leaves of *Nymphaea candidissima*, with its huge blossoms of the purest white freely dispersed amidst its abundant foliage, which completely covered the surface of the water. This is a far superior plant to the well-known *N. alba*. Both, however, are deserving of cultivation, being so well adapted for planting in deep water, and guaranteeing an annual display of flowers. *Pontederia cordata* is a suitable occupant for shallow water, of distinct habit and blue flowers. It is a North American species, and was unique until the opening of the present century. Beside many others both in deep and shallow water bearing sure evidences of enjoyment, there are a great number of plants delighting in moisture, which are so placed that their roots touch the water at high-water mark, a fact which illustrates the efficiency of the arrangement, since it is next to impossible that they can be submerged, thus forming a natural bog. Situate thus we find the Cork-screw Rush, *Juncus effusus spiralis*, doing well; also *Scirpus tabernaemontana* var. *zebrina*—the latter most ornamental, hardly perhaps in its proper place, seeing that it is insufficiently strong to support its long Rush-like leaves, which invariably bend and break. It will need support in the shape of some thin galvanised wire. It is growing remarkably free, and making fine growth.

*Iris ochroleuca* was somewhat nearer the water's edge, and had made a fine clump. There was also a fine clump of *Saxifraga peltata* remarkable for its bulk, and the foliage alike remarkable for its small size; so much so as to make one think of its being quite distinct from the typical species. The rhizomes were large and vigorous-looking, the stems upwards of 2 feet high, and withal the leaves individually were scarcely one-half the size usually seen. Similarly placed was the Skunkweed *Symplocarpus* (*Pothos*) *foetidus*, a curious plant of no great merit; and in luxuriance was the Sensitive Fern, *Onclea sensibilis*. These, like the *Osmundas*, delight in marshy ground and always make telling plants. A distinct plant was next seen in *Justicia pedunculosa*, said to be the only hardy *Acanthad* (though, I believe, *J. humilis* inhabits part of the same territory), is a distinct plant with white purple-lilac-spotted flowers, *J. humilis* having white flowers, both North American species. Several species of *Primula* are also being tried near the water. Among these are *P. rosea*, *P. cashmiriana*, and *P. Florkiana*. These are all remarkable for their vigour, while the same may be said of *Primula Munroi* syn. *involucrata*. It is doubtful, however, whether this last-named will survive our severe winters so placed, as it is almost always growing, and may become a victim to damp. In shady moist positions this species usually assumes a vigorous habit, and delights in abundance of water in the growing season, and as a rule adapts itself to a great variety of soils. If it proves quite hardy and damp-resisting near the water it will have still further claims upon our notice. Evidently happy at home, forming a dense carpet on the surface, was *Mazus pumila*, a little New Zealander, with pale violet flowers with white centres. Though not a showy plant it is interesting and adapted to a variety of situations; such, for example, as the dry surface of a bed beneath trees or fully exposed, while in the present instance we find it clothing a little slope on the margin of a bog. *Selleria radicans* was growing freely, though it cannot be considered quite hardy. Among other plants worthy of note near the water were *Gunnera marylandica*, *Carex acuta*, *Cyperus longus*—the two latter well worth the attention of the floral decorator, owing to their extremely graceful habit. Of the former there is a good variegated form equalling in grace *Eulalia japonica argentea* fol. var. The latter is one of the most ornamental of the genus *Cyperus*. It is remarkable for its grace, and is well adapted for isolated positions near the water. A fine bush, some 4 feet or 5 feet through, of this on the margin of the lake was quite a feature in itself.

At the southern end of the bog garden a portion is devoted to various plants which in their native home inhabit shady woods. To meet the requirements of these a bank has been selected, the summit of which is topped with various trees, which afford the requisite shade, the bank taking a semi-circular direction, being thickly strewn with the root-stumps of trees. As far as was necessary peat soil has been scattered over these stools, thus filling up the crevices, which form natural pockets or receptacles for the plants, and many are now fairly established. The best of these are *Linnæa borealis*, *Ourisia coccinea* growing vigorously in peat and shade. This is one of the most difficult of alpinæ, and all who would have it in perfection must give it a place similar to *Erpetion reniforme*, for where one grows well the other will. I also noted *Soldanella montana* and *S. minima*. What charming little things are these when seen in nice clumps! *Lycopodium clavatum* and *alpinum*, *Adiantum pedatum*, the Canadian Maidenhair, *Primula farinosa*, *P. cortusoides* (true), also *Orchis maculata*, and others in colonies; *Cypripedium spectabile*, *C. calceolus*, and others. Here also the rarely seen *Mutisia decurrens* has found a home, and it is to be hoped will succeed. It has, however, only been recently planted, and has not yet flowered. It is, however, among the showiest and rarest of summer-flowering climbers, having orange-coloured flowers from 3 to 4 inches across, which are very effective and freely produced upon established plants. The finest plants I

have seen of this grew some 8 feet high, trained against the wall of an Orchid house, and it was planted in peat and loam, throwing up radical growths annually. To accommodate such plants as *Pinguiculas*, *Sarracénias*, *Droseras*, *Narthecium ossifragum*, several species of *Parnassia*, and others of like taste, a margin next the grass had been left about a foot wide, and which may be saturated at will, and being thus cared for were doing well. One of the most remarkable plants to be seen here was a species of *Primula* from India, which has not yet flowered. We have some very fine species of Indian Primroses possessing vigorous habit, but which are reduced to mere pigmies when compared with this plant, which is of gigantic proportions, its leaves from 5 to 5½ inches wide and 17 inches long, the upper surface shining, the margins deeply toothed and somewhat undulate. Be it what it may, it is a distinct plant, and its flowering will be looked forward to with interest. Various species of Bamboos are doing well, together with *Thamnocalmus Falconeri* and *T. spathifolius*. These are 12 feet and 11 feet high respectively, and are seedlings from those which flowered some few years ago in many parts of England; and, lastly, I note the very rare *Iris lacustris*, which is here a nice tuft. Before bidding farewell to the bog garden and its occupants I might add that grouping is being to some extent adhered to, and with good effect. The general character of the position, with its construction, all have a very natural tendency, and it is not too much to say that it is one of the most interesting departments in these gardens.—E. J.

(To be continued.)

### CHRYSANTHEMUM SHOWS.

OWING to the great number of shows occurring at the same time it is difficult to obtain reports of all, and the demands upon our space necessitate brevity in each case. In consequence we can only indicate the chief features and leading stands at the respective exhibitions.

#### STOKE NEWINGTON—NOVEMBER 10TH AND 11TH.

This old-established Society held on Monday and Tuesday last the most extensive and successful Show they have had for some years. The cut blooms were remarkably good throughout, even, substantial, clean, and thoroughly satisfactory, the competition being unusually keen in all the principal classes. The plants were excellent, particularly those staged by Mr. Monk, which were in even better condition than those usually shown by this skilful grower. The Assembly Room at Defoe Road, where the Exhibition was held, was filled with the contributions of the numerous competitors, the plants being arranged near the walls of the building, and the cut blooms occupied a broad table in the centre of the hall, upon which were four parallel lines of stands. A fine group of Ferns, Palms, and miscellaneous foliage plants at the farther end of the hall added greatly to the effect, and the Show must be pronounced an excellent one in all respects, most creditable to all concerned, and the courteous Secretary, Mr. Goldsmith, deserves the greatest praise for the manner in which he conducts the affairs of the Society.

*Cut Blooms.*—The display of cut blooms was a very fine one, but the best examples were those in the open classes. In this section the chief interest attached to the twenty-four incurved blooms, which were wonderfully fine. Premier honours were most deservedly won by Mr. J. Udale, The Gardens, Shirecliffe Hall, Sheffield, whose blooms were in splendid condition—massive, even, clean, and admirably finished. So fine were they that the additional and much-valued honour of the silver cup for the best stand of blooms in the Show was awarded for them. This is the third season Mr. Udale has exhibited at Stoke Newington, each time gaining a higher position; and his success this time was so well merited that it gave general satisfaction. The varieties were as follows:—Back row—Alfred Salter, White Princess, John Salter, Golden Empress, Mrs. Heale, Princess of Wales, Golden Queen of England, Queen of England; second row—Empress of India, Refulgence, Isabella Bott, Prince Alfred, Empress Eugénie, Golden Beverley, Beauty, Lord Alcester; front row—Nil Desperandum, Jardin des Plantes, Plenipo, Mrs. Rundle, Mrs. Dixon, Beverley, Barbara, Lady Hardinge. The second prize was adjudged to Mr. Monk for smaller blooms, and Mr. Calvert was third with even but comparatively small samples.

For twelve incurved blooms Mr. Calvert, gardener to G. Kent, Esq., Southwood, won first with very handsome blooms, his back row of Queen of England, Empress of India, Alfred Salter, and Golden Empress of India being grand. The others were Refulgence, Empress Eugénie, White Beverley, Hero of Stoke Newington, Mabel Ward, John Salter, Golden John Salter, and Nil Desperandum. Mr. J. Udale was a close second, his blooms being very good in substance, neat, and even. Mr. Chalkley, gardener to J. R. Droop, Esq., Stamford Hill, was third with smaller and less regular examples.

In the local classes the competition was keen. With twenty-four incurved blooms Mr. Langdon, gardener to Messrs. Monroe & Morris, Brook House, Clapton, won first with large even specimens of the following:—Empress of India, Golden Queen of England, John Salter, Princess Teck, Guernsey Nugget, Alfred Salter, Princess of Wales, and Golden Empress of India. Second row.—Lady Hardinge, Mr. Brunlees, Queen of England, Venus, Prince of Wales, White Beverley, Mr. Bunn, and Nil Desperandum. Front row.—Cherub, Mabel Ward, Baron Beust, Mrs. George Rundell, Golden George Glenny, Golden Eagle, White Venus, and Barbara. An equal first prize was awarded to Mr. Gilbey, gardener to B. Booth, Esq., The Cazenoves, Upper Clapton, for similarly fine blooms of the following:—Back row.—Golden Empress, Princess of Wales, Golden Beverley, White Beverley, Hero of Stoke Newington, Guernsey Nugget, John Salter, Empress of India. Second row.—Mr. Brunlees, Mr. Bunn, Prince of Wales, Princess Teck, Nil Desperandum, Lady Hardinge, Mrs. Heale, Cherub, Enamel, George Glenny, Princess Beatrice, Golden Eagle, Isabella Bott, Lord Stanley, Lady Slade, and Mabel Ward. Mr. Payne, gardener to G. Paine, Esq., Cedar House, Stamford Hill, was third with small blooms. There was a good show of twelve incurved, the prizetakers being Mr. Martini, gardener to H. Matthew, Esq., The Cedars, Woodberry Down; Mr. Cooper, gardener to J. Johnson, Esq., Elm Field,



Upper Clapton; and Mr. Smith, gardener to S. Gardner, Esq., Spring Hill, Upper Clapton. Mr. Lingdon had the best six incurved large blooms of Golden Empress of India, Empress of India, Princess of Wales, Princess Teck, John Salter, and Nil Desperandum, Mr. Cooper and Mr. Payne following.

In the amateurs' class for twelve incurved blooms there were six entries, Mr. F. Bingham, 22, Manor Road, Stoke Newington, having the best stand, the others being mostly small. Ten lots of six blooms were staged, Mr. Bingham being again first with neat blooms, much superior to the others.

Japanese were not so largely shown, but the blooms were fine, and Mr. Calvert was first with twelve varieties, staging grand examples of those undermentioned. Back row.—Triomphe de la Rue des Chatelets, Fair Maid of Guernsey, Madame C. Audiguier, Peter the Great. Second row.—Mr. Barnes, Cry Kang, Soleil Levant, Le Cluners. Front row.—Père Delaux, Sarnia, La Rouge, Elaine; Mr. Gilbey and Mr. Monk, gardener to W. Fowler, Esq., Forest House, Leytonstone, following with rougher but bright examples. Mr. Goldsmith, Grove Road, Stamford Hill, had the best six Japanese, a pretty and neat stand of Oracle, Comte de Germiny, Cossack, Fair Maid of Guernsey, Lady Selborne, and Roseum Striatum, all bright, fresh, and good. Some attractive stands of Anemones and single varieties were also staged and attracted much admiration.

*Plants.*—With nine plants Mr. Monk, gardener to W. Fowler, Esq., Forest House, Leytonstone, was awarded first honours for excellent pyramidal and half-globular specimens, 3 to 4 feet high, and splendidly flowered. A plant of Dr. Sharpe, with about 150 flowers, was especially notable, the colour rich, and the blooms large. La Charmeuse was similarly fine; other good plants being La Nympe, Mrs. George Rundell, Sœur Melanie, To Kio, and Mons. Charles Hubert, the worst plant being Peter the Great. With six and four plants Mr. Monk was also first, showing neat specimens about 3 feet high and well flowered. For four standards Mr. Monk was also first with beautiful specimens, having heads about 3 feet diameter, even, conical form, well-flowered, blooms large and substantial. The varieties were Mr. G. Rundle, Gloire de Toulouse, George Glenney, and Mons. Charles Hubert. Mr. Gilbey secured the first place with four standard Pompons, showing White Cedo Nulli, Sœur Melanie, Antonius, and Aurora Borealis, beautifully flowered. He was closely followed by Mr. Payne, who had the Anemones Marie Stuart and Antonius particularly good. Several miscellaneous exhibits also added to the interest of the Show.

#### PUTNEY.—NOVEMBER 11TH.

THE seventh annual Exhibition of the Putney Society was held in the Assembly Rooms, Putney, and was unanimously pronounced to be one of the best yet held both in the number and quality of the exhibits. So numerous were the plants, groups, and cut blooms that much difficulty was experienced in finding room for them, and it is unfortunate that the Society cannot procure a more commodious hall in which the exhibitors could stage their productions to better advantage. However, the utmost is made of the space at command, and under the management of the able and experienced Secretary, Mr. J. Moore, a most attractive display was produced.

The great feature at the Putney Show is invariably formed by the groups of Chrysanthemums arranged for effect, and at the Show now being noted these were even better than usual. Unquestionably the group for which the first prize was awarded—namely, that from Mr. E. W. Knowles, gardener to G. M. Allender, Esq., Putney Park, was one of the best that has been exhibited for many years. The blooms were of wonderful size, good substance, fresh and bright in colour, and the plants also were thoroughly healthy and well clothed with foliage. The front-row plants were dwarf, 2 to 3 feet high, and the general arrangement of the colours for contrast or harmony of effect was all that could be desired. Mr. Knowles well deserved the honour he won, and if other societies would encourage groups of this character they would add greatly to the attractions of their shows; the second prize was adjudged to Mr. A. Newell, Fairlawn Gardens, Parkside, who also had some fine blooms, but the group was scarcely so well finished. Mr. J. Carter, gardener to H. J. Parry, Esq., Heathside, Wimbledon Common, had a less even but good group, and Mr. G. Stevens, Putney, was fourth; the great defect in his group being the tall plants in the front, which permitted all the pots and stems being seen, otherwise the blooms were of a quality which deserved a better position, and there was a good proportion of light and dark flowers.

In the other classes for specimen Chrysanthemum plants the principal prizetakers were Mr. Charles Bentley, gardener to J. C. Baring, Esq., M.P., The Cedars, Roehampton, and Mr. J. Bentley, gardener to Sir Thos. Gabriel, Bart., Edgumbe Place, Wimbledon Park, and Mr. Fyfe; but there was much disparity in the merits of the exhibits, and taking them generally there was much room for improvement.

Cut blooms were remarkably good in all the classes, and the competition was in some cases so keen that the position of the exhibitors was determined by two or three points. There were from four to eight entries in all the principal classes, and many fine blooms had to be passed without award. This portion of the Show was indeed highly satisfactory, and the exhibitors deserve much commendation. The stands of twenty-four incurved blooms comprised some very handsome specimens, Mr. M. Sullivan, gardener to G. B. Chapman, Esq., Downshire House, Roehampton, leading with substantial even blooms of the best varieties, and well arranged. The second place was gained by Mr. A. Holmes, gardener to A. B. Hill, Esq., Clapham Park, who had blooms very few points behind the others, Mr. J. Bentley being a good third. With twelve incurved Mr. W. Smith, gardener to J. F. Schwann, Esq., Oakfield, Wimbledon Park, won premier honours, showing very even blooms, slightly more substantial than the second stand, but in other respects not much superior to it. The varieties were Prince of Wales, Princess of Wales, Lord Wolseley, Mr. Bunn, Jardin des Plantes, John Salter, Prince Alfred, Nil Desperandum, Refulgence, Mrs. Haliburton, Venus, and Mrs. G. Rundle. Messrs. C. Bentley and J. C. Grant, gardener to J. Brunlees, Esq., Argyle Lodge, Wimbledon Common, were second and third respectively, both staging well in a large class. Messrs. J. Bennett, J. Bentley, and J. C. Grant were the prizetakers with six incurved blooms, all neat even collections.

The mixed class for four Japanese, four incurved, and four Anemones,

made a pretty display, the bright colours of the first named serving to relieve the lighter tints of the two others. Mr. G. Hunt, gardener to B. Gray, Esq., Westcombe Lodge, Wimbledon, was first with very fine blooms, the best in each row being respectively M. Delaux in the Japanese, Lady Margaret in the Anemones, and Prince Alfred in the incurved. Messrs. J. Bennett and M. Sullivan followed closely. Several fine collections of Japanese were staged in the class for twelve blooms, but Mr. W. Smith was well ahead with substantial and richly coloured blooms, very telling being F. H. Davis, or J. Delaux as it was staged by several other exhibitors. Mrs. Mahood, Cry Kang, Middle Lacroix, and a variety named Val d'Andorre were particularly notable, and several other good blooms of new varieties were included in this stand. Anemones were well shown by Mr. M. Sullivan, who had the best six blooms, Fabias de Maderanaz, Minnie Chaté, Gluck, and Marguerite d'Anjou being remarkably fine. Messrs. C. Bentley and J. Bennett also exhibited good blooms. The most meritorious stand of twelve Pompons was that from Mr. J. Moore, Richmond Nursery, Putney, who was awarded the first prize in that class. His blooms were large, bright in colour, and included several novelties.

Miscellaneous plants were not very largely represented, but they were all of good quality and some were exceptionally well grown. In the class for a group arranged for effect Mr. C. Bentley secured premier honours with a tasteful combination of Palms, Dracænas, Crotons, and Ferns, with numerous Eucharises and Calanthes, which imparted much gracefulness to the collection. Mr. J. Moore took the second place with a smaller but freely arranged and charming group, in which Heaths, Epiphyllums, and Primulas predominated, with a suitable proportion of fine-foliage plants. This was a very light and pleasing group, and in the style that requires to be most encouraged. Several other pretty groups were shown, their only fault being a tendency towards too much formality.

Fruit was scarce, there being only three entries of Apples and Pears, and these were mostly small. Grapes were not of remarkable quality either; but Mr. R. Holmes, gardener to T. Wallis, Esq., Sister House, Clapham Common, was first in the black Grape class with fine bunches of Alicante well coloured and with good berries, being followed by A. Richardson, Esq., and Mr. G. M. Knowles. Vegetables were exceedingly even and commendable, especially the premier collection from Mr. Coombs, gardener to Sir H. Meux, Bart., Sheen House, which comprised Cauliflowers, Celery, Mushrooms, Hathaway's Excelsior Tomatoes, Potatoes, and French Beans.

The weather proved very fine, and a large number of visitors assembled during the afternoon and evening.

#### CROYDON.—NOVEMBER 11TH AND 12TH.

THE eighth annual Exhibition of Chrysanthemums and other plants was held in the small Public Hall, Croydon, on the dates mentioned, and it is satisfactory to note that both the quantity and quality of the exhibits were an improvement on those of former years. The competition throughout was remarkably keen, with the exception of the class provided for a group of Chrysanthemums arranged for effect; this was open to district nurserymen only, and but one entry was received, that of Mr. W. Curd, Addiscombe. The group arranged was a remarkably handsome one, and the first prize was deservedly awarded to it. In the corresponding class for amateurs the first prize was awarded to Mr. Bowman, London Road, Croydon, for a very attractive group; Messrs. J. Cook, gardener to J. Eyekill, Esq., Duppas Hill, and H. Reed, The Villa, London Road, taking second and third prizes with meritorious exhibits. Messrs. Cook, Bowman, and Roffey, gardener to Mrs. Howes, The Waldrons, were to the fore with specimen plants, which were, however, not of superior quality.

The open classes for cut blooms were well filled; but Mr. Gibson, gardener to E. Wormald, Esq., Morden Park, easily secured the silver cup given as the premier prize both with incurved and Japanese flowers. In the class for incurved flowers he showed very fine blooms of the following:—Princess of Wales, Golden Queen, Alfred Salter, Lord Alcester, Empress of India, John Salter, Golden Empress, Queen of England, Baron Beust, Cherub, Princess of Teck, Venus, Hero of Stoke Newington, Lady Hardinge, Refulgence, Mrs. G. Glenney, Lady Slade, Mrs. Rundle, Barbara, Mrs. Dixon, Mrs. W. Shipman, Eve, Princess Beatrice, and Golden Eagle. Mr. H. Alderman, gardener, Morden Hall, was placed second, and Mr. Holmes, gardener to G. M. Storey, Esq., Nightingale Lodge, Balham, third. Mr. Gibson's stand of Japanese blooms consisted of F. A. Davis (J. Delaux), Comte de Germiny, Middle Lacroix, Baronne de Prailly, Fair Maid of Guernsey, Madame C. Audiguier, Grandiflorum, Album Plenum, Hiver Fleuri, Sarnia, Criterion, Elaine, L'Incomparable, Comtesse de Beauregard, La Nympe, The Damio, Thunberg, Père Delaux, Fulton, Fulgore, M. Ardene, Garnet, Bismarck, and Alba striata. Mr. H. Alderman was again second, and Mr. A. Alderman, gardener to C. Czarnikow, Esq., Mitcham, third; several other collections being shown.

The classes for cut blooms, confined to exhibitors residing within a radius of four miles of the Town Hall, were also well filled. Mr. Sadler, gardener to C. Lambert, Esq., Leigham Court Road, Streatham, was awarded first prize with the following—Guernsey Nugget, Fingal, Prince Alfred, Golden Empress, Empress of India, Prince of Wales, Jardin des Plantes, Mrs. Haliburton, Hero of Stoke Newington, St. Patrick, White Beverley, John Salter, Princess of Wales, Mr. Bunn, Princess of Teck, Mr. Corbay, Barbara, Aregina, Lady Hardinge, Mabel Ward, Nil Desperandum, Lady Talfourd, Lady Slade, and Mrs. Dixon. Mr. Johnson, gardener to W. C. Straker, Esq., Rawley, was a meritorious second, and Mr. Rodbourn, gardener, Coombe House, a good third. In the class for twelve incurved blooms Mr. A. Alderman was placed first; Mr. D. Parnell, gardener to Mrs. Brown, Brickwood House, second; and Mr. Rodbourn again third. Messrs. Sadler, Cook; Lane, gardener to Alderman Barrow, Park Hill; A. Alderman; and Brice, gardener to Mrs. Frith, Addiscombe Road, secured the prizes in the remaining classes for incurved and Japanese blooms. The last-named exhibitor showed the larger Anemone-flowered varieties to great advantage, securing the first prize in both classes: second and third prizes being secured by Messrs. Johnson, Rodbourn; Dodson, gardener to Miss Stenning, Addiscombe Park, and Cook. Other prizes for cut blooms were awarded to Messrs. Sadler, Welstead; Reed, Staines; A. Alderman, and E. Mawley, Lucknow House.

In the classes provided for amateurs and single-handed gardeners only, many good stands were in competition, notably of the Japanese, which



throughout the Show were in splendid condition, the prizewinners being Messrs. Staines, Brice; Reed, Welstead; Greenwood, Dobson, and J. W. Jones.

The fruit classes were fairly well filled, Messrs. Rodbourn; Cummins, gardener to A. Smea, Esq., Hackbridge Grange; and Jones, gardener to J. R. Brougham, Esq., Wallington, being, however, the sole prizewinners for Apples and Pears. For three bunches of black Grapes Mr. Cummins was placed first with Alicante, Mr. Staines being second, and Mr. Croach third, both showing Alicante. Mr. A. Alderman was the only competitor in the class for three bunches of white Grapes, and was adjudged first prize for neat bunches of Muscat of Alexandria.

The class for collections of not more than twelve varieties of vegetables produced a close struggle for supremacy between Messrs. Cooper, gardener to G. C. McDonald, Esq., Waddon, and Rodbourn, which resulted in favour of the first-named exhibitor, no other collection being staged. Other prizes for vegetables were secured by Messrs. Johnson and Welstead. Classes were also provided for foliage and flowering plants, and these added to the effect of the Show, Messrs. Alderman, Rodbourn, and Curd taking the prizes. Prizes for cottagers' collections of vegetables were also given, and attractive miscellaneous exhibits were staged by Messrs. Piper, Uckfield; McKay, florist, Croydon; and Curd.

#### THE LAMBETH AMATEUR SOCIETY.—NOVEMBER 11TH AND 12TH.

It is pleasant to be able to record that this interesting Society, entirely composed of amateurs, the majority living within a moderate distance of the Elephant and Castle, is making excellent progress, and the Show held this season was one of the best in quality, and certainly the largest, which has been provided since the foundation of the Society in 1874. A far more commodious and suitable building than that hitherto engaged has been obtained for the purpose—namely, the Hawkstone Hall, Westminster Road, and this was filled with plants and tables bearing the numerous collections of cut blooms. One of the honorary members, Mr. R. Whibley, contributed a group of miscellaneous Palms, Ferns, and similar plants, which were assigned a central position in the hall and had a good effect; Mr. Davis, Lilford Nurseries, Camberwell, exhibiting a large group of Chrysanthemums, which were placed at the upper part of the hall and formed a fine bank round the platform. The general appearance of the Show was very bright, and under the superintendence of the Hon. Sec., Mr. G. S. Addison, assisted by the energetic members of the Committee—Messrs. H. Ellis, Harman Payne, W. L. Tracy, and T. Child—the exhibits were very satisfactorily and effectively arranged. A considerable amount of enthusiasm and energy has been brought into this Society in the past two seasons, and with the same able management it is likely to take a prominent position in the south of London.

With incurved blooms Mr. Ellis and Mr. Tracy were the principal exhibitors, the former leading with twelve blooms and the latter with six, both showing even, clean, and pretty samples. Other prizewinners in these classes were Messrs. T. Hadden, Child, and A. Ball. Mr. Child won first with six blooms of one variety incurved, staging good blooms of Guernsey Nugget. Mr. Ellis followed, with Mrs. G. Rundle neat; and Mr. J. W. Addison was third with Guernsey Nugget. Japanese varieties were strongly and well represented. Of twelve blooms no less than ten boxes were staged as compared with six last year. Mr. C. J. Fill won the first place with fine blooms of Japon Fleuri, Mdle. Berthie Rendatler, Baronne de Prailly, Roseum superbum, Père Delaux, and Parasol. Messrs. Child and Tracy followed, each showing bright and handsome blooms. The competition with six Japanese was still keener, fifteen exhibitors entering against nine last year. Mr. T. Child took the lead with praiseworthy examples of Japon Fleuri, Roseum superbum, M. Delaux, Triomphe de la Rue des Chatelets, Fanny Bouchardat, and Mdle. Moulise. Messrs. Fill and Hadden took the other prizes, both having Japon Fleuri extremely well. For six blooms one variety Japanese, Mr. C. J. Fill led with Madame C. Audiguier, large and handsome. Mr. Addison followed with Madame de Sevin; Mr. J. H. Howett third with Elaine. Reflexed varieties were represented by several good collections. The best twelve blooms of eight varieties, for which a syringe was offered by Mr. Harman Payne as the first prize, was staged by Mr. Tracy, who had capital samples of Ariadne, Chevalier Damage, and Dr. Sharpe. Messrs. Hadden and Payne followed closely. Mr. J. W. Addison had the leading stand of six reflexed blooms of one variety, showing Dr. Sharpe, large, clean, bright, and good. Mr. Williams was second with Pink Christine.

The Anemone Pompons were especially good. In the class for eight varieties, three blooms of each, bunched, Mr. Child scored a success with fine examples of Regulus, Antonius, Marie Stuart, Madame Montels, Astarte, Astrea, Marguerite de Coix, and Firefly, all bright and pretty. Messrs. Ellis and E. J. Whibley were second and third respectively. Several pretty bouquets were shown by Messrs. Davison, Whibley, and Ellis, but the flowers were slightly too crowded.

In the honorary members' classes some excellent collections were staged, particularly in the class for twelve incurved and twelve Japanese, Mr. Hillier securing the chief position with most creditable blooms. Mr. R. Whibley, who was second, also had some fine blooms, fresh and symmetrical. Anemones and Japanese were shown in good condition by Messrs. Hillier, R. Whibley, and others.

Plants were not generally so praiseworthy as the cut blooms, but two collections of six untrained bush Pompons from Mr. Tracy and Mr. Davison deserve notice, for they were well grown and profusely flowered, and this style of plant would be more suitable for an amateur society like this. The plants can also be grouped to better effect, and contribute more to the beauty of a show than trained specimens of indifferent merit. Standards and pyramids were not first-rate, but the groups contained some healthy plants bearing large blooms.

#### KINGSTON-ON-THAMES.—NOVEMBER 11TH AND 12TH.

EXCELLENT shows have been held at Kingston during the past eight years, but not one has surpassed the Exhibition now briefly to be noticed. On some occasions specimen plants have been better, and we have perhaps seen a somewhat finer display of incurved flowers, many growers having lost their largest blooms in consequence of the earliness of the season; but

the stands of Japanese were magnificent and the groups finer than ever, so that altogether the Show was equal to and perhaps better than any of its predecessors, and the fame of the admirably managed Society has been well maintained.

**Cut Blooms.**—As might be expected the contest for the twenty-five-guinea challenge cup for forty-eight varieties, twenty-four incurved and twenty-four Japanese, was the great centre of interest. It will be remembered that the last great cup was secured by Mr. Molyneux, gardener to W. H. Myers, Esq., Stanmore Park, Bishop's Waltham, he having won it two years consecutively; and he has now won the new cup for the year—a run of success that is quite unparalleled. Mr. Molyneux, though first in the great class at the Show under notice, had a "foeman worthy of his steel" in Mr. Gibson, gardener to T. Wormald, Esq., Morden Park, Mitcham, who excelled in Japanese, but lost a correspondingly greater number of points in incurved blooms, several of which, however, were remarkably fine, though some were lacking in solidity; and the result was that he lost the premier position by nine points out of a possible 238, the five Judges being about three-quarters of an hour in settling the matter, which they did with complete unanimity. Mr. J. Hinnell, gardener to F. A. Davis, Esq., Anglesea House, Surbiton, was third, and Mr. McPherson, gardener to S. Page, Esq., St. Leonard's Lodge, Surbiton, fourth, both staging highly creditable collections.

We give the names of the blooms in the "cup" collection and the order of their arrangement from left to right in each row respectively.

**Japanese.**—Back row—Madame C. Audiguier, Japonaise, Meg Merrilees, Thunberg, J. Delaux, Comte de Germiny, Fair Maid of Guernsey, Baronne de Prailly. Middle row—Peter the Great, Sarnia, Boule d'Or, M. Ardene, Criterion, Balmoreau, Mons. Desbrieux, Mdme. Berthie Rendatler. Front row—M. Burnet, Apollo, Khedive, Mdle. Moulise, La Nympe, Soliel Levant, Mdle. Lacroix, and Grandiflorum.

**Incurved.**—Back row—Lord Alcester, Queen of England, Mr. Howe, Empress of India, Alfred Salter, Jeanne d'Arc, Golden Empress. Middle row—Lady Carey, Nil Desperandum, Mrs. Heales, Cherub, Princess Teck, Jardin des Plantes, Hero of Stoke Newington, Baron Beust. Front row—Mr. Bunn, Princess Beatrice, Angelina, an unnamed variety, Lady Hardinge, Mrs. Cullingford, Mrs. Shipman, and Pink Venus.

**Japanese Classes.**—These, from their commanding excellence, demand priority of record. In the class of twenty-four varieties eight grand lots were staged, the whole forming a brilliant and imposing display. The honour of winning the first position in this class fell to Mr. King, gardener to R. Few, Esq., Wolsey Grange, Esher, who staged wonderful blooms of Triomphe de la Rue des Chatelets, Madame C. Audiguier, Fair Maid of Guernsey, Marguerite Marrouch, Boule d'Or, Mons. Burnet, Baronne de Prailly, Criterion, Thunberg, J. Delaux, Japonaise, Magnum Bonum, Mdle. Lacroix, Red Gauntlet, Comte de Germiny, Mrs. Mahood, Fanny Bouchardat, Balmoreau, Album Plenum, Arlequin, Soliel Levant, Sarnia, and Madame Berthie Rendatler. Second Mr. Child, gardener to Mrs. Slade, Claygate, Esher, exceedingly close and very splendid. Third Mr. G. Woodgate, gardener to Lord Wolverton, Kingston Hill, with handsome stands. Fourth Mr. Bates, gardener J. E. Meek, Esq., Poulett Lodge, Twickenham. An extra prize was awarded to Mr. E. Coombs, gardener to F. A. Browne, Esq., Lawn Bank, Teddington.

Twelve Japanese.—Eleven collections were staged. First Mr. Fife, gardener to W. T. Dick, Esq., Thames Ditton, with grand blooms of Criterion, Madame C. Audiguier, Fair Maid of Guernsey, Marguerite Marrouch, Mdle. Lacroix, J. Delaux, M. Burnet, Soliel Levant, Red Gauntlet, Madame Bertie Rendatler, Triomphe de la Rue des Chatelets, and Meg Merrilees. Mr. Molyneux was second with a good even stand; Mr. Lyne, Belvidere, Wimbledon, third, excellent; Mr. Sallows, gardener to J. J. Flack, Esq., Twickenham, fourth, an extra prize going to Mr. W. Clarke, gardener to A. Nagle, Esq., Kingston.

Six Japanese.—First Mr. Benson, gardener to W. H. Roots, Esq., Canberry House, Kingston, with splendid blooms of Baron de Prailly, Boule d'Or, Comte de Germiny, Madame C. Audiguier, Commandant Baco, Mdle. Lacroix. Mr. Strong, Thames Street, Weybridge, second, and Mr. C. Orchard, gardener to J. Galsworthy, Esq., Coombe Warren, Kingston, third, both staging admirably.

Six Japanese of any one variety.—Mr. W. Fyfe was first with J. Delaux, fresh, full, and brilliant; Mr. Woodgate second with Madame C. Audiguier; Mr. Benson third with Mdle. Lacroix; Mr. King being granted an extra for Thunberg, all the stands being very superior.

**Incurved Classes.**—In the class of twenty-four blooms there were three competitors, Mr. Molyneux being placed first with practically the same varieties as in the cup class—good-sized solid and well-finished flowers. Mr. Woodgate was second with a fine stand, in which Novelty was of striking excellence. The third prize was properly withheld, the fourth going to Mr. Powell, The Gardens, Powderham Castle. Twelve collections were staged in the class of twelve varieties, Mr. Strong winning with splendid examples of Empress of India, Golden Empress, Queen of England, and Golden Queen of England in the back row; Cherub, Lady Hardinge, Lord Wolseley, and Mrs. W. Shipman second row; Princess of Wales, Mr. Jay, Lady Slade, and a particularly neat bloom of Mabel Ward in the front. Second Mr. E. Coombs, very even and good; third Mr. Fyfe; fourth Mr. Lynes; and fifth Mr. Stephenson, gardener to J. Bull, Esq., Redholme, Teddington.

In the class for six blooms first Mr. Benson; second Mr. Slade, gardener to Lady Bowater, Richmond Park; and third Mr. C. Orchard. In the class for six blooms of any one variety, first Mr. Molyneux with Princess of Wales, second Mr. Strong with Queen of England, and third Mr. King, Golden Empress of India, all in fine condition.

Twelve reflexed blooms in eight varieties.—First Mr. Molyneux with King of Crimsons (3), Golden Christine (2), Pink Christine (2), Mrs. Forsyth (2), Phidias, Cloth of Gold, and Dr. Sharpe. Second Mr. Slade, third Mr. Child. Six collections were staged.

Twelve Anemones in not less than six varieties.—First Mr. Molyneux—with Mdle. Cabrol (3), Fabias de Maderanaz (4), Fleuri de Marie (2), Lady Margaret (2), Mrs. Pethers, and Dorothee Souille, eleven collections being staged, but the names of the other prizetakers were accidentally overlooked.

For twelve bunches of Pompons, distinct three stems as cut to form a bunch, Mr. Molyneux received the first award for a collection containing



three single flowers of each variety to a bunch, while the other collections were set up in clusters without any disbudding at all. Messrs. Clarke and Lyne were second and third respectively, while for twelve bunches of Anemones the honours fell to Mr. W. Furze, Roselands, Teddington; Mr. Molyneux and Mr. Lyne in the order of their names.

The following Japanese were certificated by the Judges, all the varieties being exhibited by Messrs. Jackson & Son:—

*Val d'Andorre*.—A large full flower, with broad and slightly drooping florets; colour bright chestnut red.

*Beauté des Jardins*.—A rather small but very compact flower, with roundish florets; colour crimson magenta, very rich.

*Flamme de PUNCH*.—A large full flower, with long drooping florets; colour golden-amber, deeping to bronze; bright and effective.

**PLANTS.**—Many of the specimen plants were staked out unduly, and the lacing of the stems of others was too apparent. Seven groups of Chrysanthemums arranged for effect were studded around the sides of the large hall, producing a fine effect. Mr. Orchard, gardener to J. Galsworthy, Esq., Kingston Hill, was deservedly awarded the first prize. His collection was admirably arranged, the colours well blended, the foliage throughout of a most beautiful deep green and feathered right down to the rim of the pots, while his plants ranged from 2 feet at the front to 6 feet at the back, and contained many of the new varieties, as well as a general selection of the best older sorts. Mr. Buss, gardener to A. S. Price, Esq., Ewell, secured the second place with a collection that contained good flowers but a falling off towards the front, while others were a trifle too crowded. Mr. W. Burns, gardener to H. A. Rigg, Esq., Wykeham Lodge, Hersham, was placed third, Mr. T. Glover fourth, Mr. Lynes fifth, all exhibiting groups of more than ordinary merit.

The trained plants were not numerous, but the prizewinners were generally neat and of good quality. The premier award for six specimens fell to Mr. King for plants averaging 4 feet in diameter of Prince of Wales, Mr. Bunn, Mr. G. Glenny, Lady Hardinge, Lord Wolseley, and Mrs. Haliburton. Mr. J. Sallows, gardener to J. J. Flack, Esq., Twickenham, was placed second, and Mr. Watson third. The awards for three were shared by Mr. Trussler, gardener to J. Shand, Esq., and Mr. R. Cante, gardener to J. P. Robinson, Esq., Esher, who were first and second respectively. Trained standards were well done by Messrs. Cante, Trussler, and Sallows, who were placed in the order of their names.

For three trained Japanese several collections competed. Mr. King received the first prize for large plants of Bouquet Fait, La Nympe, and Sofranum; Messrs. Trussler the second; Mr. Sallows the third; and Mr. Orchard the fourth.

For six trained Pompons Mr. Lynes led the way with profusely flowered plants of Rosinante, Firefly, St. Thais, St. Michell, Lilac and White Cedo Nulli; Mr. Watson was placed second; and Messrs. Martin & Child equal third. Mr. Lynes was the premier exhibitor of standard Pompons, and his plants were not distorted by overtraining.

For the best group of miscellaneous plants for effect three collections were arranged. Mr. Glover, gardener to W. W. Evitt, Esq., Worcester Park, was worthily awarded the premier position with a collection of Palms and other decorative plants, tastefully interspersed with Calanthes and fringed with Ferns. Mr. Attrill, gardener to Lady Freake, Bank Grove, Kingston, received second honours, and Mr. J. Martin, gardener to J. Forde, Esq., Elm Lodge, Surbiton, the third.

Primulas, Cyclamens, berried plants, table decorations, and table plants were all well and numerous exhibited, but fruit was conspicuous almost by its entire absence, for while several classes are set apart, there were only two collections of Apples and one collection of fruit for competition, plainly indicating its scarcity in the neighbourhood. Messrs. Jackson staged admirably coloured Alicante, Gros Maroc, Alnwick Seedling, and the true Victoria Hamburg Grapes.

#### NATIONAL SOCIETY, ROYAL AQUARIUM.—NOVEMBER 12TH AND 13TH.

A MAGNIFICENT Exhibition was opened at the Royal Aquarium yesterday (Wednesday), one of the best of the thirty-eight held by this Society under its present and former titles. A large number of valuable prizes was offered, and the result of this well-judged liberality was extremely keen competition in all the leading classes, combined with most praiseworthy quality. The cut blooms were especially fine, and all the sections were admirably represented. Plants and Grapes were numerous and were tastefully arranged along one side of the hall and around the two end fountains, producing a much better effect than has usually been the case, as a general view of the whole could be obtained from either end. The blooms were placed upon tables down the centre of the hall, the boxes being arranged in three rows down the whole length of the building. Fruit and vegetables were extensively and well represented; but owing to the great space occupied by the other exhibits these had to be consigned to the galleries. Miscellaneous plants were arranged between the groups of Chrysanthemums and added greatly to the general effect; a large and beautiful collection of Chrysanthemum blooms from Messrs. H. Cannell & Sons, Swanley, being much admired.

The chief interest of the Show was concentrated in the class for forty-eight blooms, twenty-four incurved, not less than eighteen varieties, and the same number of Japanese. In a strong competition of eight exhibitors Mr. C. Herrin, Chalfont Park Gardens, Gerrard's Cross, succeeded in obtaining the premier prize of £15, the largest money prize ever offered for Chrysanthemums, and he well deserved the honour, for his blooms were exceedingly fine, even, fresh, and substantial throughout. The incurved blooms were of moderate size, very even and fresh. The varieties were as follow. Back row—Empress Eugénie, Empress of India, Golden Empress, Lord Wolseley, Empress of India, Queen of England, Golden Empress of India, and Jeanne d'Arc. Second row—Jeanne d'Arc, Prince Alfred, John Salter, Mrs. Heale, Jardin des Plantes, Lady Hardinge, White Venus, Lord Wolseley. Front row—Princess Beatrice, Barbara, Princess of Teck, Refulgence, Cherub, Lord Alcester, Barbara, and Venus. The Japanese were much finer than Mr. Gibson's, very handsome samples of the following varieties, several being exceptionally good. Back row—Comtesse de Beauregarde, F. A. Davis, Mdme. C. Audiguier, Boule d'Or, Fair Maid of Guernsey, Baronne de Prailly, Thunberg, Comtesse de Beauregarde. Second row—Fanny Bouchardat, Thunberg,

Triumph de la Rue des Chatelets, M. Ardene, Soléil Levant, Fanny Bouchardat, Madame C. Audiguier, and Fair Maid of Guernsey. Front row—Agrements de la Nature, Roseum Superbum, Album Plenum, Duchess of Albany, Madame Moulise, J. Delaux, Hiver Fleuri, and Grandiflorum. Mr. C. Gibson, gardener to J. Wormald, Esq., Morden Park, Mitcham, was placed second, his blooms being large, but a little past their best. He had very fine incurved blooms, the back row comprising Alfred Salter, Lord Alcester, Queen of England, Empress of India, Queen of England, Lord Alcester, Alfred Salter, and Empress of India. The others were good, but not quite so fresh and even as the first blooms. The Japanese comprised handsome specimens of J. Delaux, Thunberg, Album Plenum, Arlequin, Fair Maid of Guernsey, and Grandiflorum. The third place was gained by Mr. F. W. Flight, Cornstiles Gardens, Twyford, Winchester, who had a neat collection, but not of remarkable size.

For twenty-four incurved blooms the premier prize was won as usual by Mr. E. Sanderson, St. Mary's Road, Harlesden, who had particularly fine blooms of the following varieties. Back row—Alfred Salter, Emily Dale, Hero of Stoke Newington, Queen of England, Golden Empress, Empress Eugénie, Princess of Teck, and Empress of India. Second row—Madame Madeline Tezier, Miss Mary Morgan, Princess Beatrice, John Salter, Lady Hardinge, Princess of Wales, Barbara, Mrs. W. Shipman. Third row—Mr. Brunlees, Jardin des Plantes, Nil Desperandum, Mabel Ward, Golden Eagle, Cherub, Yellow Perfection, and Antonelli. Mr. J. R. Wildman, Oaklands, Grove Road, Clapham Park, was second; and Messrs. Saltmarsh & Son, Chelmsford, were third. There were twelve competitors. Mr. E. Sanderson won the first prize with twelve incurved, having handsome even blooms; Mr. C. Herrin was a close second; and Mr. J. W. Springbet, Hammond Street, Cheshunt, was third, amongst sixteen exhibitors, all staging good blooms. With eighteen incurved Mr. E. Berry, Roehampton, Mr. Sanderson, Mr. E. C. Jukes, Hope House, Windermere Hill, won the three prizes, showing well. There were four exhibitors. With six blooms of one variety of incurved, Mr. Wills, The Firs, Bassett, Southampton, was first with Lord Alcester, large, substantial, and handsome, being followed by Mr. Calvert with Empress of India, large and good.

There were nine stands of twenty-four Japanese, the premier collection being that from Mr. C. Herrin, which included grand blooms of Comtesse de Beauregarde, Boule d'Or, J. Delaux, Fanny Bouchardat, Baronne de Prailly, Thunberg, Roseum Superbum, and Agrements de la Nature amongst many others, all good, large, and finely coloured. Second Mr. Prinbet and third Mr. J. J. Lowry, gardener, Belmont, Mill Hill, Hendon, the latter showing very good blooms. Eleven competitors entered in the class for twelve Japanese blooms, Mr. Herrin being first with grand examples of L'Incomparable, M. Delaux, Hiver Fleuri, Peter the Great, Fanny Bouchardat, M. Desbrieux, and F. A. Davis. In the class for six blooms of one variety Madame C. Audiguier and Baronne de Prailly were the leading varieties, the first-named being capitally shown.

In the mixed class for four Japanese, four incurved and four Anemones, Mr. Herrin took the lead, showing The Damio, Fair Maid of Guernsey, and Duchess of Albany, very fine amongst the Japanese; Queen of England and John Salter amongst the incurved; and Lady Margaret, Madame Berthie, Pigmy, and Fabias de Maderanaz amongst the Anemones. The second place was taken by Mr. Lowry, who had a very fine Thunberg, Mrs. Pethers, and Gluck.

Anemones were very fine, Mr. Herrin securing the premier place with handsome blooms of Fabias de Maderanaz, Lady Margaret, Sœur Dorothee Souille, Minnie Chaté, Mrs. Pethers, Madame Godereau. Mr. M. Sullivan, Downshire House Gardens, Roehampton, was a good second; and Mr. J. C. Jukes, Hope House, Winchester, was third.

The principal exhibitor of specimen plants was Mr. Monk, Leytonstone, whose plants are noted in the report of the Stoke Newington Show. The best groups were shown by Mr. H. Harding, gardener to J. Starling, Esq., The Chestnuts, Gunnersbury; Mr. N. Davis, Camberwell; and Mr. G. Stevens, Putney.

The principal class in the fruit section was that for twelve bunches of Grapes, in which there were four competitors. Mr. Pratt, The Gardens, Longleat, was placed first with large examples of Alicante, Muscat of Alexandria, with good Lady Downe's, four bunches of each. Mr. S. Castle, West Lynn, Norfolk, was second with Alicante, Gros Maroc, Golden Queen, and Gros Colman, three bunches of each, the black Grapes very large and fairly coloured. Mr. W. Howe, gardener to H. Tate, Esq., Park Hill, Streatham Common, was third with smaller but well-finished bunches of Alicante, Muscat of Alexandria, and Black Hamburg. Apples and Pears were numerous shown, but the awards were not announced until late.

The competition was very keen for Messrs. Sutton & Sons' prizes for a collection of vegetables, thirteen exhibitors entering the lists. Mr. J. May, gardener to Capt. Le Blanc, Northau House, Barnet, was first with a fine clear collection, comprising Hathaway's Excelsior Tomatoes, Autumn Giant Cauliflowers, Selected Sprouts, Leeks, Celery, and Potatoes. The other prizes were secured by Mr. H. Miller, gardener to W. H. Long, Esq., Rood Ashton Park, Trowbridge, who was a close second. Mr. C. W. Howard, Bridge, Canterbury, was third; Mr. A. Waterman, gardener to H. A. Brassey, Esq., Preston Hall Gardens, Aylesford, fourth; and Mr. Woodward, Blands-Farm, Isleworth, Middlesex, fifth. Messrs. E. Webb & Sons' prizes for a collection brought ten exhibitors, all showing fine produce, but the awards were not announced sufficiently early for us to obtain them. Potatoes were also largely represented, the competition being very keen.

#### SOUTHAMPTON—NOVEMBER 6TH AND 7TH.

THE autumn Exhibition of this popular Society was held in the Skating Rink, Southampton, but the increase in both the number of exhibitors and exhibits compelled the Executive to devote the whole of this spacious building to the arrangement of the Chrysanthemums; the Bird Show, which is held in connection, and usually held in the same building, having been transferred to another portion of the building, together with the vegetables and other miscellaneous productions. The groups, specimen plants, and cut blooms throughout were of more than ordinary quality. Such a marked improvement has been made here in past few years in the culture and training of specimen plants that the exhibitors of Southampton can hold their own against other exhibitions of a similar nature. In Class 1, for



groups arranged in a space 8 feet by 5 feet, quality and general effect to be the leading feature. Mr. J. Allen, gardener to J. Bailey, Esq., Elmfield Hill, was awarded the first place for dwarf-grown plants carrying well-built flowers, and very effective. Mr. T. Osborne, gardener to H. J. Buchan, Esq., Wilton House, received second honours with plants much taller, but with good flowers; Mr. Blandford, gardener to Mrs. Hazelfoot, Moorhill, the third place; and Mr. Shadwell, gardener to H. Morant, Esq., Manor House, Ringwood, the fourth prize. For six plants, incurved or reflexed, Mr. Wills, gardener to Mrs. Bassett, The Firs, Southampton, was a very good first, exhibiting plants from 4 to 5 feet in diameter, and carrying well-developed flowers; the varieties were Mrs. Sharpe, a grand plant; Lord Alcester, Chevalier Domage, Pink Christine, Gloria Mundi, and Mrs. G. Rundle. Mr. Allen, gardener to H. J. Buchan, Esq., took second honours for a very good collection of Alfred Salter, Dr. Sharpe, Snowball, Pink Christine, Mrs. Sharpe, and Mrs. G. Rundle. Mr. Kings, gardener to Lieut.-Col. Macleay, Lyndhurst, received the third prize, all exhibiting well. For four plants Mr. Allen is first with Mrs. Forsyth, Golden Christine, Dr. Sharpe, and Christine, all profusely flowered and neatly trained. Mr. W. Joy, Shirley, was placed second; and Mr. J. Reynolds, gardener to the Hon. H. G. L. Crichton, Netley Castle, third. The six Japanese plants of Mr. Wills were marvels of cultural skill and training, most of the plants containing from 200 to 300 flowers, particularly La Nympha and Hiver Fleuri; his other varieties were Fair Maid of Guernsey, Soliel Levant, Madame Berthie Rendatler, and Lady Selborne. Messrs. Joy and Bailey were placed second and third respectively with plants that sometimes are worthy of first honours. For four Japanese Mr. Allen was a good first with Bouquet Fait, Fair Maid of Guernsey, Madame Berthie Rendatler, and La Nympha, all neatly trained and exceedingly well flowered. Mr. Reynolds and Mr. Thomas, gardener to R. R. Scott, Esq., Shirley, were placed in the order of their names.

In the class for six plants, nurserymen, Messrs. Joy, Dove, and Ransom have the honours between them; and for single specimen plant Messrs. Wills, Kings, Joy, and Allen were the prizetakers in order of their names.

*Cut Blooms.*—Twelve classes were set apart for cut blooms, the whole of which were most keenly contested. In some of the classes there were fifteen competitors, and throughout the blooms were distinguished by their general high quality and freshness of colour. The most important class was that for twenty-four varieties, distinct, sixteen incurved or reflexed and eight Japanese. As there were eight collections staged, and the back row was composed throughout of Japanese, while the two front rows were made up of the incurved and reflexed, it produced a most brilliant effect. Mr. Molyneux, gardener to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham, gained the premier position for a magnificent collection, consisting of the following:—Japanese: Baronne de Prailly, Fair Maid of Guernsey, Thunberg, J. Delaux, very bright and distinct; Meg Merrilees, M. Ardene, Comte de Germiny, and Madame Chas. Audiguier. In the second there were Golden Empress, Jeanne d'Arc, Alfred Salter, Empress of India, Lord Wolseley, Queen of England, King of Crimson, Lord Alcester, Princess of Wales, good; Venus, Prince Alfred, Princess Teck, Hero of Stoke Newington, Mr. Heales, magnificent; and Mr. Howe. Mr. Melville, gardener to J. W. Flight, Esq., Cornstiles, Twyford, Winchester, was a very fair second. His collection contained some very large and solid flowers; King of the Crimson, Lord Wolseley, Hero of Stoke Newington, and Eve being among the best. Mr. Wills, gardener to Mrs. Pearce, The Firs, Basset, was placed third, most of his being very large, but lacked refinement. King of the Crimson, which is always shown at Southampton in good condition; Miss Mary Morgan, Snowball, and Lord Alcester were large and compact. Mr. Osborne, gardener to J. H. Buchan, Esq., J.P., Wilton House, was awarded fourth honours for a very good collection.

For twenty-four, not less than eighteen varieties (open), there were six competitors. Mr. Molyneux was again awarded first honours for a collection staged with his usual excellence. Madame C. Audiguier, Fair Maid of Guernsey, Criterion, Flamme de Punch, Meg Merrilees, Peter the Great, Comte de Germiny, and a second bloom of Mad. C. Audiguier composed the back row; and it must be here observed that, as only eighteen varieties are required, in reading the names of each collection from left to right the same variety may be named more than once. In the second row there were Golden Empress, King of the Crimson, Queen of England, Empress of India, Prince Alfred, Queen of England, Golden Empress, and Princess of Wales; while the front row contained Hero of Stoke Newington, Princess of Wales, Prince's Teck, Mr. Howe, Princess of Wales, Alfred Salter, Jeanne d'Arc, and Hero of Stoke Newington. Mr. Neville and Mr. Wills were awarded respectively second and third honours for good collections, while an extra prize was awarded to Messrs. W. & G. Driver, Fareham.

In the class for twelve incurved, distinct, Mr. Molyneux was well ahead of the other eight collections staged with Golden Empress, Princess of Wales, grand; Lord Alcester, Empress of India, Jeanne d'Arc, Hero of Stoke Newington, Chernub, Mrs. Shipman, Prince Alfred, Jardin des Plantes, Alfred Salter, and Prince's Teck. Mr. Wills obtained second honours for a good collection. Messrs. Drover gained the third, and Mr. Hunt, gardener to R. Moss, Esq., M.P., Weston Grove, the fourth positions.

For twelve cut blooms, Japanese, distinct, there were eleven boxes staged, and here Mr. Wills and Mr. Molyneux ran each other very closely indeed, both collections being most evenly matched. After careful consideration the palm of honour was awarded to Mr. Molyneux, whose blooms, taken collectively, were the brightest, while a few were of greater depth. Mr. Molyneux's collection consisted of Fair Maid of Guernsey, Criterion, M. Ardene, Comte de Germiny, Japonaise, M. Delaux, Thunberg, Madame C. Audiguier, Golden Dragon, J. Delaux, fine telling variety; M. Burnet, good; and Triomphe du Nord. In Mr. Wills's there were M. Ardene, Golden Dragon, Hiver Fleuri, very good; Mons. Astorg, similar to Elaine; Criterion, Dolores, Meg Merrilees, Mons. Burnet, Mr. Barnes, Madame Lacroix, Magnum Bonum, grand for that old variety; and Triomphe du Nord. Messrs. Neville and Drover shared the third and fourth positions in the order of their names. All the collections were of marked excellence.

The class for twelve Anemone-flowered, not less than eight varieties, was encouraged with seven competitors, Mr. Molyneux being a long way ahead with a magnificent lot which contained several new varieties, including Madame Cabot (2), Fabias de Maderanaz (3), Fleur de Marie (2), Souer Dorothee Souille (2), Mrs. Pithers, Madame Clos, Lady Margaret, and

Acquisition. Mr. Wills received second honours, and Messrs. Drover the third.

Reflexed blooms were also staged in admirable condition, and for twelve blooms, not less than eight varieties, Messrs. Molyneux, Wills, and Neville were placed in the order of their names. The first-prize stand consisted of Golden Christine (2), King of the Crimson (2), Pink Christine, Mrs. Forsyth (2), Phidias (2), Cloth of Gold, Felicity, and Dr. Sharpe. In the seven collections there were but very few weak flowers.

For twelve blooms in not less than six varieties of natural growth, to be shown with not less than 4 inches of stem above the tube, the competition was very keen, and some large flowers were exhibited, but in comparison with dressed flowers there is a want of tidiness and uniformity in the manner in which they were staged. Mr. Wills was placed first with massive blooms of Queen of England, Lord Alcester, &c. Mr. Allen received the second prize with a stand of all Japanese, and Mr. Osborne the third place.

In the gardeners' class for twelve cut blooms not less than eight varieties, sixteen collections were staged, and Mr. Wildsmith, gardener to Viscount Eversley, Heckfield Place, Winchfield, was awarded the premier position with a grand stand, but principally Japanese. As in these classes there was no stipulation what variety should be exhibited, the Judges had more than ordinary trouble in coming to a decision, for it is very hard work to pit the worth of a good Japanese flower against a good flower of the incurved section. Mr. Wildsmith's stand worthily deserved its position, and was composed of well-built flowers of Soliel Levant (2), Madame C. Audiguier (2), Fair Maid of Guernsey (2), Queen of England (2), Criterion, a magnificent bloom; Nil Desperandum, Hiver Fleuri, and Comte de Germiny. Messrs. Allen, Osborne, and Hunt divide the other awards in the order of their names. A similar class open to exhibitors who had never won a prize for Chrysanthemums at any exhibition brought out a like number of competitors, and the awards of first, second, third, and fourth prizes fell to Mr. Wildsmith; Mr. R. H. Munday, Basingstoke; Mr. Selden, gardener to Mrs. Brooke, East Cowes; and Mr. Busby, gardener to F. Willan, Esq., J.P., Thornhill Park, in the order their names are here placed, all exhibiting good collections.

Some very fine stands from amateurs were staged, Mr. R. Carter, Kent Road; St. Denys; and Captain Gibbs, Redthorne, Portswood, ran each other very closely for first position in the class for twelve cut blooms, eight varieties. The prizes were awarded in the order of their names, Mrs. E. Flight taking the third position, and for six blooms Messrs. Brodie, Reeves, and Bramplin were placed first, second, and third respectively. Altogether 150 specimen plants and 1300 blooms were staged at this fine exhibition.

Fruit, particularly Grapes, Apples, and Pears, were exhibited both numerous and of excellent quality, the colours, particularly the Apples, being very bright, the result of a hot summer. Some very tastefully arranged miscellaneous groups were exhibited, and other deserving objects which our space will not suffice to state in detail. Altogether the Show was a most excellent one, and well patronised and well regulated. Our thanks are due to Mr. F. C. Fudge, the energetic Secretary, Major General Lacy, Captain Gibbs, and others on the executive who united strive to make the Society as popular as it is.

#### NOTES FROM INGESTRE.

ANY gardener visiting Ingestre Hall, Stafford, will at all times find something interesting and instructive, for where such energetic and thoroughly practical men as Mr. Gilman have charge horticulture is sure to be well carried out. Fruit, flowers, plants, and vegetables are cultivated in a high-class manner, consequently it would be difficult to say which department is the most creditable. Grapes take precedence in some gardens, as also in the estimation of their owners, and the vineries being the first on my notes I briefly mention the excellency of the crops they contain in general, and of the Muscats of Alexandria in particular. These, though not sensational in size of bunch, are unsurpassed in "finish," bearing the rich pale amber tint so often desired by first-class cultivators, but not always attained. I have only seen them equalled in quality once, and that was by some bunches at each end of the large Muscat house of which I had charge at Garston Vineyard in 1868, and which, along with some bunches of black varieties, I think Mr. Meredith had the honour of personally presenting to the Queen at Christmas of the same year. The bunches at Ingestre average about 2½ lbs. each, and with berries of more than average size. White Tokay is also remarkably well grown, and though not in great demand at some places there are others where it is a great favourite, and I will plead guilty to the weakness of being partial to it, preferring it when well grown to any other non-Muscat white variety.

The conservatory is a spacious structure filled with gigantic Camellias well set with buds, and fine specimens of Tree Ferns and Palms, all clean and in robust health. The best varieties of the Camellias are Alba plena, Lady Hume's Blush, Donkelaar, and Waratah. They are all planted out, and comprise some of the finest specimens in the country. The Peach houses are nearly cleared of their fruit, and are being prepared for next year's campaign. The foliage is large, green, and of good substance, with moderately strong and very firm wood in the late houses, and the early houses have their lights off and their contents exposed to the influences of the weather. Good crops of large and highly coloured fruits are annually produced both of Peaches and Nectarines, the favourite varieties being Violette Hative, Royal George, and Barrington Peaches; Pine Apple, Pitmaston Orange, and Lord Napier Nectarines.

Figs, as at Worksop Manor, are grown on wires up to the roof, and produce immense crops of luscious fruits, for in this position they receive the maximum amount of heat and air to be obtained in the structure, as well as—and this is important—the full benefit of solar heat and light. Brown Turkey and White Marseilles are the varieties grown, and here, as elsewhere, give the greatest satisfaction.

In the Melon house was—considering the time of year, the end of



September—a splendid crop of handsome fruit, consisting of Read's Scarlet Flesh, Bellamore, Eastnor Castle, and Golden Perfection, a selection not easily surpassed. One of the low houses devoted to Tomatoes contains a grand floriferous example of Allamanda—either *A. grandiflora* or *A. Schottii*, I forget which. This is trained the entire length of the house, 28 feet, at the back of the centre pit and parallel to the path behind, on wires trained horizontally and one above the other, so that no space is lost and no dense shade cast anywhere but upon the pathway. This is the most economical and successful way of growing this handsome stove climber that I have seen; it was covered with hundreds of its rich yellow flowers, and Mr. Gilman says it had been blooming in a similar manner since last May. I saw the same plant in equally as good condition in July, 1882.

In the next division is a capital batch of Tuberose and Poinsettias, some 300 of the latter being grown annually, and chiefly used for house decoration. They are spring-struck, are about 2 feet in height, and well clothed with foliage. These will make a dazzling display in dull November. Gardenias are also a speciality at Ingestre, and therefore are grown to perfection. The batch for use during next winter and spring were struck in February, 1883, thus being of two years' growth, and for size, vigour, cleanliness, and floriferousness are scarcely to be excelled; indeed, so good are they that my steadfast and hitherto unshaken faith in the plan adopted by the best of London market growers of growing and keeping large plants, and followed by myself, has received a rude shock to which it may ultimately succumb. I have known of the "propagating-frame and rubbish-heap" system ever since it was generally advocated, but neither its advocates nor practitioners ever succeeded in convincing me that the system was the best, and I believe I have seen some of the finest examples in the country.

The foregoing are brief notices of what is worth seeing in the houses at Ingestre, but there are many other equally deserving of mention; for instance, the house containing a beautiful collection of Ferns has its rafters covered and draped with festoons of *Ficus repens*, the long sprays of which are used in large quantities for house decoration in winter, besides giving a useful shade to the plants beneath. In the house adjoining is a bright and healthy stock of the usual kinds of "furnishing" plants, and in numerous pits and frames are the usual autumnal occupants, all in great quantity and of high quality. The large and well-stocked kitchen garden, eight acres in extent, contains good crops of vegetables and of some kinds of fruits. Apples are very abundant; by the sides of the paths are several thousands of Strawberries in pots plumping up and ripening their crowns; on the space of ground devoted to the Vines, but not interfering with the borders, are some huge Pumpkins weighing about 120 lbs. These are used for decorating the house in winter, dried ornamental Grasses being placed amongst them; when well grouped no doubt they are very effective.

The pleasure grounds are extensive, well kept, and contain fine specimens of deciduous trees and Coniferæ; and though the hall itself, after the disastrous fire in 1882, has been rebuilt, yet no unnecessary damage has been done to the surrounding lawns and flower beds, owing to the consideration which caused stout wooden hoardings to be erected at a convenient distance around the house, and confined all building operations within them. So well has this protective system been carried out that two magnificent specimens of *Magnolia grandiflora* on the walls of the house itself do not appear to have a leaf injured, and they are about 30 feet in height.

The keeping of the various garden departments at Ingestre prove Mr. Gilman to be one of our most able horticulturists, and his courtesy is as marked as his undoubted ability.—VISITOR.

## CHRYSANTHEMUM AND FRUIT SHOWS, AUTUMN, 1884.

November 13th and 14th.—Richmond, Brixton, Teddington, and Tunbridge Wells.

" 14th.—Reading.

" 14th and 15th.—Crystal Palace, Huddersfield, Canterbury.

" 18th.—Winchester, Yeovil, and Lincoln.

" 18th and 19th.—Plymouth.

" 19th.—Wimbledon.

" 19th and 20th.—Northampton and Birmingham.

" 20th.—Taunton, Dublin, and Aylesbury.

" 20th and 21st.—Hull.

" 22nd.—Loughborough.

" 25th.—Manchester.

" 25th and 26th.—Liverpool, Basingstoke, and South Shields.

" 26th, 27th, and 28th.—York.



### HARDY FRUIT GARDEN.

THE PLANTING SEASON.—*Aspect*.—Now that the value of cordons is understood the advice to turn every foot of wall space to account may literally be followed. Well will it be also if in planting against walls the influence of aspect receives that attention which it merits. It is indeed important to afford shelter to fruit trees by walls, but they may also be turned to good account in accelerating and lengthening the season of many of our best sorts of fruit. By planting favourite sorts of Plums,

Pears, and Cherries against walls facing north, south, east, and west, we obtain early, intermediate, and late crops of the same sorts. For example, we have Marie Louise, Doyenné du Comice, Williams' Bon Chretien, Comte de Lamy, Thompson's, Glou Morceau, Napoleon, Winter Nelis, Fondante d'Automne, and many of our best Pears on walls facing north, east, and west, and find all the trees grow and bear fruit well, and strange to say the trees bearing the most abundant crops regularly year by year are those with an aspect facing due east. All the sorts of Gage Plums that we have tried against a north aspect answer well, and we may note the especial value of fine late crops of Green Gage, McLaughlin's Gage, and Reine Claude de Bavay. We had excellent fruit of the last-named sort in October this year. Coe's Golden Drop may also be mentioned as answering equally well against due north and south aspects, both trees being alike healthy, vigorous, and fruitful. It must be conceded that south and west aspects are quite indispensable for Peaches, Nectarines, and Apricots; but the facilities which cordons afford for comparatively inexpensive trials of other fruit should induce everybody having wall space to plant so-called delicate sorts as extensively as possible in different aspects. In the southern counties Brown Turkey Fig should have a place both against a south and east aspect for a supply of early and late fruit, the tree facing east affording plenty of ripe fruit till late in autumn. Morello Cherries have long had a liberal share of the north wall, but we have also found other sorts of Cherry afford an invaluable supply of late fruit from north walls, where a few cordons of Governor Wood, Bigarreau, and Black Tartarian afford many a dish of fine dessert fruit, and others of Belle Magnifique insure a supply for making Cherry jam. It was our intention, when sitting down to write this note, to give special lists of fruit for various aspects, but upon consideration we refrain from doing so, from a strong conviction that it is unnecessary to do so. Rather do we advise you to plant some cordons of each sort already given in our lists upon every available aspect of wall or outbuilding, and we confidently predict very general success. Unquestionably there will be a few failures, and only a few, if the planting and subsequent culture be alike skilful and careful for all the trees.

*Bush Fruit*.—Raspberries should be planted a foot apart in rows and with 5 feet between the rows, shortening each cane to 18 inches before planting. In poor soil very heavy dressings of farmyard manure must be dug in, or, better still, put in trenches and some soil mixed with it, for Raspberries to answer really well. If this be attended to, and the planting is done now, there will be both a fair crop of fruit next season and a strong growth of new canes. Black, or rather all Currants, require the same care in planting, and then with a plentiful supply of house sewage in summer success is certain. Prune and tie established beds of Raspberries now, and top-dress all plantations of bush fruit with plenty of rich farmyard manure. A sharp look-out must be kept upon Gooseberry bushes as soon as the leaf falls, for they are then liable to have the buds destroyed by birds at any time, and we may once more advise the erection of permanent coverings of fine-meshed wire netting over Gooseberry plantations in gardens to insure safety from the depredations of birds.

### FRUIT FORCING.

PINES.—The importance of light at this season of the year cannot be too much insisted upon. To insure this keep the glass clean, and let the plants be placed as near to it as can be done consistently with the foliage being clear of it. This is somewhat difficult of attainment where fermenting beds are employed, as they in time through decomposition subside considerably, and newly made ones, unless they be well trodden down, are apt to settle rapidly. It is a prevailing and necessary practice to assort the plants before winter, and to give the fruiting plants the best places at a time when natural means will not afford much aid. These plants, under any conditions, should have a night temperature of about 65°, and 70° to 75° during the daytime from fire heat, with 10° to 15° rise from sun heat. Successional plants may safely be kept at 60° at night and from 60° to 70° on fine days, advancing, of course, from 5° to 10° from sun heat. Young stock which are not prepared to make much growth will progress satisfactorily with a night temperature of 55° to 60° and 65° in the daytime, or on cold or dull days 5° less. Atmospheric moisture will be necessary at all times in the fruiting compartments. Sprinkling must, therefore, be attended to regularly, and syringing in a light house and in bright weather at least twice or thrice a week. In the case of successional plants it will only be needed occasionally. For fermenting beds of leaves Oak and Beech are the most durable, and as these are now available new beds should be made where necessary. It is best, where the extent of glass will admit of it, to free the pits of all the plants and not put the plants into them until the beds are in proper condition, as more injury arises from shifting the plants about, or putting them on cold or very hot beds, than is generally supposed.

FIGS.—*Early House*.—The house must now be closed for starting, but there must not be any attempt to excite growth until the soil is thoroughly moistened, which must be effected by repeated waterings. Although Figs may be started at a high temperature, the most satisfactory results are obtained where the houses are closed early and the roots and fruit are allowed to advance steadily under the influence of gentle heat in near proximity to the pots. If Oak or Beech leaves are used they should be fermented before they are introduced, and for some time afterwards they should be watched and allowed to lie loosely until the heat descends to 70° or 75°, and this should not be exceeded about the pots, especially in the early stages. It is well not to employ fire heat the first fortnight, when the minimum temperature may range from 50° to 55° on mild nights, with a rise of 5° to 10° by day, when a little air at the top of the house will allow the atmosphere to become fresh at least once in twenty-



four hours. The trees will need syringing regularly with tepid water two or three times a day, and moisture must be secured by night through damping the paths about 9 p.m., when external conditions favour the rapid escape or condensation of moisture at this variable season. A little fire heat will, even where fermenting materials are employed, be necessary in cold weather; but it ought not to be used until necessary to prevent the temperature falling below 50°.

**STRAWBERRIES IN POTS.**—An early batch of some approved variety will need to be started in gentle heat towards the end of the month with a view to obtaining early fruits, which, if started at the time indicated, will generally be ripe about the middle of February. We find *La Grosse Sucrée* and *Vicomtesse Hericart de Thury* the best for early forcing. The drainage should be examined and rectified where it is out of order, and the surface soil removed or a top-dressing given of horse droppings and a little bonemeal, or some Amies', Clay's, or Standen's manure, giving about a thimbleful to each plant. Into this the plant will push surface roots and the plants be much invigorated. In the absence of a Strawberry house a Peach house that will accommodate the plants near to the glass, and started early in December, will be a suitable structure to bring forward the first batch or an early vinery. The house, presuming a Strawberry house to be at command, should only be closed for the first fortnight after the plants are brought in, and if sun heat is taken advantage of early in the afternoon the night temperature will not fall much below 50°, which should be the temperature aimed at in the early stage of forcing, and ought not to be exceeded by artificial means until the plants are fairly in growth. Autumn fruiterers bearing fruit at the present time will require to be sparingly watered, and have abundant ventilation on all favourable occasions.

#### PLANT HOUSES.

**Forcing House.**—Where plants have to be forced into bloom in large quantities for cutting and conservatory decoration a house must be prepared without further delay. The glass and woodwork should be thoroughly washed—the former outside as well as inside—so that every ray of light that can be admitted will reach the plants. The walls should be lime-washed; in fact, every particle of the house must be thoroughly cleaned. For this purpose a house should be selected in which a hotbed of leaves can be prepared, for the moist genial heat derived from them is very much more beneficial to the plants than the dry heat thrown off by hotwater pipes. It is surprising how much more readily various plants commence activity when placed upon or plunged amongst leaves than what they do when stood upon the surface of ashes or gravel, and the temperature of the house maintained by fire heat. Oak or Beech leaves for this purpose are decidedly the best, for they retain heat much longer than those of any other kind. When the bed is made the leaves must not be saturated by heavy rains, but should be stored for the purpose as dry as possible. The heat derived from the leaves will be ample for exciting the plants to be forced into activity, for nothing is gained by subjecting such plants as are generally forced to high temperatures at first. On the other hand, failures more frequently result from this than any other cause.

**Lily of the Valley.**—Those plants that were assisted by heat and moisture to make their growth early in the season will have been at rest for some time. These, if introduced into a heated structure where the temperature ranges about 65°, will come forward rapidly into flower. The pots containing the plants may, if practicable, be plunged amongst leaves or cocoa-nut fibre, and their crowns excluded from the light where bottom heat can be maintained at 80 to 85°.

**Imported Single Crowns.**—These can be obtained now, and are largely used for early forcing, but they will not come forward into bloom so readily as home-grown plants. They are invaluable for succeeding them, and can be had in bloom without very much trouble by Christmas. The crowns may be potted, placing about twelve or fourteen in each 5-inch pot, or thickly together in pans or boxes of leaf mould or cocoa-nut fibre. The two latter we practise for early work, as the crowns come forward at first irregularly, and it is very difficult to obtain good potfuls without they are made up. When required entirely for cutting this is decidedly the best plan that can be adopted.

Strong bottom heat is necessary to start these single crowns early in the case. A good place for plunging them is a close propagating frame. Whether they are in pots or boxes they should not be introduced into heat directly they arrive, for if they are it is questionable if ever they will start into growth. They should be stood outside for a time, and if exposed to frost before they are placed in frames all the better, for they will start to throw up their flowers more freely afterwards.

***Diclytra spectabilis.***—Imported roots of this easily forced plant can now be obtained, and may be potted in good soil in 5 and 6-inch pots. Home-grown roots are as good as those that are imported from the Continent annually, provided they have been prepared for the purpose. When the stock is grown at home the finest crowns only should be selected, and the smallest replanted for the following year's supply. Care must be taken that the roots are planted in a sheltered warm position, for they start into growth early in the season, and are very liable to be injured by spring frosts. When the roots are grown for forcing the plants must be protected by mats from frost, or they will be only poor crowns when the time for lifting arrives.

#### THE FLOWER GARDEN AND PLEASURE GROUND.

**Flower Beds.**—In some of the warmest parts of the country many of these were, up to November, looking remarkably gay, Zonal Pelargoniums, Calceolarias, Lobelias, and similar summer bedding plants being yet in full boom. Unfortunately this gay appearance has prevented those in

charge getting the beds cleared and replanted with the winter plants before wet and unfavourable weather sets in. All beds to be replanted ought at once to be cleared, manured if necessary, dug, and refilled as fast as possible, and before the soil becomes saturated. Other beds that are looking shabby, and which will not be planted during the winter, should be cleaned, and later on, when the leaves are all off the trees, be roughly dug up. If these have not been manured for some time it is advisable to dig in some rough manure or half-rotten leaves. The rougher the ground is laid up the better will it break down when the time arrives for planting, and the soil cannot well be too fine for the purpose. Leaf soil is, perhaps, the best material for either mixing with the soil or for surface dressing; consequently, instead of wheeling all the old hotbed material, and which, perhaps, consists principally of decaying leaves, into the kitchen garden, a good heap should be reserved for the flower garden, and turned once or twice during the winter. Last spring we used plenty of this material in the beds planted with Verbenas, Begonias, and Calceolarias, and during the whole of the hot and dry summer experienced they continued to grow and bloom surprisingly well.

**Cannas, Dahlias, and Gladioli.**—The roots of the two former should be lifted before a severe frost occurs, and after they have dried somewhat be stored away in either a light cellar, loft, or shed, where they can be heavily covered with some kind of protecting material in case of severe frosts. In order to prevent shrivelling or dry rot, the roots should be covered with nearly dry soil, sand, leaf soil, or cocoa-nut fibre, and they should be occasionally examined, and any decaying portions be cut away. Many store them under the stages in greenhouses, but here there is generally too much moisture to suit them, and the Dahlias, especially when in such positions, are apt to start into growth much too soon, and they would do far better in the Potato shed. The tops of the Cannas should be roughly cut away to within 6 inches of the roots, the same length being left on the Dahlia stems, and to these should the labels be strongly tied. Gladioli corms should have their tops shortened, and then be laid thinly in shallow boxes and placed on dry sunny shelves for a few days to harvest properly. They may either be stored in dry sand or in drawers, but must be protected from severe frosts. The commoner sorts of the *Brenchleyensis* type and *Colvillei* varieties may usually be safely left in the ground, and in a few years form strong groups.

**Autumn Propagation of Roses.**—As a rule, Roses on their own roots are of the greatest value, being more vigorous and durable than those worked on the Manetti stock in particular. No time should be lost before the cuttings are inserted, as so much depends upon their forming a callus before the warm spring weather stimulates top growth. The long well-ripened growths that dwarf Roses are in the habit of throwing up are suitable for the purpose, and if some of these long shoots can be procured from the standards so much the better. Cut them into lengths of from 10 to 12 inches, cutting to a joint and cleanly at the biggest end. Before they have become dry, or in the least shrivelled, plant them in the open ground, which has previously been dressed with short manure or leaf soil and deeply dug. The cutting may be dibbled in to about half their depth, taking care that they touch the bottoms of the holes; or trenches may be drawn out with the spade, and the cuttings laid in and firmly covered with the soil. Supposing the cuttings are strong and well ripened, many of them will grow into strong flowering plants next summer, and therefore they should not be put in very thickly. The rows may well be placed about 2 feet apart, and the cuttings 9 inches asunder, every other plant being removed during the following planting season. They will not strike root satisfactorily in loose ground, and for this reason the ground about them should be occasionally trampled.

## THE BEE-KEEPER.

#### DIFFICULTIES IN UNITING AND HIVING SWARMS.

In my article of August 7th, page 131, I mentioned the uncertainty in some circumstances, after hiving a swarm, of having them perfectly secured, part or whole of them being liable to leave, which a correspondent, "W. G.," thinks not quite complete. I will therefore endeavour to supply that deficiency regarding bees leaving their hives after being hived, as well as the difficulty of inducing two swarms to join peaceably.

First as regarding bees swarming. It is a mistaken idea that much room will prevent swarming. Smallness of hive, causing overcrowding, is but one of the many causes of bees swarming. It is quite a common occurrence for bees to swarm from hives larger than their needs require and not full of comb; yet the only means we can use to prevent swarming is to give additional room, further secured by the presence of a young, fertile, and prolific queen, which in the absence of drone or ragged combs intervening, and I may add interchanged combs, for the purpose of spreading the brood—an objectionable, certainly questionable, proceeding. As a rule swarming does not readily take place unless when the honey season is so prolonged as to task the queen more than nature can fulfil. This is what we see when our bees are at the Heather. Then the bees, dissatisfied with



the tired queen's behaviour, make preparations for swarming, but which does not always take place, as they seem satisfied if the queen regnant be deposed and the supernumerary ones be destroyed. The same thing occurs where bees are fed whose queen has previously done her summer's work. If the summers would come as we wish we would never feed bees at all, but as it is we stimulate only to prevent eggs and grub being destroyed, and feed in a proper manner and at a proper time when want looms in the distance.

The next question to be considered is that of swarms unsettling. It is a well-known fact that bees previous to swarming search out for a future home. Their keenness of scent leads them at once to beeless and queenless hives and recesses containing combs, which they prefer to empty hives, and from which they will abscond to those containing combs which they had previously found and cleaned. While bees are fond of taking possession of furnished houses there are times that they disregard comfort and ignore their future well-being by hiving in the most unlikely places and building combs therein, such as I have often witnessed in a hedge or on a branch of a high tree where they were fully exposed to the storm.

One remarkable instance of bees swarming into an old building situated at Leadhills—the highest inhabited place in Scotland, being about 1280 feet above sea level—took place three years ago, that year being one of the worst on record, the bees being in absolute starvation; yet this swarm not only left its parent hive, but flew from a much lower altitude to that height and a distance of five miles, in which position it survived for two seasons. The only solution I can offer is that, as is often the case, these hilly districts escape much of the prevailing storms, and so favoured the bees in finding a tract of flowers with an immunity from rain.

Swarms do not settle well where there are more than one queen either from the parent hive or a strange one. Stranger bees have the same effect. They encase the queen at once, and then a general commotion takes place. Under these circumstances the queen should be searched for and caged until quiet is restored, or give the bees something that will cause them to look after their own business. This I do, and am often successful. I saturate some material with carbonic acid and push it into the hive, then close it a little, when the queen is instantly set at liberty. A feed of syrup will sometimes prevent a swarm absconding when the bees have issued from a poor hive in a bad season. Bees with empty stomachs do not care to be housed in an empty hive.

The joining of two or more swarms together is one that requires care and consideration. As a rule bees defend their stores, and while they are so doing defend their queen. It is for the former that bees attempt invasion, but it is a fact that it is the latter that suffers first. Kill the queen, and you disarm her subjects or give more courage to the invaders. Bees are very jealous of strangers whether with or without a queen; hence there is always a difficulty of joining bees to a weak swarm, for the one will defend and the other enters, but reluctantly when a queen is present, and when they do so through jealousy kill every bee and queen, even the syringing and scenting has been faithfully carried out.

A very old custom is joining swarms with peameal being liberally strewn upon both lots, but in this I never had much faith. About a month since I visited a successful operator, who assured me that it never failed. The bees in combed hive were first sprinkled, then the driven bees at some time subjected to a severe shaking, then fell on to the other hive. The floorboard was then quickly placed over the whole and the hive put in position, when, as the expert said, "There it is; I never saw it fail." "What are the bees pouring out at the door so much for?" "They always do that for a little," was the rejoinder. "Do they come back?" "Wait and I would see." As they seemed to me to be already out I had only to wait their backcoming, which was to a hive not intended for doubling purposes, while clusters hung about everywhere with but little intention of going back, while some entered other hives to be slaughtered. I had the rest of the driven bees presented me, which I utilised in a more satisfactory manner. Just as we see success attending the merest tyro in introducing queens to stranger bees, who in turn tell us that precautions are unnecessary to success, even though I have after the greatest care been unsuccessful, and have found that joining swarms requires caution also, notwithstanding the success of the inexperienced by haphazard manipulations.

The only sure method of joining alien queens to bees is to put the raising of a young queen beyond their power, then after twenty-four hours caging in close proximity to the bees, they will, in ninety-nine cases out of a hundred, accept them, provided stranger bees are not present. There are but two ways

I know of successfully joining two swarms. The one is to have both bees filled with syrup or honey; the other is to put both lots into separate empty hives, then mix the two, either with or without sugar. The foregoing will perhaps enlighten "W. G. P.," and I will now answer his direct questions, but before doing so may state that the returning of swarms to the parent stock is one that can only be successfully accomplished after the queen or queens of the swarm have been killed, and all but one in the stock hive.

In reply to the first question, "Why do you require a very light floor?" I answer, Because the box of itself is light, necessary for hiving bees in out-of-way places, as well as for convenience in carrying a swarm some distance. The reason that it is moveable and "not fast," is because if it were fast the bees could not be placed into it, there being no other opening. When the crown is closed, which is in three or more pieces pivoted on end a quarter of an inch or so from one edge, which makes them stronger (being wrought on the solid crown pieces) and allows holes for their reception to be a little from top edge of box. These crown pieces are cut short the width of the box to prevent crushing bees in their downfall, when the wire that keeps them up is withdrawn. A facing of wood is nailed on the top edge of the box to cover opening, so that bees cannot escape, being necessary that the crown is close, the wire keeping the flap-boards up, and regulates their falling when withdrawn. There is not the slightest danger of bees being killed with these light flaps when they fall down, as they must not press upon any part of the box. In fact, when the bees are in it they to a great extent keep up the flaps, and fall gradually, so that no bees are injured. Perhaps the foregoing description will obviate the necessity of a woodcut, but if desired I will have a drawing prepared. Bee houses and sheds should be made so as to accommodate many hives in little space without confusion. Frames of honey are very useful for giving to weak hives that require it and are backward in feeding; otherwise, I prefer, when feeding is necessary, to feed every hive separately, as then combs are built fitting each other better than when transferred from other hives which cause irregularities; 77 lbs. supers and extracted honey from each stock is very good.—LANARKSHIRE BEE-KEEPER.

#### TRADE CATALOGUES RECEIVED.

Corry, Soper, Fowler & Co., 18, Finsbury Street, London, E.C.—*Illustrated Trade List of Garden Appliances.*  
Spratts Patent, Henry Street, London.—*Illustrated Price List of Dog, Poultry, and Pigeon Appliances.*



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Books (A. Spiering).**—Sutherland's "Hardy Herbaceous and Alpine Flowers" and Vilmorin's "Fleurs de Plaine Terre." There has been no comprehensive work published on trees and shrubs since "Loudon's Encyclopædia," except Hemsley's Translation of Decaisne and Naudin, published by Messrs. Longman. We presume you know Koch's "Dendrologie," published by Enke of Erlangen.

**Aphides on Pink Rosets (F. W. S.).**—The box arrived broken, and the root perfectly dried, no insects being visible, having "shrivelled to nothingness." We can suggest no other remedy than a solution of petroleum or hellebore. Half a wineglassful or a little more of petroleum mixed in a gallon of soapsuds would act as a manure rather than otherwise, and might eradicate the insects; or 2 ozs. of hellebore powder made into a creamy paste with hot water, then mixed in a gallon of soft water and applied, might have the same effect. If you try either of these remedies we shall be glad to hear the results.

**Cutting Down Chrysanthemums (W. W. W.).**—We presume you refer



to the practice of cutting down the plants in May or early June with the object of rendering them dwarf, and at the same time of producing good blooms. It is impossible to give categorical answers to your question. Very much depends on the condition of the plants at the time as to whether they can be cut down with advantage. Each cultivator must exercise his judgment, and should try half a dozen of the early-flowering varieties as an experiment, and note the results the first year. Mr. Harding won the £25 cup at Kingston with blooms mostly from cut-down plants, but no one else has done so, while some persons could not win a 5s. prize by the same practice. It is not so applicable to the Japanese varieties, yet Mr. Pithers, who is a good grower, has succeeded in thus treating some of them. See his remarks on another page. They are left out of doors after being cut down, and shifted as needed afterwards, manure being given the same as if not cut down. Three or four or more growths are allowed to extend according to the strength of the plants, and very rarely indeed is it necessary to stop those shoots.

**Physalis alkekengi (R. Morse).**—The above is the botanical name of the plant of which you have sent a spray. It is popularly known as the Winter Cherry. It is a hardy perennial, and may be raised from seeds or increased by division of the roots. The round red berries have an acidulous, slightly bitter, and not unpleasant flavour. They are chiefly recommended as a diuretic, but in America they are commonly eaten to quench thirst, and in Germany, Switzerland, and Spain they are served at the table as dessert along with other fruits. The fruit of *P. pubescens*, a native of North America, is eatable, and made into confections. It is now naturalised in Italy, where it is cultivated in gardens and highly esteemed for its sweet acidulous berries.

**Rogiera gratissima (D. Masters).**—Perhaps the following figure will give you an "idea of what the plant is like." It is admirably suited for a



Fig. 74.—Rogiera gratissima.

greenhouse, and with ordinary careful attention to its cultural requirements it flowers freely during the summer. The only objection that can be urged against the plant is that it is slightly straggling in habit, but a little judicious pruning will go far to obviate this disadvantage. The flowers are of a soft pinkish white tint and wax-like texture, and, moreover, possess a most agreeable fragrance, rendering them pleasing either on the plant or when cut. The culture, though not difficult, requires the care of a judicious plant-grower. One point of particular importance is that the soil and pot be sufficiently well drained to permit the free passage of the water, as stagnant moisture soon produces a most injurious effect on the plant. A compost of light turfy loam, a little peat, and a good proportion of sand is the most suitable, exercising care to avoid overpotting.

**Preserving the Colours of Leaves (Horti).**—The following plan is recommended by a lady who has been successful in preserving autumn leaves:—As soon as possible after gathering them the leaves must be pressed. If they begin to wilt or shrivel before you are ready to press them, put them in water and keep them there till they revive. See that no soil, no foreign substance of any kind, is on either side, and then with a warm, not hot, flat iron press and iron each leaf on its upper surface till it is perfectly dry, spreading it for this purpose on several layers of paper, or on an ordinary ironing-board, just as if it were cotton cloth. This over, oil each leaf on the same side on which it was ironed with linseed, olive, or lard oil, using a small camel-hair brush or a bit of cotton batting tied to a stick, and then place them on dishes in the sunshine to dry. When dry reject all those that have a semi-transparent or oily appearance; to prevent this get the thickest leaves you can for your collection, and do not oil them too generously nor with a rough brush. It is a mistaken notion that autumn leaves need varnishing. Varnish makes them brittle and more liable to crack, while the excessive lustre that it imparts is unnatural. Oiling gives sufficient polish,

deepens, clears, and preserves the colours, and keeps the tissues somewhat elastic. When the leaves get dusty wipe them with a damp cloth; if they curl damp them, and place the branch for a few hours between papers under a pile of heavy books.

**Malakovna Apple (E. Leicester).**—Undoubtedly there is an Apple of the above name, though your friend, "who knows them all," does not appear to know this variety. We know it very well, and give its description:—Fruit small, roundish, in size and shape not unlike a good specimen of Golden Pippin, very regular in outline. Skin deep bright crimson over the entire surface, and wonderfully beautiful when growing on the tree. Eye full, with long pointed segments, which are reflexed at the tips, set in a shallow depression, closed. Stalk long, slender. Flesh whitish, tinged with pink, firm and rather dry, but sweet and pleasant. The tree has a fine habit of growth, and is very productive, seeming one mass of scarlet when full of fruit. Highly worthy of cultivation as an ornamental variety. This was received from Russia by the Royal Horticultural Society.

**Dressing Vines—Pruning Scissors (F. J.).**—Prune the Vines as soon as the leaves fall, then wash the rods well with Gishurst compound or soft soap at the strength of 5 or 6 ozs. to a gallon of water, applying it at a temperature of 120° or 130°, scrubbing them well with an old spoke brush; then you may paint the rods with sulphur with just sufficient clay to cause it to adhere to the wood. Wash every part of the house thoroughly with hot water, and if the border is in the house remove an inch or two of soil from the surface and add fresh. You can procure pruning scissors from nearly all nurserymen and seedsmen who advertise in the Journal; those, for instance numbered 33 in Veitch's catalogue being suitable for the purpose. We name these for the purpose of being explicit, but the same kind may be had from other vendors of horticultural requisites with whom you may happen to have business connections.

**Figs on Wall (W. H., Hants).**—As the trees have ripened the wood so well, and they are trained to a south wall, it is scarcely likely they will need any protection in the winter; but should the weather prove very severe in spring a few Spruce boughs may be useful for the protection of the embryo fruit. This now, if the trees are in a bearing state, will be visible in the axils of the leaves, or where the leaves have fallen off, resembling bold buds. Any incipient fruits that are as large as horse beans now will fall in the spring whether the trees are protected or not. We should not think of protecting unless the weather should prove unusually severe.

**Names of Fruit (W. M. Rose).**—Comte de Lamy. Many packages must remain over till next week.

**Names of Plants (C. Simmons).**—Your plant is *Cestrum aurantiacum*, which is very effective in the conservatory at this period of the year. (Reader).—1, *Eulalia japonica zebrina*; 2, *Santolina incana*; 3, *Alstroemeria psittacina*. (G. W. B.).—Chrysanthemums are florists' flowers, the varieties of which we do not undertake to name, as several of them resemble each other too closely. The names can usually be determined by comparing flowers with those staged at exhibitions or in nurserymen's collections at this season of the year.

#### COVENT GARDEN MARKET.—NOVEMBER 12TH.

OUR market still remains quiet and prices are without alteration. Large arrival of Canadian Apples to hand.

##### FRUIT.

		s. d.	s. d.			s. d.	s. d.
Apples .. ..	½ sieve	2 6	to 3 6	Oranges .. ..	100	8 0	to 12 0
Chestnuts .. ..	bushel	0 0	0 0	Peaches .. ..	per doz.	3 0	8 0
Cobs, Kent ..	per 100 lbs.	65 0	0 0	Pears, kitchen ..	dozen	0 0	0 0
Currants, Red ..	½ sieve	0 0	0 0	„ dessert .. ..	dozen	1 0	3 0
„ Black .. ..	½ sieve	0 0	0 0	Pine Apples English ..	lb.	4 0	0 0
Figs .. ..	dozen	0 6	1 0	Plums .. ..	½ sieve	0 0	0 0
Grapes .. ..	lb.	0 6	4 0	Strawberries .. ..	lb.	0 0	0 0
Lemons .. ..	case	15 0	21 0	St. Michael Pines ..	each	7 0	10 0

##### VEGETABLES.

		s. d.	s. d.			s. d.	s. d.
Artichokes ..	dozen	2 0	to 4 0	Lettuce .. ..	dozen	1 0	to 1 6
Beans, Kidney ..	lb.	0 3	0 0	Mushrooms .. ..	punnet	0 0	1 6
Beet, Red .. ..	dozen	1 0	2 0	Mustard and Cress ..	punnet	0 2	0 0
Broccoli .. ..	bundle	0 9	1 0	Onions .. ..	bunch	0 3	0 4
Brussels Sprouts ..	½ sieve	2 6	3 0	Parsley .. ..	dozen bunches	2 0	3 0
Cabbage .. ..	dozen	0 0	1 0	Parsnips .. ..	dozen	1 0	2 0
Capsicums .. ..	100	1 6	2 0	Potatoes .. ..	cwt.	4 0	5 0
Carrots .. ..	bunch	0 3	0 4	„ Kidney .. ..	cwt.	4 0	5 0
Cauliflowers ..	dozen	2 0	3 0	Rhubarb .. ..	bundle	0 4	0 0
Celery .. ..	bundle	1 6	2 0	Salsafy .. ..	bundle	1 0	0 6
Coleworts .. ..	dcz. bunches	2 0	4 0	Scorzoneria .. ..	bundle	1 6	0 0
Cucumbers .. ..	each	0 2	0 4	Shallots .. ..	lb.	0 3	0 0
Eradive .. ..	dozen	1 0	2 0	Spinach .. ..	bushel	2 0	4 0
Herbs .. ..	bunch	0 2	0 0	Tomatoes .. ..	lb.	0 6	0 0
Leeks .. ..	bunch	0 3	0 4	Turnips .. ..	bunch	0 4	0 6



#### LIVE STOCK.

#### SEASONABLE HINTS.

To subject cattle to the same method of treatment without reference to individual peculiarities and wants is so clearly opposed to the dictates of reason and common sense that we might fairly suppose it could never be done; yet how frequently is it so, and how many valuable animals are lost through the carelessness and ignorance



of those having charge of them. A good bailiff and stockman should know each animal in their charge intimately—temper, health, condition, strength should all be noticed critically, and the treatment and care be adapted to all special wants. Common wants ought to be, and in point of fact are, provided for generally, yet even for these there are sometimes many little things wanted, and it is precisely little ills which lead to great ones. Let us recapitulate important points in the winter quarters of cattle. We recently saw an article setting forth the superior hardiness of Devon cattle, and claiming for them a capability of bearing full exposure out on grass throughout winter; but the writer had the good sense to acknowledge that such exposure was owing to a general want of suitable yards and buildings upon Devon farms for sheltering cattle in winter. For all cattle we claim in winter well-drained, well-littered yards, with enough open lodges and close snug sheds to take in all the cattle; sheds whitewashed at least once a year, if possible twice; drinking troughs of brickwork faced with Portland cement, with fresh water running through them constantly. Aspects should receive attention, and all yards incline to the south. Let there be plenty of feeding space both of open cribs out in the yards, and back and side cribs in the lodges. The lodges should be fresh littered daily, and droppings thrown out morning and night. Never suffer cattle to sleep upon sodden or filthy litter. Keep rock salt in all feeding cribs. As litter accumulates in the yards drains are liable to become choked, and must be occasionally examined. Let bad-tempered cows have brass knobs screwed upon the tips of the horns, and keep weak and delicate cows away from them. No delicate cow or other young beast that is delicate should remain out in the open yard or lodges at night. Establish the practice of shutting them in close sheds at night regularly from autumn onwards, and it will then be done from force of habit; but it will be done all the better if the master's eye is expected to be looking round frequently.

Working horses stabled for winter require careful grooming, and it is our practice often to visit the stables early in the morning to see if this has been done. The horses should be dressed and fed, and the stables cleaned out before the men go to breakfast. The coat of a farm horse often becomes so covered with dust and dirt in a single day that without proper grooming there will be considerable risk of sores from the friction of the harness. If possible let the horses have large loose boxes instead of stalls, often so narrow that they have not room to lay down in comfort; and see that the bedding litter is dry and clean. We use dried bracken for this purpose; it makes nice soft beds, and is an excellent substitute for straw.

Returning to the cattle, we may mention the loss of two yearling calves last winter from inflammation of the lungs, caused, we believe, by being driven about by stronger animals, and subsequently standing while worried and heated in an open lodge into which a cold cutting wind swept fiercely from the north-east. The symptoms are dullness, a drooping head, little or no rumination, heaving flanks, a cough, the mouth hot, the horns, ears, and feet very cold. It will be seen that such losses impel us to be urgent with advice to bestow great care upon every detail for the comfort and safety of live stock in winter. Cows should be so managed upon the home farm that one or two should calve during each month of winter to impart flavour and freshness to the butter. If this is not done it is hardly possible for the most skilful dairywoman to produce really good butter, good in colour as well as in flavour. It is so important to have an abundant supply of dairy produce that some fresh cows should be brought into the herd every year, and old or faulty ones passed on to the butcher. Enough should be brought in to admit of selection, and if this is done in winter the older cows may calve in spring or early summer, so as to derive full benefit from the grass. A cow newly calved is still one of the things a farmer may sell at a profit, so that any young ones which it may prove desirable to discard may be sold. Another matter worthy of our best attention is to have a good class of cows upon the farm, not necessarily costly pedigree animals, and either to keep a good bull or take all possible pains to obtain the service of one. It costs no more to keep a well-bred animal than it does to keep an inferior one, and the superior quality of calves, milk, and butter all tell favourably in the balance sheet.

#### WORK ON THE HOME FARM.

**Horse and Hand Labour.**—Although the culture of Hops is difficult and expensive, yet, as affording a crop which does pay when it can be secured in good condition, it is probable that still greater attention will be given it in the somewhat limited area in which it is found to answer. The value of an average crop of 10 cwt. per acre may be stated at £60, a very tempting amount in comparison with other farm crops; but it must not be forgotten that the outlay for poles, culture, picking, drying, and packing the Hops is also considerable, and that results depend in some measure upon weather. It is because November is the best time for Hop planting that we now make special mention of it. If strong roots, technically termed "bedded sets," are planted now the plants will become sufficiently established to make growth strong enough to run to the top

of a 10-foot pole, and bear a fair crop next summer; but if planting is not done till next spring the growth will be weak and the crop nil. The best sorts are Early Prolific, Grape, Jones, Fuggle's Goldings, and White Bine Colegates. The stations or "hills" are 6 feet apart, with three plants to each "hill," arranged in the form of an equilateral triangle 1 foot apart, and each plant requires a separate pole, which is thrust into the ground beside it in spring and removed when the Hops are picked. The land reserved for planting usually receives an autumn fallow, is ploughed deeply, made thoroughly clean, and about a bushel of rich farmyard manure mixed with soil at each station ready for the planting.

Another crop of considerable importance is the Black Currant. To do full justice to it a deep rich soil is necessary, and then it develops vigour of growth and abundance of fruit that in quantity and value exceeds all other fruit. Plant strong stemless bushes now, with the branches springing direct from the ground, 6 feet apart. The favourite sorts of the Kent fruit-growers are Maples, Green Bud, Baldwin's, and Lee's Prolific.

Mention is made of the Hop and Black Currant as being worthy of culture under suitable conditions. Novelty in cropping ought, however, to be adopted with caution. The question of profit and loss must not be forgotten even upon the home farm. Rigid economy is the order of the day now, and it has to be enforced both in horse and hand labour, therefore anything of a speculative nature must be avoided.

#### PRICKLY COMFREY.

WE have about a quarter of an acre of ground which for some years has been employed as a cottage garden, chiefly for the growth of Potatoes, and which my employer is now desirous of planting with Prickly Comfrey, and as I know but little of the plant I should be grateful if your agricultural correspondent would give me a little information on the following points respecting its culture:—1st, As to the best season for planting; 2nd, The distance the plants should stand from each other; 3rd, How long will an established crop be serviceable without renewing with young plants. This, and any further information respecting the plant you can kindly obtain for me, will be thankfully received.—A. E.

[Plant strong crowns 2 feet apart now in deep rich soil. The plant is perennial and lasts for many years, but it requires a heavy dressing of farmyard manure to be dug in between the plants every winter. We have a small patch of it containing a hundred strong plants which we planted a few years ago in a deep alluvial soil by way of trial, but we have not extended the bed to several acres of the same soil as was our original intention if it had answered our expectations, which it certainly has not. It is vigorous in growth, and may be cut for green food three or four times during summer, but the only animals that have taken at all kindly to it are pigs. Horses, sheep, and cattle refused to eat it, and we have practically discontinued its use. It is said that they may be made to eat it, but, so far as we have seen, they must first be brought to the verge of starvation, and we cannot advocate such a proceeding. If you decide to plant some procure strong crowns with roots, not root cuttings, and you will obtain a fair crop of it the next summer. We had no trouble in procuring strong plants, for the nurseryman who had somewhat rashly devoted some space to its propagation to meet a popular cry was apparently glad to get rid of it.]

#### OUR LETTER BOX.

**Storing Potatoes (J. S.).**—The tubers keep very well packed in long and rather narrow heaps, say about 3 feet wide at the base, provided they are sound and dry when stored, and are well covered with straw and earth to exclude frost. If the land is wet the heaps are best formed on the surface, as excavations often act as water traps, in which Potatoes cannot be expected to keep well.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1884. November.		Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass.		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.		
Sunday .....	2	29.941	55.4	53.2	S.E.	49.3	60.0	49.8	70.8	43.6	0.233	
Monday .....	3	30.105	42.4	40.2	N.W.	49.4	50.4	38.4	81.7	32.7	—	
Tuesday .....	4	29.936	48.7	48.0	E.	47.3	56.6	34.6	75.4	25.6	0.023	
Wednesday ..	5	29.928	53.2	49.8	S.E.	48.5	59.9	47.4	84.6	43.1	0.489	
Thursday ....	6	30.054	50.1	49.4	N.E.	49.3	58.1	48.7	88.8	47.2	0.106	
Friday .....	7	29.836	55.1	53.3	E.	49.7	60.2	48.8	80.1	42.3	0.129	
Saturday ....	8	30.389	41.9	41.3	S.E.	48.9	53.5	36.9	76.6	29.4	—	
		30.026	49.5	47.9		48.9	57.0	43.5	75.4	37.7	0.980	

#### REMARKS.

2nd.—Generally fine and mild till 7.30 P.M., then cold and rainy.

3rd.—Fine bright day.

4th.—Drizzle early, then fine.

5th.—Fine and bright till 5 P.M.; wet evening.

6th.—Fog and rain all day.

7th.—Fine and bright early; forenoon fair; wet afterwards.

8th.—Fine bright morning.

A calm week with welcome rain; temperature slightly above the average.—G. J. SYMONS.





20	TH	Hull (two days), Taunton, Aylesbury, and Dublin Shows.
21	F	
22	S	Loughborough Show.
23	SUN	24TH SUNDAY AFTER TRINITY.
24	M	
25	TU	Manchester, Liverpool, Basingstoke, and South Shields Shows (two days).
26	W	York Show (three days).

### LIFTING AND PLANTING ROSES.

**N**O flower garden can be considered complete without its bed or border of Roses. The sweet and handsome flowers of the Rose are admired by all, and fortunately can be produced by owners of even small gardens. To cultivate the queen of flowers successfully it is necessary to make good preparation at the commencement, for if a hole is merely dug just large enough to hold the roots, as is too frequently the case, failure is most likely to follow. Few garden flowers are easier to grow well than the Rose, and if those intending to commence their culture follow the directions that will be given success may fairly be expected.

There can be no question about the best season to plant Roses. The wood is now well ripened, but still carrying foliage. This is the condition in which they should be planted if strong vigorous growth and large flowers are looked for another year. When planted before the leaves fall numerous young fibres are produced before the winter, but if planted later when destitute of foliage they do not make roots before the approach of spring, and consequently are not in the same condition for making strong robust growth the first season after planting. This applies with equal force to both Hybrid Perpetuals and Tea varieties as well as all other Roses.

Frequently the planting of Tea varieties is advised to be left until the spring when severe weather is past. An old and yet very general system is to lift all these varieties and heel them in at the foot of a wall or other suitable position, and protect them during the winter if necessary. Those who practise this system never think of planting Tea Roses before the end of February, but this is a mistake, for they are as hardy if not hardier than Hybrid Perpetuals. I have on many occasions seen the last-mentioned killed in large numbers, while the former have endured the weather uninjured. My advice is, Plant at once, and protect afterwards as will be described if very severe weather is experienced during the winter.

Failure in many instances has resulted from the injudicious selection of a position for these plants. If possible they should have a sheltered place, yet fully exposed to the sun and where abundance of air can play amongst them. It is much wiser to plant them entirely in the open with no shelter whatever than to select places for them closely surrounded by evergreens and trees. Many Rose gardens that I am acquainted with are in such positions, and cannot be too strongly condemned, for air and light are excluded from the plants, preventing the thorough maturation of the wood, which is killed in winter, and in summer the plants become a prey to mildew. This is by no means the only objection to such places, for if they are within reasonable distance of large forest or other strong-rooting trees these soon take possession of the soil, impoverishing it, so that the Roses cannot grow strongly. If shelter can be given and the evils

pointed out avoided, it is beneficial; if not, select the most open position that can be found for them.

It is useless to plant Roses in poor soil. In the majority of instances the natural soil will grow them well, provided it is liberally enriched with manure. If the soil be heavy it may be necessary to work road scrapings or coarse sand to render it porous. Charcoal, coal ashes, or even sandstone crushed is very useful for this purpose. If the ground is very heavy a portion may be removed, and the remainder intermixed with a lighter soil. Roses, especially Hybrid Perpetuals, like strong soil, and do much better in it than in that of a light sandy nature. If the soil is very light and poor it should be removed to the depth of 18 inches and replaced by good loam, the top spit of an old pasture being very suitable. This, if possible, should be obtained where the subsoil is formed of clay; but this cannot always be done, and the next best course to adopt is to dry clay and reduce it to powder, then add one barrowful to every seven of soil. In this condition the clay can be incorporated with the soil much better than when chopped up and used in a moist condition.

Where the soil is suitable in texture it should be trenched deeply. If the land is poor and removed to the depth indicated the bottom should be well dug and liberally enriched with decayed manure, freely mixed with some of the new soil, and then left at the bottom, the better soil being placed above it. Roses, whether standards or dwarfs, should never be planted in soil that has not been deeply dug, for they will not make nearly such satisfactory progress.

The most suitable manure, especially on light or intermediate soils, is cow manure, but it should not be used in a fresh condition, for it might prove disastrous. It should be stacked for at least three or four months previously. This manure should not be used on heavy soils, for it is too close, horse manure being preferable. If cow manure cannot be obtained any good decayed farmyard manure will answer the same purpose. The quantity to be used entirely depends upon the richness or poorness of the soil. A few half-inch bones may with advantage be applied whether the soil is light or heavy; these should be used at the rate of one 6-inch potful to each barrowful of soil that may be placed into the beds.

The soil for Tea varieties should be very much lighter than for Hybrid Perpetuals, and nothing is better for rendering it light than coarse red or river sand with a good quantity of wood ashes and leaf mould freely intermixed. The beds should be kept well above the surface of the ground. This is especially necessary when planting in a wet locality.

The ground upon which Roses are planted should be well drained, or the roots will soon perish. No broken bricks or clinkers will be needed at the bottom of the beds. If the beds are by the side of a walk or near to a main drain the work of draining is simple, for a 2-inch pipe can be run through the beds at a depth of 2 or 2½ feet and carried into the nearest drain. The ordinary burnt clay drain pipes should be used, and over them a few clinkers or broken bricks can be placed to prevent the soil entering the pipes. Such precautions in drainage only are needed in low districts where the rainfall is heavy and the subsoil clay. No artificial drainage is needed when the ground is at a higher elevation and the subsoil formed of gravel or rock.

Planting Roses must not be performed when the soil in the beds or borders is in a saturated condition. The best plan is to have the Roses in readiness and plant them directly the beds have been dug before heavy rains come. They do better afterwards, and commence forming roots at once if the foliage is upon them when planted in moderately moist soil.

If the plants are upon their own roots so much the better, for the majority of Roses do well in this way, and last longer on either light or heavy soils than worked plants. If the soil is heavy those upon the Briar are decidedly the best, and will last much longer than those worked upon the



Manetti, which succeed best on light soils. The union should be buried below the surface of the soil to induce the formation of roots from the Rose. In low-lying districts the Briar should be used, and the union of the Rose and stock must not be buried unless they were worked close to the root, for this stock will live above the ground, and the Manetti will not do so long.

Tea Roses if worked should be as near the root as possible, and upon the Briar, for they have done the best upon that stock with me. In planting, the union should be well buried, not only for the purpose of forming roots, but for the protection of the lower part of the plant during severe weather. When planted moderately deep, if the top be killed by frost, these varieties spring up from the base with great strength afterwards if only a portion of the Rose and roots are left alive.

It is entirely a matter of taste whether standards, half-standards, or dwarfs be planted. Standards in certain positions are effectively planted 3 feet apart and the ground covered with dwarfs. For either beds or borders we prefer dwarf Roses, as better flowers, and a larger quantity of them can be obtained from the same space of ground. The dwarfs should be placed about 18 inches apart, and as soon as they show signs of crowding they should be lifted and placed farther apart, for nothing is gained by unduly crowding them. This, however, can be regulated to a great extent by thinning the shoots at pruning time and after the plants have fairly started into growth. It is an admirable practice when fine blooms are required to limit the plants to a certain number of shoots.

At planting time the long shoots may be slightly reduced, yet may be left fully 2 feet in length. Cutting them close back or nearly so when planting, which I have seen practised by the inexperienced, is wrong. The Rose naturally starts into growth early, and if cut back in autumn the lower buds start into growth in spring and are very liable to be seriously injured by frost.

When fine blooms are wanted beds and borders of dwarf Roses should be lifted occasionally—say every three years. Lifting must be done carefully while the foliage is fresh, and then the plants start into growth the following spring with as much freedom as if they had never been disturbed. The greatest care should be taken that the roots are not dried while out of the soil. Not only does lifting, trenching, and manuring the ground tend to the production of first-rate blooms, but it checks the growth of the plants and ensures their passing the winter in safety. It is a fact that has been proved again and again, that plants which have been lifted and replanted will pass without injury through severe winters, while those left undisturbed have been killed to the ground.

If planting is completed before the ground has become saturated with heavy rains the surface of the beds may be mulched with short manure. A heavy coating need not be given, but more may be added at the approach of severe weather, dry litter or fern being preferable to manure for the purpose of protecting the lower portion of the plants. This should not be left on too long in spring, as it will prove injurious and induce the lower buds of the shoots to burst into growth. Tea varieties need no more protection than Hybrid Perpetuals.

The following are the names of thirty-six good useful varieties for beds, and if twenty-four only are needed plant the first twenty-four named, and if twelve only the varieties given first:—Alfred Colomb, Marie Baumann, Duc de Rohan, Duke of Edinburgh, Louis Van Houtte, Mdle. Marie Rady, La France, Capitaine Christy, Baronne de Rothschild, Boule de Neige, La Duchesse de Morny, Madame Marie Finger, A. K. Williams, Beauty of Waltham, Charles Lefebvre, Duke of Teck, Prince Camille de Rohan, Général Jacqueminot, Comtesse de Oxford, Elie Morel, Violette Bouyer, John Hopper, Francois Michelon, Victor Verdier, Fisher Holmes, Francois Levet, Madame Noman, La Rosière, Brightness of Cheshunt, Horace Vernet, Madame Lacharme, Duchesse de

Vallombrosa, Madame Gabriel Luizet, Madame Victor Verdier, Madame Hippolyte Jamain, and Annie Laxton.

The best Tea varieties for outside planting are Madame Falcot, Alba Rosea, Anna Ollivier, Catherine Mermet, Comtesse de Nadaillac, Madame Lambard, Niphetos, Etoile de Lyon, Comtesse Riza du Parc, Innocente Pirola, Madame Hippolyte Jamain, Madame Willermoz, Marie Van Houtte, Perle de Lyon, Rubens, Souvenir d'un Ami, and Souvenir de Paul Neron. For planting against a wall the following are amongst the very best:—Gloire de Dijon, Lamarque, Belle Lyonnaise, Bouquet d'Or, Maréchal Niel (in favourable localities), and Cheshunt Hybrid.—A NORTHERNER.

## NOTES ON MUSHROOM CULTURE IN SHEDS.

MUSHROOM culture in the open air is certainly the most simple way of securing Mushrooms, and the next most simple and certainly a surer way is to grow them in cool houses and sheds. Speaking from some years' experience, I have more reason to recommend shed culture than either the open air or heated and special Mushroom house modes of culture. Heated and expensively constructed Mushroom houses are, in my opinion, superfluous. I have one at command, but it has not been used for some years, and there is not much prospect of its being used again. As a departure from it we began with a bed under a plant stage in a Cucumber pit, and further by a bed in the potting shed, and they came up so freely there that we followed on with more beds in the sheds until scores have been made without a single failure. Beds have been formed in the potting shed, tool shed, Potato shed, and in other structures of a like character, and fine lasting crops were the result everywhere.

Our supply of manure is obtained from the house stables, and begins early in August. We cannot get a cartload in one day, but the droppings are collected each day and emptied into an open shed in the stableyard; there they are turned over frequently and added to until there is a heap of one or two cartloads, when they are taken to the garden, wheeled into a shed, spread out, and about a fourth of leamy soil mixed in. This tones down the heat and absorbs and retains the qualities of the manure. I particularly like to have a quantity of short straw with the droppings. I would not use droppings without it.

Dry material is of no use, but short matter which is full of urine is capital. Beds made up of one half of this, the other half of droppings, and an extra quarter of soil, are capable of bearing first-rate crops. Very wet manure is never used, as it would heat violently and then become suddenly cold. Extra dry material is not used, as such is always liable to fail to heat, but a medium condition which cannot be accurately described, yet is not difficult to see and understand, is the proper state. Then extremes of a great heat or none at all, and waiting for days or weeks for the heat to rise or fall, and consulting thermometers need never concern the cultivator. The time to avoid all this is to prepare the manure properly. Beds which heat up to 150° or more will never be benefited by it. In such a bed Mushrooms may come and they may not, it is very doubtful; but when the beds can be made up one day, spawned and soiled the next, and the heat rises to 80° or 90° and remains there for weeks afterwards, there is no danger of failure. It is a beginning of this kind I always study and secure with our beds, and satisfactory results follow naturally. A bed of 50° would never bear well, neither will one of 140° or thereabouts. From 80° to 100° is sure. Beginners may benefit by being guided by the thermometer, but they should pay attention to the conditions when it indicates that the bed is right, and always afterwards get the manure as near as possible to the same state before using it. I have not had a thermometer in our shed beds for years, but I know from a sight of the manure before making up what the bed will do. Atmospheric temperatures might concern some growers, where the custom has been to keep the Mushroom house at 60° or 65° day and night, without allowing a rise or fall of 3° for weeks together, but fixed temperatures can never be thought of in sheds, and the best of it is the Mushrooms grow perfectly well in varying temperatures so long as cold draughts can be kept from them. One week the temperature of a shed may be 50° and next it may be 10° or 15° less, but with some protection over the surface of the bed the Mushrooms will never indicate a change.

I have never tried ridge-shaped beds in sheds, as they have all been what might be termed lean-to's, as they are made against the wall and slope down to the front. Some beds have been made 3 feet high at the back and tapered down to nothing at 3½ feet out in front. The manure is rammed and trodden into form as closely as possible. In other cases we have had woodwork fixed to make the bed level across from the wall, and both ways are equally good. When any woodwork is used to keep up the front we do not use wide and closely



nailed boards, but narrow strips are best with a division between of 1 inch or 2 inches, and by putting a piece of spawn here and there near these openings when the Mushrooms come, many of them will appear and grow through between the boards. It is often very curious to see them growing out of chinks in this way. Once a bed was made on a firm ash floor, and the spawn worked so well that Mushrooms came up in the ashes a foot and more away from the manure. This was in a cool shed in December, and it only shows how much they are inclined to grow where the conditions are natural and agreeable to them.

In making up the beds I estimate the space the material will fill, then a layer is put all over the bottom of this and trodden firmly down; another lot added and treated in the same way until the top has been reached and all the material used. Sometimes when we may not have more than a cartload of manure, the bed is not large, but I find small beds from 2 yards to 3 yards in length, if made up every ten days or so, are more useful in keeping up a succession than making larger ones at long intervals. Since last September I have made up six beds, and the largest are not more than 12 feet long and 4 feet wide. The first was spawned on September 1st, and the first dish was cut from it the second week in October. Would a heated house bed have come in quicker? I think not. The second bed, made up a fortnight later, is now bearing well, and the third formed early in October is showing many little buttons.

The spawn bricks are broken into many small pieces and dibbled in 3 inches from the surface almost as soon as the bed is finished. Sometimes it is put in at once, and never later than two or three days afterwards. After dibbling it in the holes are filled and the surface trodden over again, then the soil is put on. This consists of the finest parts of the loam which has been left over in preparing the soil for potting. This should not be too wet or too dry. When too dry it will not bind and does not keep in the heat; when too wet it goes together like the surface of a slate, and then when it becomes drier it cracks in many places and the small Mushrooms are spoiled by this; but when in a suitable binding condition, neither sticking to the spade, hands, or feet, it may be beaten into a good surface and remain in this form. We never wet the surface through a watering-pot before beating down, as this would create the brickbat surface, which we do not like. After the soil has been put on we generally sprinkle a thin layer of sand over the surface, and this prevents many of the little Mushrooms damping off, which they might do in trying times.

As soon as the surface has been finished a thin layer of dry hay, straw, or fern is spread all over the surface, and this is taken off and more put on as each lot becomes moist. This covering prevents the surface of the bed from drying too fast, and keeps off any cold currents of wind from the tender crop. In addition to this, in very cold weather I have put some mats above the hay, and I find this covering a very great assistance in shielding the produce. As our beds do not heat very violently or excessively the surfaces are not dried too much before the Mushrooms come through, and it is very rarely that any water is applied to the surface until the bed has been bearing for a considerable time and shows signs of weakness, then a thorough supply of water heated to 95° and a thick covering of hay afterwards will put fresh life into it and induce another crop to come. In this way two crops may always be taken from one bed, but this is all that can be reasonably expected.

Last year a well-known gentleman in this county saw and was pleased with the way our Mushrooms were growing in the sheds, and having some empty cow sheds he was induced to try Mushroom-growing in them, and he was soon in possession of capital crops. Indeed there is no kind of shed in which they may not be grown freely, and I am sure if many of those who think they could not grow them would only begin they would be astonished with their own success. Good spawn is absolutely indispensable to success. Without this the most skilful growers would fail. I know of one person who had them wonderfully fine last winter from a certain spawn, but since then he has had some from another place, and he has not been able to obtain any Mushrooms this autumn. As choice vegetables are generally scarce from November until April or May, where materials are convenient beds should be made up from October until February, that Mushrooms may be produced throughout the whole of the shortest days.—J. MUIR.

### THE GRAPE SEASON.

As a white companion for Black Hamburgh, and therefore quite an amateur's Grape, there is no variety in my opinion to equal Foster's Seedling. It is in every respect a model variety, as it possesses a good constitution, is very prolific, and produces medium-size compact bunches, the berries also being of medium-size, and the flavour, though not rich, is yet agreeable and refreshing. Like the Black Hamburgh it will ripen with little or no fire heat, but is all the better for a moderate amount of it.

At one time I was under the impression that there were inferior forms of Foster's Seedling, but I find that indifferent culture will completely change the character of the Grape. For instance, the Vines of it may be made during one season to perfect handsome bunches with good-sized, oval-shaped, and beautifully coloured berries, and during the next season, owing to over-cropping and the withholding fire heat, the bunches may be small, the berries also small, nearly round, and almost green in colour when supposed to be fully ripe. Plenty of light and sunshine, doubtless, are the primary agents in the successful ripening and colouring of white Grapes generally, but if we overcrop we must not expect either perfect finish or perfect quality. Foster's Seedling is particularly good for pot culture, and some of the best ripened examples of it I have yet seen were cut from pot Vines.

Buckland Sweetwater is not unfrequently preferred to Foster's Seedling for forcing or a cool house, and when well finished it is certainly of very attractive appearance, being then nearly certain to win premier honours at the early shows. At its best the bunches are of medium-size and rather loose, the berries large and round, and the colour a beautiful clear amber. The quality, however, is seldom first-rate, and more often than not the berries are little better than bags of sugar and water. According to my experience it is of vigorous growth, and must not be closely spurred back if we wish to secure plenty of good bunches. It should also be given plenty of light and time to colour well. I have also found this a good variety for pot culture, but prefer Foster's.

Golden Champion.—I have not had much experience with this Grape. I assisted to plant and cultivate a Vine of it when it was first sent out, and we were almost startled at the strong growth and immense leaves it produced. Unfortunately it failed completely, and we never cut a bunch of any great value, the consequence being its uprootal in order to make room for a more certain cropper. It has since been given another trial with the same results, and I am of opinion the position of that vinery, and many others where it has failed, do not suit the variety. What is wanted for this noble Grape is a high and dry position, this tending to check grossness, and consequently insures better ripening of the growth. I may be wrong in this premise, but the only satisfactory instances of successful culture I have yet witnessed were carried out in vineries in rather elevated positions. Even in these cases close spurring is not practised, the plan being at pruning time to shorten the spurs to about four or five buds. In this, or any other similarly moist neighbourhood, I should not attempt to grow the Golden Champion. Neither does grafting or inarching it on another less vigorous stock long avail in checking undue grossness, as the Champion soon communicates its nature to the stock. If I was particularly anxious to secure bunches of it I should work it on a Black Hamburgh or Foster's Seedling stock, and allow the latter to form at least two rods to one of the Champion. The "spot" to which Golden Champion and the Duke of Buccleuch appear to be peculiarly liable to is also least troublesome in an elevated position.

The Duke of Buccleuch I have not grown, but from what I have seen of it should say it is of much the same style of growth as the Golden Champion, and will succeed under the same conditions. The Duchess of Buccleuch I should advise no one to grow. Fully eighteen years ago I was a close observer of the habit of this variety, and was disappointed with the results of the fair trial given it. It produced extra long but very thin bunches, and the berries were round and very small. No fault could be found with the flavour, but I consider Grapes that produce small berries should form compact bunches, or at any rate they should not be ridiculously long and thin. A very creditable bunch of Duchess of Buccleuch was included in a collection of Grapes at the Exeter Summer Show, but judging from the size of the rather oval-shaped berries, I am inclined to think the rod producing it must have been worked on a stock sufficiently vigorous to change the character of the scion. Much that I have written with regard to the berries and shape of bunch of the Duchess is also applicable to the variety named Dr. Hogg, as this somewhat resembles the Duchess, but is superior in point of quality. Those who prefer the Frontignan flavour and crispness should grow this variety, as it is of remarkable good quality and not so liable to cracking as others of the same class. As foreman in a good garden I had some experience with Chasselas Musqué and Ferdinand de Lesseps. Both are delicious, but the former cracks very badly, and the latter produces most insignificant bunches, and they both soon found their way to the rubbish heap.

The late Mr. Pearson of Chilwell effected a cross between the last-mentioned and Black Alicante, and about ten years ago I had the pleasure of inspecting and testing the flavour of the



fruit of a remarkable number of seedlings resulting. All appeared to inherit the vigorous growth of Ferdinand de Lesseps, and the colour of this variety also predominated, as, if I remember rightly, there was not a black Grape among them, but some of them were curiously variegated—that is to say, the berries were half black and half yellow. The best of the batch is undoubtedly that named Mrs. Pearson, and it is my belief this useful Grape will yet become popular. Unfortunately the berries, round in shape, are rather small, but the bunches are compact, and the quality is equal to any Muscat grown. Added to this it is robust, yet very fruitful, and no difficulty is experienced in setting the berries. If given fire heat, say about what is given to Alicantes, plenty of light and time to ripen, it will finish off a rich amber colour, give off a pleasing aroma, and keep well.

Pearson's Golden Queen, of the same parentage as Mrs. Pearson, is equally, or perhaps more robust, quite as fruitful, and quite as easy to cultivate, but at its best the quality is inferior. I have had it very fine from pot plants, the colour being equal to any yellow Grape ever grown, and in this case the flavour was pronounced "much better than usual" by an experienced connoisseur. It is a very thick-skinned sort, and plenty of heat and light is required to ripen it properly. Doubtless several growers, after having given it a trial, have used it as a stock for some other sort, and it would be instructive if some of them would state what effect this stock has had upon the constitution and quality of the scion.

Calabrian Raisin I have had remarkably good on the back wall of a Hamburgh house, and those amateurs who prefer appearance to fine flavour should give this variety a trial. It is very vigorous, but ripens its wood well, and very rarely fails to crop heavily. It produces extra large and rather loose bunches and medium-sized round berries, which are whitish in colour at first, and then if kept long become tinged with red, but the flavour and flesh is only equal to the Sweetwater's. Trebbiano much resembles it as far as the habit of growth and fruitfulness is concerned, but requires more heat to finish it properly. This also produces large bunches, fairly compact, and the berries are approaching to oval shape. It is a fairly good keeper, but the quality is only second-rate. White Tokay is another vigorous-growing variety, and produces crops of fine bunches under Hamburgh treatment, and may well be grown with it by those who like variety in their only vinery. It is very refreshing and sweet, but according to my experience does not keep particularly well.

The most valuable white Grape in cultivation is the Muscat of Alexandria, but unfortunately it cannot be termed an amateur's variety, as it is, on the whole, one of the most difficult to grow to perfection. Mr. Taylor, when at Longleat, used to say that perfection never had been reached, or at any rate that it was possible to grow it better than it had ever been previously recorded, and though I used to think he was not serious in the matter, subsequent results have proved that he was correct in his opinion, and he must be awarded a full share of the honours gained by his successor. It appears to me that the naturally fine constitution of the Muscat of Alexandria is more easily impaired by overcropping than most other sorts, and that is why we so frequently hear of Mr. So-and-So's house of Muscats, from which so many prize bunches were cut, being past its best, this simply meaning that they are become too weak to set even bunches of berries. The framework is there, but the setting has failed. The Longleat Vines, thanks to Mr. Taylor's superior treatment, are at their best when about fourteen years old, this being about double the age of many growers' Vines that have achieved a short-lived reputation and then failed. This season we experienced no difficulty in setting bunches on a vigorous young Vine planted in 1883, but on debilitated old Vines the case was very different, and on the whole I think I am justified in expressing the opinion that if the Vines are sufficiently vigorous they will set equally well either in a high or comparatively low temperature, and if started early will not require a great amount of fire heat to finish it properly. When well grown it is very grand in appearance, and the large fleshy berries are of excellent quality. If ripened early in September, they will, as a rule, keep better than if ripened three weeks or a month later. I would still advise intelligent amateurs to include a Vine of this variety in their mixed house, giving it the warmest or sunniest end, but on no account should it be crowded, and each rod ought at least to be allowed a clear space of 42 inches. There are several presumably distinct forms of this Grape, but it is, I believe, now generally considered that those named respectively Bowood and Tynninghame Muscats are synonymous with it.

Canon Hall Muscat is perfectly distinct from the Muscat of Alexandria, and when well grown is perhaps, if we take into consideration the relative quality, the grandest of all Grapes.

The greatest difficulty is generally experienced in ripening the wood and setting the berries of this variety. The best examples of it that have ever come under my notice were cut from a Vine growing in one of the large vineries at Elvaston Castle. It was planted at the warmest end of a Muscat house, and the rod that produced the best bunches was directly over four hot-water pipes taken across the end of the house. Those berries that contained their full complement of seeds were enormous in size, but unfortunately they were few in number, and various sized berries on each bunch were nearly always to be seen. I do not remember having read of any bunches of this variety being staged at any exhibition for the past two seasons. At Old Sneyd Park, near Bristol, Mr. Miller has a Vine said to be a seedling raised from Canon Hall, and this, when I saw it last season, was carrying a heavy crop of fairly well-set berries. It closely resembles Canon Hall, and of late years has become equally as difficult to set. Would not some of our new fruit-raisers do well to take Canon Hall Muscat in hand, and cross it, say with Golden Queen? A white or golden companion for Gros Colman would be a boon to market growers.—W. IGGULDEN.

### THE CAUSE OF MILDEW.

PERHAPS the following observations will assist Mr. Clayton in finding the cause of mildew. We grow a quantity of the Maréchal Niel Rose here under glass, a variety which is very liable to be attacked at any time. Some of them are planted along the south side of a span-roofed house which runs from east to west, and is about 12 feet high at the ridge, 16 feet wide, and 100 feet long. The Roses are trained to a wire trellis about 12 inches from the glass. I find on inquiry they are planted here (inside) in the natural soil, without any drainage or preparation, and last spring they were evidently cut back too far in many places right into the old wood, consequently they made a very weak start, and ever since the beginning of August mildew has been very troublesome on them. There is no means of applying fire heat to this house. Running parallel with it, and about 12 feet from it, is another house, span-roofed, 257 feet long, 28 feet wide, 16 feet high at the ridge. The west end of this house is planted on both north and south sides for some distance with the same kind of Rose. These are younger plants than the others, being only two years from the bud, and are also trained to wires right up the roof. They have grown very strong and healthy this season, many of them having long since passed the centre of the roof, and all started from 3 to 4 feet from the ground level together. The border these are growing in was made of good turfy loam, and thoroughly drained. No mildew was to be seen on these for many weeks after the others were attacked, and only a very little at present, although growing within a few yards of the others which are badly infested. I should add, this place, being at the bottom of a valley close to water, is very damp generally, and favourable for mildew, also the plants in the last-mentioned instance had the advantage of fire heat to start them early in the spring, but none since.

I agree with what Mr. Clayton says as to sulphur, &c., and in my opinion the origin of the evil is at the root of the plant principally, and secondly, in the atmosphere surrounding the plant. I would undertake to keep the mildew away in any house, with plenty of light, ventilation, and fire heat when required, where I had the roots perfectly under control and in healthy condition.—W. H. DIVERS, *Ketton Hall*.

### ABBOTT'S MAGNUM BONUM SCARLET RUNNER BEAN.

THERE is now on view in the seed shop of Messrs. Fisher, Son, and Sibray, Fitzalan Square, Sheffield, a plant of this fine new variety twined around a Larch pole upon which it has grown, and of which I enclose to you a photograph taken November 3rd, whilst it was still in its natural position in the row as grown. The plant is carrying 175 pods, many of which are from 8 to 9 inches long and remarkably thick and stout. This, the peculiar thickness of the sides and back of the pod and the smallness of the beans or seeds, even when ripe, is one of the most valuable features of the variety, and give to the green pods when young a peculiar rounded appearance, inasmuch that when thus gathered they have been by experienced men mistaken for large pods of peas. The 175 pods now hanging upon the plant above referred to is not the whole of the crop the plant has produced, as Mr. Abbott tells me young Beans were freely gathered off it in the early part of the season. The clusters are large, frequently branching, and sometimes as many as fifteen in a cluster. Fourteen of the largest pods weighed 1 lb. I send to you by the same post sample clusters of dried pods, and also young green pods freshly gathered.

The variety is the result of very close and careful selection by Mr. Abbott for the past nearly ten years, and from my own observations of it during the last five or six years I fully believe it is superior to any variety in general cultivation, and that whenever distributed it will speedily become very popular, and will be found to excel all others



firstly as a most telling and handsome variety for the exhibition table, and secondly (and which is perhaps of first importance) for its superior table qualities when cooked. Mr. Abbott is still (November 10th) freely gathering from it for his employer's table.—W. K. W.

[The clusters received are extremely fine, and the green pods of remarkable substance.]

#### ERANTHEMUM COOPERI.

I SEND you sprays of a plant to show, not only how pretty the flowers are, but particularly to show that they can be produced freely at this season of the year as well as in summer. The plants have been grown in a pit with Bouvardias, generously treated, and the shoots pinched till September, then by placing them in a cool stove the present satisfactory results followed. The flowers are not gaudy, but chaste, and are admired

and I shall be glad if any readers, to whose "verdict" I am left, will prove that the injunction, "never to give liquid manure when the soil is dry," and plants "drooping with drought" is unsound. If, as your correspondent suggests, it is the common practice of farmers and gardeners to give liquid manure under those circumstances, I can only say it is high time that still more paragraphs were written against a practice so faulty, for it is first wasteful, then dangerous, as before the soil, which is so dry as to cause the plants to droop, can be made properly moist, quantities of the rich liquid must necessarily pass through it and be lost; while if it continues to be poured in until they can drink their fill, say of "guano water of the ordinary strength," they will most certainly take more than is good for them; and, Chrysanthemums for instance, will be injured.

I HAVE recently come across confirmatory evidence on this point, and quite independently too, of anything that has been said in this contro-



Fig. 75.—ERANTHEMUM COOPERI.

on account of their dissimilarity from all others at this period of the year.  
—J. B. MASON.

#### THOUGHTS ON CURRENT TOPICS.

ALTHOUGH my paragraphs are admittedly too many for "Non-Believer," it would scarcely be respectful to him if I failed to give a moment's thought to his valedictory note on page 412. In the little controversy that was raised it must not be forgotten that he was the accuser, and I was placed on my defence. It was clearly the duty of him to prove his accusation, and to demonstrate that it is safe, economical, and beneficial, therefore sound practice, to "give liquid manure when the soil is dry," and the plants "drooping with drought." Since he could adduce no evidence in support of that strange proposition he adroitly jumps on the horse that I provided him with, and, like Tennyson's "Northern Farmer," "canters, and canters away."

I ADHERE to every word that I said on the subject under discussion,

versy. In opening a new and interesting book on the Chrysanthemum by Mr. F. W. Burbidge, I find in chapter vi., pp. 29-30, the following:—"When manure water is applied it is essential that the soil be thoroughly moist beforehand. If the earth is in any way dry always give a soaking of pure water before the manure water be applied. It then becomes equally diffused throughout the ball of earth within the pot, and every rootlet is fed, and none are injured, as might otherwise be the case if watered with crude manure water when the earth was in a dry state."

THAT is emphatic and precise enough for anything. I could not have founded my remarks on that paragraph, for they were printed before it saw the light; and Mr. Burbidge could not have founded his remarks on mine, because his work must have been in the press when my paragraph was written. If "Non-Believer" disputes the truth of my teaching he must also dispute the accuracy of Mr. Burbidge, who, if I remember rightly, proved his competency a few years ago as a practical and scientific horticulturist by winning a certificate in the severe examinations of the Royal Horticultural Society and the Society of Arts. The advice



of Mr. J. Prouse on page 435 last week is exactly the same as that above quoted, and which I had previously advanced as sound.

IN my last series of "thoughts" I apologised for the number of my paragraphs on this subject; that apology I now withdraw, for it is clear that not one line too much has been written, and a "Non-Believer" has done good service in affording an opportunity for the important matter of the use and abuse of liquid manure being more prominently discussed than would otherwise have been the case; and although his "contention is ended" on the point at issue, I hope he will not hesitate in guiding my thoughts aright on other matters in which he may conceive them to be wrong. I will endeavour to meet him fairly, and in the same good spirit that he has manifested towards me in this, I trust, not uninteresting controversy.

ON the subject of giving liquid manure in winter, I am inclined to think that Mr. Abbey, in his admirable article on page 401, has not tested the out-of-the-way practice to any great extent. Your correspondent says, "If liquid manure is to be of any use it must be when the plant has an active root-action. Applied when the root-action is dormant, liquid manure will not do much good beyond enriching poor soil; but it may do great injury by gorging the soil with aliment which stagnates and destroys the roots."

I WILL not pretend to say that it is advisable to pour the liquid into soil that is naturally very heavy and wet; but I do assert that very marked benefit results from giving liquid manure in winter to fruit trees and bushes, Roses, Strawberries, Raspberries, and Vines that need more support than the soil affords them, when the ground is fairly drained—that is, when what is given passes in freely. I have used thousands of gallons during the resting period, which in many places is often the most convenient time for emptying tanks. The soil at that period is moist and retains the salts of the manure much better than it can do in the summer when the land is dry; and I know from very carefully conducted experiments that the liquid may be given quite safely at twice the strength that it could be used with similar safety in summer. A correspondent, "Lathyrus" (page 410) has, I perceive, found the advantage of the practice in question and urges others to give it a trial; further, so far as I know, the heaviest crop of Grapes that is recorded in the Journal was produced by Vines to which liquid manure was given copiously in the resting periods. But let those who doubt the safety of the practice try the liquid on a few Strawberries, a Gooseberry bush or two, or an old Rose tree of no great value at first giving it now and giving it strong, then note the results. Mr. Abbey, I hope, will do so, and I think he will find it will not be injurious, but beneficial.

AFTER all, Mr. Iggulden has sent me, through the Editor, a jar of his green Tomato pickle chow chow, and a big one too. I scarcely feel that I deserve it, and certainly it came as a surprise. Your correspondent must be a generous man to heap coals of fire on the head of an opponent in this manner. I accept it with thanks. It is excellent, quite exceeding my expectations, and I can advise all who relish a sprightly condiment, such as chutney, to dispose of some of their green Tomatoes in the manner recommended by your correspondent a few weeks ago.

I PROMISED if your Cork correspondent "W. O." would state the size of his trees and borders that I would think over the subject of lifting Peach trees annually again. He has, on page 377, given the size of the borders, but not of the trees. I will now say that if it were my lot to grow Peaches under the adverse circumstances indicated, I should, if the trees were not more than 10 feet high, with about 15 feet spread of branches, only have the borders half the width named, or 4 feet. I have ministered to the wants of a Royal George Peach tree, which covered a trellis 12 feet wide and 35 feet long, in a border less than 8 feet wide, and it grew quite strongly enough in a much drier climate than that described, in which the trees retain their leaves in the winter. The moister the atmosphere is the freer the growth, and the smaller should be the borders. The soil should also be very firm indeed. Borders for Peach trees are usually needlessly large, and especially in dull and wet districts. I have no doubt your correspondent does quite right under the circumstances in lifting the trees, but I would respectfully suggest to him the desirability of thinking about restricting the roots still more; for I am quite certain that if the trees do not exceed the size named that they can have all that they need in 4 feet wide borders.

THE imaginative dialogue between the squire and his gardener is interesting; it is, however, not very complimentary to the reasoning powers of the former. I know something of the difficulties that gardeners have to contend with, and should be grieved beyond expression if I should even in the slightest degree intensify them. I am no stranger to squires who have had the character of being unreasonable, and have been twice warned against serving two of them. I disregarded the warning, and between the two spent twenty years more than contentedly; and I have arrived at the conclusion that masters as a rule are pretty much what men make them. A few may be crabbed and unreasonable beyond cure, but then all men are not angels; at least that is the opinion of—A THINKER.

CACTUS DAHLIA JUAREZII.—Not having seen an answer to Mr. Murphy's question, page 376, October 23rd, I venture to give the experience of a young gardener. If Mr. Murphy wishes to have the said Dahlia

in bloom earlier than October, he may have them in August by starting them the first week in February and taking cuttings in the usual way. Keep them growing in a brisk heat until they can with safety be transferred to a cold frame to harden previous to planting out. Another mode is to strike cuttings of the same in October, and grow them on through winter in the greenhouse; but in either case they need more heat, more attention, and a longer time to grow in than any of the other Dahlias that I know.—A YOUNG GARDENER.

#### GARDENERS' ROYAL BENEVOLENT SOCIETY.

HAVING seen an appeal made on behalf of the Gardeners' Royal Benevolent Institution, I take the liberty of asking the readers of our Journal to assist all they can in the effort to raise the sum required, £420. I confess to having had very slight knowledge of the Society until I wrote to the Secretary, when he kindly sent me a report. I saw at once that the Committee contained some well-known names, and that our worthy Editor is one of the trustees. I decided at once to do what I could to further the object named, the raising of the sum required. I at once wrote for a collecting card, which I received on Saturday, and I am pleased to say that on Monday I had made a start by getting one contribution of 18s. I have, by permission of the Committee of our Chrysanthemum Show, had some papers printed calling attention to the same, and I am going to have a box placed in the room. My apology for writing is to suggest to my brother gardeners to try and get the same done at the shows which are being held all over the country. I have no doubt that the money will be raised.—A. J. BROWN, *Lindfield*.

[This letter arrived too late for insertion last week.]

#### CORDON PEARS.

A YEAR ago I planted against a south wall upwards of 200 cordon Pear, Apple, Plum, and Cherry trees, and I am glad to be able to report that I am thoroughly satisfied with them. I had a 3-foot glass coping erected along nearly the whole length of the wall, and very serviceable indeed I found it to be; for although the outdoor fruit crops were utterly ruined by the late severe frosts of last spring I secured fine crops of Peaches, Apricots, Plums, and Figs grown under the protection of this coping.

Nearly every tree of the cordons above mentioned bore a greater or less quantity of fruit, some of them being very fine. Thompson's was laden with fine fruits, which turned out to be excellent in flavour. Red Doyenné bore well, as also did Doyenné d'Été, Beurré Sterckmans very large and well-flavoured fruit, Olivier de Serres, Madame Millet, Easter Beurré, Directeur Alphand, and Joséphine de Malines. Some very fine fruit of Worcester Pearmain and Irish Peach Apples were produced. Büttner's Black Heart and Bigarreau (Frogmore) were good among Cherries, and Braby's Green Gage and Coe's Golden Drop among Plums. Considering that these trees were only planted a year ago they have done remarkably well, and as they are full of promise we hope next year to have a fine crop.

The cordon system is undeniably the finest mode of growing fruit, in small gardens especially, as they soon come into bearing and also afford a speedy means of obtaining a good selection of fruit in a minimum space.—T. W. S.

#### ARRANGING PLANTS.

IN the majority of gardening operations we propose to take Nature in its best forms as our guide; and though it is not always possible, nor indeed desirable, to imitate natural conditions in every detail, because we are surrounded by such widely different circumstances, yet the more closely we study the great principles that are taught us in Nature's book, and apply its teachings to our own practice, the more likely shall we be to attain the object we have in view. And it seems to me that we have yet much to learn from the wide field of Nature concerning our manner of arranging plants for decorative purposes.

Certainly the prizes offered at numerous shows throughout the country for groups of plants arranged for effect have done much to produce a more refined taste in this respect; but there is still too much sameness in most of the exhibits. It is surprising how slow we are to make any decided change in our style of arrangements—ninetieths of the groups that I have yet seen differed but little in their general arrangement. The even rounded outline so commonly seen in groups of plants is just the reverse of what would call forth the greatest admiration in natural scenes. Of course in the very limited area at disposal for this kind of work it would be absurd to attempt to copy the beauties of an extensive landscape, but there is many a quiet nook or graceful undulating surface that might, if imitated, produce a most pleasing effect.

In arranging a group of plants I would first determine whether its outline should be convex or concave in form, as it is comparatively easy to work out the details when one has a clear conception of the design. Supposing, then, we wish the arrangement to partake of the latter form, and start with a background of Palms; Kentias, Seaforthias, Cocoses, and Arecas answer the purpose admirably when



arranged in an irregular way, with a few of the leaves drooping gracefully over the surface of the group. The next thing to do is to form a rather dense thicket of green beneath the Palms to hide the pots in which they are growing, taking care that the stems of the Palms are seen as if growing out of a carpet of Ferns. Having thus formed a background of green we can proceed to dot out the outline of a good portion of the group. It is much easier to do it in this way than to attempt to finish each part as the work advances. The effect of many a group has been spoilt in this way. The arrangement may look light and graceful at first, but as the group gets larger the plants appear far too much crowded. As we wish the centre of the group to be hollow the sides should be formed next, and they should be made much higher than is required when the centre is to be full, taking care to have the plants of various sizes and of different forms to produce a wavy surface. The cavity in the centre thus formed is to be the principal point of attraction, it should therefore contain the choicest material and have the utmost pains bestowed on its arrangement.

Near the back of the group, just in front of the Palms, a small mound should be raised, with *Adiantums* or other suitable Ferns, and a well-grown attractive-looking plant placed on the top, so as to be seen to advantage among the surrounding greenery, and some bright-coloured plants placed in the recesses formed on each side of the mound, and these colours will be enhanced by the canopy of Palms above them. The base of the mound should be fringed with small plants of *Coleus*, *Caladium*, *Abutilon*, or any other suitable plants. The remaining portion of the group should be kept rather low, and be dotted over with such plants as *Pandanus Veitchii*, *Cocos Weddelliana*, *Crotons*, *Dracenas*, *Acacias*, &c., with a groundwork of Ferns, and here and there a few bright-coloured flowers springing out of the carpet of green. The edges should be finished off with small plants of *Isolepis*, *Adiantums*, *Panicums*, *Coleus*, *Caladium argyrites* arranged in such a way that not a pot is to be seen in the whole group, as the effect is entirely spoilt if they are visible.

Before concluding I must say a few words about colour. Do not have too much, but where it is used let it be shown off to advantage and not crowded in as if we wished to hide it.

I am afraid my description of this subject has not been so clear as it ought to be, but I am sure if these remarks should induce anyone to work out similar arrangements their efforts will be rewarded by a favourable verdict from the most experienced judges and a host of admirers among persons of refined tastes.—H. DUNKIN, *The Gardens, Longford Castle, Salisbury.*

#### FRUITS AND VEGETABLES AT SOUTHAMPTON.

SEEING that no reference is made to the prizewinners in the classes for fruits and vegetables in your otherwise excellent report of the Southampton Show, the writer, in common with other exhibitors in the fruit classes, feel that our exhibits—seeing that they attracted quite as much attention from visitors as the splendid display of *Chrysanthemums* did—deserve mentioning, as forming part of one of the best provincial shows in the country; therefore I trust you will be good enough to make room in your next issue for the awards made by the Judges in the fruit and vegetable classes, and which are as follows:—

*Grapes*.—For three distinct varieties, one bunch of each. First, Mr. T. Hale, gardener to Captain Davison, Stoneham House, Southampton, with *Muscat of Alexandria*, *Barbarossa* (*Gros Guillaume*), and *Black Alicante* in fine condition. Second, Mr. H. W. Ward, gardener to the Earl of Radnor, Longford Castle, Salisbury. Third, Mr. E. Molyneux, gardener to W. H. Myers, Esq., Swanmore Park, Bishop's Waltham. Fourth, Mr. A. Gates, gardener to W. G. Roy, Esq., Byams, Marchwood, Southampton. Mr. Hale was again to the front in the class for three bunches of black, showing *Black Alicante* in fine form as regards size of bunch, berry, and finish; and the same remark applies to Mr. T. Grant, gardener to Major Murray, Ossemsley Manor, Christchurch, who secured second position with the same variety. Third, Mr. Molyneux, with two bunches of *Alicante* and one of *Lady Downe's*. Mr. Ward was first for white, showing three bunches of *Muscat of Alexandria*, Mr. Hale being a good second, and Mr. Sanders, gardener to J. East, Esq., Langstock House, Stockbridge, third. Mr. Hill, gardener to Viscount Gort, East Cowes Castle, Cowes, was first in the class for two bunches of black, showing *Black Alicante*; Mr. T. Osborn, Wilton House, Southampton, was second, and Mr. Sanders third. Seven lots were staged, and in the corresponding class there were only two entries—namely, Mr. Osborn and Mr. Gates, who took the prizes in that order with *Muscat of Alexandria*. In the class for the heaviest bunch the first prize went to Mr. Ward, with *Gros Guillaume* weighing a little over 8 lbs.; the second to Mr. Hale, with *Black Alicante* about 4½ lbs.; the third to Mr. Budd, gardener to F. G. Dalgety, Esq., Lockerley Hall, Ramsey, for *Black Alicante*.

There were only two *Pine Apples* shown, two well-grown *Queens* weighing 3 lbs. and 4 lbs. respectively, and for which Mr. Richards, gardener to the Earl of Normanton, Somerley House, Ringwood, and Mr. Budd were awarded the first and second prizes in the order in which their names appear.

*Apples*.—These were shown in fine condition as regards size, form, and colour. There were ten lots of four distinct varieties, six fruits of each, ripe or unripe, staged. Mr. Hale was first with *Scarlet Admirable*, *Flower of Kent*, *Blenheim Pippin*, and *Wellington Pippin*. Second, Mr. Brewer, nurseryman, West End, Southampton. Third, Mr. Sanders, and fourth, Mr. Gates. In the class for three varieties of dessert, six fruits of each, there

were nineteen entries. Mr. Wildsmith, gardener to Viscount Eversley, Heckfield Place, Winchfield, was first with *Ribston Pippin*, *Court Pendu Plat*, and *King of the Pippins*. Mr. Busby, gardener to F. Williams, Esq., Thornhill, Park, was second, Mr. Gates third, and Mr. J. Mair, gardener to General Calthorpe, Woodlands Vale, Ryde, fourth. Out of fourteen entries for three dishes, distinct varieties, six fruits of each, Mr. J. Mair was a good first with fine fruits of *Gloria Mundi*, *Hollandbury*, and *Alfriston*. Second, Mr. Chapman, gardener to Col. Knatchbull, Manor House, Clatford. Third, Mr. Sanders; and equal fourth, Messrs. Hale and Gates. For four dishes of Pears, ripe or unripe, Mr. Sanders secured chief honours with *Beurré Bachelier*, *Beurré Diel*, *Doyenné du Comice*, and *General Todleben*; the second, third, and fourth going respectively to Messrs. Gates, Wildsmith, and Hills; and in the next class for three dishes Mr. Gates was first with *Marie Louise*, *Beurré Diel*, and *Crassane*, Mr. Sanders second, Mr. Mair third, and Mr. Wildsmith fourth. The last-named exhibitor had the best dish of *Filberts*, Mr. Hale the second best, and Messrs. T. Giles, Salisbury, and Sanders, third and fourth in that order.

*Vegetables*.—These were shown largely and well. There were four prizes offered for collections of eight kinds. Mr. Cox, gardener to R. K. Wyndham, Esq., Corhampton House, Bishop's Waltham, was first with a good collection, in which was a fine large dish of *Tomatoes* and remarkably fine *Veitch's Autumn Giant Cauliflower*. Mr. Sanders was a good second; Mr. West, gardener to Captain Wigram, Northlands, Salisbury, third; and Mr. Amys, gardener to the Hon. Mrs. Elliot York, Hamble Cliff, Southampton, fourth. Mr. Richards took first prize for a very good and varied collection of salads, which was very tastefully put up, the second, third, and fourth prizes going to Messrs. Sanders, Amys, and Cox, all showing well.—EXHIBITOR.

#### CHRYSANTHEMUMS AT BEECHDALE.

VISITORS to the late National *Chrysanthemum* Show, held in the Westminster Aquarium, were enabled to see the queen of autumn flowers in splendid condition as regards the high standard of perfection to which skilful cultivation has now attained. Numerous as the exhibits were, they did not represent all the skilful growers of this popular flower. There are numbers of persons who cultivate the *Chrysanthemum* up to a high standard of excellence for a private display and not for exhibition purposes. Sometimes a gardener may make their culture a special feature, and not be allowed by his employer to exhibit. In this case his merits as a grower are only known locally, unless noticed by the horticultural press. I had the pleasure a few days ago of inspecting a very fine private display of well grown and flowered plants, arranged in the conservatory in the garden of — Geiselbrecht, Esq., Beechdale, Eltham Road, Lee, which are well worthy of note in these columns. The gardener, Mr. R. Fullerton, had certainly done his utmost to produce an effective display, as both in arrangement of the plants, and quality and quantity of blooms, there was everything that could be desired. Had the blooms of many of the varieties been exhibited they could not have failed to have secured first honours, so fine and perfect were they in size and form. Exceptionally good were such varieties of the Japanese section as *Baronne de Prailly*, one of the blooms measuring over 13 inches in diameter; *Thunberg*, also very fine; *M. Chas. Hubert*, *Gloire de Toulouse*, *Peter the Great*, *Meg Merrilees*, *L'Incomparable*, *Madame Clemence Audiguier*, enormous; *Triomphe du Nord*, *Agréments de la Nature*, very fine; also *Fulton*, *Delicatum*, *Flambeau*, and others. In the incurved section the examples of the white *Empress of India* were grand. One of the blooms measured was nearly 8 inches in diameter and unusually deep and well formed, as also were the blooms of the *Golden Empress*. Other notably fine blooms were those of *Cherub*, Mrs. G. Rundle, *Hero of Stoke Newington*, Mrs. Bunn, Mrs. Crossfield, &c.

In the *Pompon* section *Model of Perfection* must be specially mentioned as being well grown and flowered. This is, by-the-by, a charming variety for affording plenty of flowers for cutting. Only a few of the most striking examples in each section are given, as no useful purpose is served in occupying space with a long list of names. Upwards of 200 plants were in flower at the time of my visit; and as the able gardener, Mr. Fullerton, has a choice collection of stove and greenhouse plants as well as vineries, flower and kitchen garden to manage, without assistance, except a man one day a week, he is to be congratulated on his success, and commended for his skill and industry in obtaining such good results under such unfavourable circumstances.—T. W. S.

#### HAARLEM EXHIBITION OF FLOWERING BULBS.

IN 1885 the General Society for Bulb Culture at Haarlem will celebrate the fourth centenary of its existence, and on that occasion an exhibition will be opened at Haarlem on a large scale, the occasion being one of the quinquennial shows of the Society. Large exhibitions have previously been held in 1875 and 1880, but that now announced will surpass all those held before, and if it realises the expectations of its promoters it will be the best show of flowering bulbs and tuberous-rooted plants ever held. The Show will be opened from 20 to 24th March in the largest hall at Haarlem with its annexes.

The schedule of prizes has 140 entries, for which 381 medals are offered (gold, gilt, silver, and bronze, some of them with an addition of money value). The aggregate value of the prizes is upwards of £500. There are eighty-seven medals for *Hyacinths*, sixty for *Tulips*, seventeen for *Narcissus*, and smaller numbers for *Crocus*, *Fritillaria*, *Galanthus*, *Leucojum*, *Scilla*, *Chionodoxa*, *Muscari*, *Erythronium*, *Anemones*, *Ranunculus*, *Lilium*, *Gladiolus*, *Iris*, *Helleborus*, *Hepatica*, *Trillium*, *Convallaria*, *Hoteia*, *Spiraea*, *Dicentra*, *Terrestrial Orchids*, *Paeonia*, *Amaryllis*, *Imantophyllum*, *Eucharis*, *Orchids*, *Gesneriaceae*, *Begonia*, *Anthurium*, *Caladium*, *Calla*, *Cyclamen*, *Tropaeolum*, *Lachenalia*, *Sparaxis*, *Phor-*



mium, and Yucca, as well as for miscellaneous, rare, or new bulbous and tuberous-rooted plants.

A large number of medals is besides offered for table decorations, bouquets, arrangements of flowers, baskets, &c., with flowers or plants, with this peculiar condition, that all the flowers which are put in these arrangements are to be those of bulbous or tuberous-rooted plants.

This Show will doubtless be a great attraction to all those who take an interest in bulb-growing. It will give a better idea of the collection of spring bulbs grown in the neighbourhood of Haarlem than any show has done before, and the occasion will afford an excellent opportunity for spending a few days among the many interesting attractions that are to be found in Holland.

#### MRS. PINCE'S BLACK MUSCAT GRAPE.

I WAS very pleased to notice your correspondent, Mr. Iggulden, writing in favour of this fine winter Grape. I do not think the day is far distant when it will take the place of Lady Downe's. Her ladyship has again proved a failure with us. The warm weather we had in August, when most of our Grapes were stoning, proved too much for this delicate Lady. We have scarcely a bunch presentable, the larger half of the berries being scalded; whereas, on the other hand, the Black and White Muscats in the same house are better than they have been for some years. Mrs. Pince is hanging at the present moment as plump as can be desired, not a single berry decaying. Another recommendation this Grape has in preference to Lady Downe's is that the flavour is better. The colour is its worst fault. I am inclined to think if a cooler atmosphere were given when the fruit shows signs of changing colour until it is finished it would to a certain extent help to remove this grievance. A Mrs. Pince inarched on a strong stock in a cooler house where Hamburgs are grown, and at the coolest end, has this year finished four medium-sized bunches much finer in colour than those in the warmer house. The warm-house Grapes are larger in berry, the flavour being equal in both houses.—J. J.



**HORTICULTURAL CLUB.**—The usual monthly dinner and conversation took place on the 12th inst., at the rooms, 1, Henrietta Street, Covent Garden. Amongst those present were Mr. John Lee, Chairman; Dr. Hogg, The Rev. F. H. Gall, and Th. Flintoff, Messrs. Stottentoff, Druery, Ironsides, Collings, T. B. Hall, &c. Amongst the subjects brought forward was a very varied collection of Chrysanthemums of the different sections from Mr. N. Davis of Camberwell, a collection of dried fronds of Ferns of *Athyrium Filix-femina*, and some of its more remarkable varieties from Mr. H. M. Stottentoff of Lewisham. Mr. Collings showed remarkable frond of *Polystichum* which he had found on an imported *Dendrobium*, and which had a most powerful perfume similar to the Tonquin Bean. It was believed to be new. The Secretary contributed from his garden some remarkably fine specimens of Doyenné du Comice Pear and Cox's Orange Pippin and King of the Pippins Apples. A very agreeable evening was spent.

**GARDENERS' ROYAL BENEVOLENT INSTITUTION.**—Mr. Cutler writes: "Will you kindly announce that in order to meet the wishes and convenience of many gentlemen who have collecting cards for the Augmentation Fund of this Institution, that the time for closing the list has been extended to Monday, the 15th of December?"

— MR. JOHN WOOLWRIGHT sends the following:—"I am inclined to believe that among the 'crowd of people' that flow to the Chrysanthemum shows, few would go away without subscribing something towards the augmentation of pension fund of the Gardeners' Royal Benevolent Institution, if boxes were placed in different parts of the exhibition room with a card clearly printed stating in not too many words for what purpose donations, however small, were required. Many shows are to come, among them that in St. George's Hall, Liverpool, and I promise that if subscription boxes are there exhibited for the above most deserving object, one of them shall receive a sovereign from me."

— WE have been awaiting an opportunity for noticing somewhat fully MR. BURBIDGE'S NEW WORK ON THE CHRYSANTHEMUM, but each week the pressure on our space has been too great to enable us to do so. The work is mainly a compilation from the writings of various gardeners, and of extracts from most of the gardening papers, and therefore ought to be good. There is much in it of interest and matter that

is useful, but there is much left out that should be in to render the work fully satisfactory. As a compiler Mr. Burbidge has done his work as well as could be expected of him; but he could have prepared much better illustrations.

— AS an example of the recent mildness of the weather and the salubrious climate of Walton-on-Thames, we observed last Thursday a *GLOIRE DE DIJON* ROSE covered with splendid blooms on the residence of Dr. Macdonald, and remarkable in the same garden is a boundary line of Eucalyptus trees, some 20 feet, and splendidly luxuriant Bamboos, which attract attention. We are told there is much of interest in the "doctor's garden" of an out-of-the-way character. In the same district a gardener observed that *Heliotropes* were flowering freely, which he has never seen before so late in the season. We are told that Laburnum trees are in bloom in Hastings, and in Bromley fresh crops of Peas are being gathered, and Raspberries are ripening in profusion.

— MR. A. ALDERMAN, The Gardens, Elm Court, Mitcham, writes:—"Will you kindly allow me to correct a slight error in your report of CROYDON CHRYSANTHEMUM SHOW of the 11th and 12th ult., in which it says that Mr. Gibson easily secured the cup given both for incurved and Japanese flowers, and that I was placed third in the open class for twenty-four Japanese blooms. I was placed second, but ran Mr. Gibson so closely that the Judges wished to make us equal first; but the prize being a cup, another could not be provided, so they took the blooms point for point, and he only gained by one."

— JUST on the eve of going to press we learn by telegram that the BIRMINGHAM CHRYSANTHEMUM SHOW is a great success, both cut blooms and specimen plants being well and largely exhibited. The grand feature of the Show is the class for forty-eight blooms, twenty-four incurved and twenty-four Japanese, distinct varieties, for which the valuable prizes, £10, £7, £4, and £2, were offered. The three first have been won by Mr. Jellicoe, gardener to J. H. Gossage, Esq., Liverpool; Mr. Barker, Hindlip Hall Gardens near Worcester; and Mr. Comfort, gardener to G. A. Everitt, Esq., Knowles. The Show continues upon to-day (Thursday).

— THE HON. AND REV. J. T. BOSCAWEN, Lamorran, Cornwall, writes:—"Although between 8° and 9° of frost have been registered, yet *LAPAGERIA ROSEA* and *ALBA* against a north wall are uninjured. *Parochætus communis* on rockwork is also safe." The specimens sent do not show the slightest injury, being as fresh as possible.

— **LILIUMS IN NOVEMBER.**—As is well known Mr. McIntosh's beautiful garden at Dunevan, Surrey, is famed, among other things, for Liliiums both in pots and in the Rhododendron beds. In the summer the flowers abound, but this year they are plentiful in November. Last week we observed many splendid blooms of *L. auratum* in a bed sloping to the north with several buds expanding. The flowers were in every respect as good, both in substance and colour, as they are usually seen in August and September.

— IN a bed on the lawn a number of stately stems bearing seed pods freely show how fine *LILIUM GIGANTEUM* has been this season. The stems are from 7 to 9 feet high, and one of them we hear will shortly have a place in the new museum at Newcastle-on-Tyne that was recently opened by the Prince of Wales. It is certainly a wonderfully fine example and worthy of preservation.

— A CORRESPONDENT informs us that a PEAR TREE IN FULL BLOSSOM arrested his attention in a garden in Lambeth the other day. He describes it as "covered with bloom as if in spring," and numbers of persons expressed their astonishment at this singular example of fruit blossom in November.

— A CORRESPONDENT near London writes:—"We still (November 14th) continue to enjoy unusually MILD WEATHER for this season of the year, the beds and borders of our suburban garden being still bright and lively with single Dahlias, African Marigolds, Pentstemons, *Senecio pulcher*, *Schizostylis coccinea*, Stocks, Corn Marigolds, *Lobelia cardinalis*, *Lithospermum prostratum*, *Anemone japonica*, *Androsace lanuginosa*, and *Salvias*. A large standard *Gloire de Dijon* Rose is in full bloom, as also are *Général Jacqueminot*, *Marie Baumann*, and *Souvenir de la Malmaison*. The latter is growing against a west wall, and is covered with fine blooms. Several tufts of the yellow Primrose are also in full bloom. *Jasminum nudiflorum* is in full bloom, too, against my cottage."



— THE Secretary of the South Shields Chrysanthemum and Winter Flower Show will be glad to receive all flowers and plants at the station, stage them, and return them as safely as possible free of charge.

— GARDENING APPOINTMENT.—Mr. George Povey, gardener to the late Alexander Gillespie, Esq., Weybridge, has been appointed gardener to W. Graham, Esq., Manor House, Crayford, Kent.

— MR. W. DAY sends us a sample of very FINE MUSHROOMS gathered in the open field on November 11th. He has gathered half a bushel a day since the end of July. We learn that Mushrooms have been unusually plentiful this year in many parts of the country.

— UNRIPE FIGS.—“A. F. M.” writes:—“My Fig trees are covered with small immature Figs about an inch or two long. Is there any way of cooking or preserving these to make them edible? If not, these seem to be the only fruit unfitted for such treatment.”

— WE are informed that a very successful Chrysanthemum Show was held at Cranbrook last week under the auspices of the Weald of Kent Gardeners' Society, Messrs. Todd, J. Doughty, F. Dean, A. Feaver, and C. Gowns being among the leading prizetakers. Mr. Stalker, gardener to Lord Cranbrook; Mr. Parkhurst, gardener to Rev. A. H. Harrison, and others contributing effectively to the display by products not for competition.

— MUCH has been published in the newspapers on the wonderfully mild autumn and the consequent abundance of outdoor flowers. We also have had several notes on the same subject, and at the Tunbridge Wells Show on the 13th inst. we are informed that an exhibitor staged eighty-four varieties of flowers gathered in the open air. The flower season is, however, about over now, the last few nights having been sufficiently severe in the south to cut down Dahlias and similar tender plants.

— THE SHREWSBURY CHRYSANTHEMUM SHOW was held on the 13th and 14th inst., and proved to be a great success. The chief prize winners in the open classes were Messrs. West, Corbett, Battie, Wingfield Giddens, and Lord Trevor; the first-named exhibitor showing remarkably good blooms. In the fruit classes Colonel Wingfield and Messrs. Watson, Goodill, and Townsend were the principal prizetakers. As this is only the second annual exhibition held by the Society its success is most encouraging.

#### NOTES ON THE SEASON AND FRUIT TREES.

HERE in the south of Ireland this has been a very dry season, as the rainfall will show—7.94 inches from 8th of April to November 1st. It would be interesting to know if less has fallen in the same time in any other place. This proverbially being one of the wettest districts in the British Isles makes it all the more strange.

The effect of the very dry season upon fruit trees and fruit has been very interesting, and I think has proved in a marked manner that season and locality or climate have much more to do with our fruit crops than soils, however well adjusted for the requirements of the different kinds. Apples have been a light crop, but the fruit was of first-rate quality and very large; Tower of Glamis 19½ ozs., Blenheim Pippin, Waltham Abbey Seedling, and several others over 16 ozs. About seventeen years ago, on taking charge of the garden here, I found a lot of old, worn-out, and decaying Apple trees. I commenced by uprooting half of the trees in the orchard, and not having any other suitable site I had to replant in the same ground—a practice not to be recommended; but not until I had made drains 4½ feet deep with pipe tiles at the bottom, and 1 foot of stone about the size of road metal over the pipes, and then a tough sod over the stone to keep out all particles of soil. The ground was then trenched 2½ feet deep, and as the work proceeded every piece of root was carefully removed, and a good dressing of vegetable matter and lime rubbish well worked into the soil to give a little new life to it, and having had experience in some of the best fruit gardens in England I was able to make a pretty good selection. Amongst the dessert kinds I had several varieties of Pearmain. I also had a number of Cox's Orange Pippin, believing this to be the best variety grown. By this time I had learned by experience the wetness of the climate. I planted the trees upon the surface after well treading the loose trenched soil at every station we were about to plant a tree upon, and mounds of earth were formed over the roots of each tree.

After a few years I was greatly disappointed to find that my favourite kinds of dessert Apples proved almost useless, and amongst many others the Pearmain and Cox's Orange Pippin proved worse than many others. What fruit came was always cracked and deformed, and quite unfit for the table. Most of these have long been uprooted or grafted with other kinds. Last autumn I went to the orchard with saw in hand to take the heads off the last of my once most favourite dessert Apple trees to graft with other kinds, but coming to two trees which I thought models of shape I spared them for another year, with the result that I have this year gathered a

good crop of beautifully coloured fine fruit—more from my two trees than from six in sixteen years.

I have written the above notes to try and prove that season and locality or climate have more to do with successful fruit-culture than soils in which the trees grow, and that fruit trees have the capacity of adapting themselves to seemingly unsuitable soils, all other things being favourable to their development.

Just another word upon the growth of the trees, which has been very little, and especially where the trees were root-pruned last autumn. Almost every branch of last year's wood is studded with flower buds at every joint, and in the case of the root-pruned trees, which have only made from 5 to 7 inches of growth, a terminal flower bud is upon almost every shoot. Judging from the present appearance of the trees we are almost led to think that their whole energies will be exhausted in producing flowers.

The Pear crop, like the Apple, has been very light, but generally of very good quality. Perhaps the strangest part of their growth has been the large second crop of several kinds, a few of which I have sent as fair samples of the kinds—viz., Williams' Bon Chrétien, Duchesse d'Angoulême, and Madame Treyve. There are many other sorts with quite half a crop upon them, which I hope to gather for dessert. It is quite common to see a few small fruits, but not so general as this season.

Beurré d'Amanlis, which is generally not fit to eat, has been this season very large and of good quality, and quite free from the usual cracked deformed fruit. Glou Morceau has been much smaller than usual, but of good quality; Marie Louise and Beurré Diel were of good quality. Several other varieties have been much influenced by the dry season, and chiefly for the better.—W. O., *Fota Island, Cork.*

#### CHRYSANTHEMUMS.

##### ON TAKING AND ESTABLISHING SPORTS.

Now that Chrysanthemums are in full beauty with most cultivators I thought a few notes would not be out of place. Chrysanthemums are of a very sportive nature, and it not unfrequently happens in collections of Chrysanthemums that some flowers come quite different from their true character. Perhaps one bloom on a certain plant may come a much lighter or darker shade of colour than the rest. In that case I would advise anyone to at once secure it.

Now, to take the cuttings from the base in the usual way would be quite useless, as no doubt many sports are lost in that way. But the best way I have found to secure them is to take off the shoot, say 9 inches or a foot long, and if a slight bottom heat is at command so much the better. Put the lower end of the stem firmly into the plunging material in a slanting direction, so that the stem lies flat on the plunging material, and partially cover the stem with some light soil. In this position it will soon throw out side shoots, and when they are 2 inches long must be struck in the usual way and grown on to the following year, when they would flower. At this period it would be found that some would be better than others, and the best and most distinct should only be retained to be propagated from and grown on a second year, when it would be well established, provided the best and most distinct cuttings had been used and well cultivated.

I enclose blooms of a sport from Guernsey Nugget taken three years ago—taken and treated the same way as herein described—and I believe you will think, as I do, that this is quite distinct from the parent plant.—W. A. WALTER, *Lillingstone House, near Buckingham.*

#### THE GRAPE SEASON.

REGARDING Mr. Iggulden's inquiry as to whether any readers of the Journal have Gros Maroc on its own roots and doing well, the writer can state that he has one Vine on its own roots and doing very well. This season it grew strongly and fruited freely. The flavour, however, was not superior.

Other Vines of Gros Maroc, grafted on Black Hamburgh, excel the one on its own roots considerably. The bunches are finer, bloom better, and flavour much superior. In both cases, and more especially in the case of those on Hamburgh stocks, the treatment has been comparatively cool, and that seems to suit Gros Maroc very well. When well grown there can be no doubt that this is a very handsome Grape, and makes a very pretty dish.

Regarding Mrs. Pince, Mr. Iggulden entertains a far higher estimate than my experience and observation enable me to entertain. In many cases it is badly coloured and keeps far from satisfactorily. There can be no doubt that it is a high-class Grape when well produced, the flavour being good and appearance fine; but certainly thoroughly ripened samples are far from being frequently seen. I cannot endorse the opinion that it is “the best late Grape we have.”

Lady Downe's, no doubt, has some peculiarities, but when these are known and guarded against there can be few, if any, late black Grapes found that can compare with it. Its crackling freshness of berry when kept till February or March makes it exceedingly refreshing. Gros Colman has been steadily winning its way into favour, and many gentlemen who at first despised it on account of its reputed want of flavour have found that when thoroughly ripened, and kept till December or January, it is very pleasant to the taste. Its noble appearance on a table claims for it a high position in general favour, even were its edible qualities inferior to what they are. As Mr. Iggulden says, it requires to be started early in the season in order that it may be well ripened ere autumn. When such is the case it keeps remarkably well.



Alnwick Seedling has been the cause of a good deal of disappointment. It has a fine appearance when well grown, as it sometimes is; but too often it refuses to set, the consequences being a host of small berries. I have never seen it keep remarkably well, and few notices of its late keeping qualities have come under observation.

Mr. Iggulden rather contradicts his statement that Mrs. Pince is "the best late Grape we have" when he comes to speak of Gros Guillaume, for he says it "is the finest of all the late black sorts." Gros Guillaume is undoubtedly a fine Grape, and I would give it preference to Mrs. Pince, notwithstanding the latter's fine Muscat flavour. Sometimes, unfortunately, Gros Guillaume declines to show as many bunches as suffice for a crop, and undoubtedly this is a very serious defect in its character. A good amount of fire heat and plenty of air when practicable in autumn, so that the somewhat strong wood of Gros Guillaume may be well ripened, is one factor in obtaining a crop.

Mr. Iggulden's sweeping condemnation of Royal Ascot I can endorse, but surely he is too hard on Black Prince. As a variety, and for use after Black Hamburg, Black Prince is not to be despised. It is easily grown, makes a pretty dish, and is of fairly good quality. West's St. Peter's, though seldom seen, is another variety that comes in useful about the same time as Black Prince.

Muscats have finished better this season than they have done for several years, and when the golden hue which is so much coveted is present in the case of this grand Grape the height of excellence has been attained. Moderately light cropping, a long season, a good amount of heat combined with plenty of air when possible, are points easily attained, and which go a long way in successful Muscat cultivation. Artificial fertilisation when in flower serves to secure plenty of fine berries, and when that is the case half the battle is over. Let the sun shine as it has done this past summer, and, other things being favourable, golden Muscats are the reward of skill and attention.—S.

#### RETURNING CHRYSANTHEMUM BLOOMS.

IN the *Journal of Horticulture* for November 6th Mr. J. Freeman complains of not being able to regain his cut blooms from a Chrysanthemum show. I cannot sympathise with him, but would suggest to him, instead of wishing them sent back, to authorise the secretary to give them away at the close of the show. He will earn untold millions of blessings from the recipients, mostly dwellers in towns unblest with gardens—nice modest young men and maidens—who will take them home as proud as peacocks to their grandams. Why want them back? They will not be fit for future exhibition or even for table decoration so well as fresh-cut blooms, and to cut a good stand of twenty-four varieties he must have scores of plants, may be, to cut from.

The comparison with poultry will not hold good. A fine Cochin cock and his comely mate may survive in the fulness of their beauty for two or three years or more, but the finest Chrysanthemum ever bloomed may not survive two days; therefore after the show give the blooms away. I do not own a single Chrysanthemum, much as I admire it, but giving away is what I do encourage after a Rose show; and here, being an obscure individual known to but few—"D., Deal," and others—I must sign myself—F. H. G.

#### THE LEEK ROSE SOCIETY.

AS this Society has stood forth as the champion of all that is right and honourable in exhibiting, and looks with disfavour on the National as not reaching its high standard of morality, I should like to ask the Secretary the following questions:—

- 1, Is it true or not true that the Committee sends round the day before the show inspectors, who visit the gardens of the intending exhibitors, see their Roses, and take a list of those they intend to exhibit, in order to prevent Roses being dishonestly obtained?
- 2, Is it true or not true that on one occasion the judge, having noticed added foliage, disqualified a box; but was told he must not do it, and on his appealing to their rules forbidding it, said, "If you do that you will have to disqualify nearly every box in the show?"
- 3, Is it true or not true that one year, some days before the show, someone entered Mr. Eyre's garden (the winner of the medal) and cut off every bloom and bud on his Roses.
- 4, Is it true or not true that Mr. Johnson has been publicly accused in the local paper of having purchased Roses and exhibited them, and gained prizes at other places?
- 5, Is it true or not true that he (Mr. Johnson) offered a prize for a stand of flowers: that he (or his wife) made up one entirely of Orchids, and won his own prize?—A PUZZLED INQUIRER.

#### WALTHAM CROSS, DR. HOGG, AND GOLDEN QUEEN GRAPES.

I READ with much interest the practical article by Mr. Iggulden on several different sorts of Grapes, and believe his remarks to be a reliable guide to those who are about to plant. I would therefore like to ask him if he has had any experience with either of the above-named sorts. I was invited by Mr. William Paul to inspect the two first-named varieties when growing at his nursery before they were sent out, and I then thought them to be Grapes of great promise. The Vines appeared to be vigorous in constitution and large in both bunch and berry, and when I saw them they were well-coloured and otherwise well finished. I am certain that Dr. Hogg Grape was as good in colour as any white Grape I have seen

on an exhibition table, but the Waltham Cross (a white sort) was not so forward, but it was finishing well. With regard to Golden Queen, a sort sent out by the late Mr. Pearson, I have only had one season's experience with it, and, so far, it has proved a vigorous and good cropping variety; sets well; bunches medium size, not many of them shouldered, but in the last stage of ripening. The flesh of some of the berries turned a dirty cloudy colour, and when cut open the flesh was all through alike. This, of course, is a great drawback to a Grape of that sort, but one which experience in its cultivation may have overcome; therefore I shall be obliged if Mr. Iggulden will state his experience, if any, as many besides myself would be glad to know.—THOMAS RECORD.

#### ANEMONE JAPANESE CHRYSANTHEMUMS.

THIS new race is a distinct break from the old form of Anemone Chrysanthemums, of which Gluck is a good typical representative. The new section is, too, a great improvement on the old, the long outer guard florets in some instances hanging in almost a perpendicular form, which gives a much more graceful appearance than the stiff form of, say, Georges Sands and many others. Even when shown on stands cupped in the usual way the Anemone Japanese are very effective; the colours are varied and pleasing, and no doubt before long other varieties will be added to the list. A yellow variety would be much appreciated. A white sport from Fabias de Maderanaz was exhibited at the recent Show held at Kingston. It was the exact counterpart of its parent except in colour, which will when perpetuated be a fine addition to this class.

As visitors to the numerous Chrysanthemum shows appear to greatly admire these new varieties, would it not be well now to consider the advisability of offering prizes for a stand of, say, twelve blooms in six varieties of Anemone Japanese? Some people still have a preference for the older kinds, and adverse remarks are sometimes heard as to the way the prizes are given to these newer forms. Some contend that they have not sufficient disc or "stuff" in the centre to bring them up to the older standard of Anemone Chrysanthemums. If prizes were offered for both kinds the advocates of each race would be satisfied, and judges would have a much easier task in awarding the prizes, and their awards could not meet with the adverse criticism as they sometimes now do. Again, if some society were to offer prizes for twelve blooms in, say, six varieties, set up with stems sufficiently long to permit of the florets falling in their natural manner, their true character would be seen, as in some of the varieties the natural form is so different when growing that staged as they now must be with cups in the orthodox style, the true character of the flower is lost. As this race of Chrysanthemum requires no "dressing," it would be far more satisfactory to offer prizes for those naturally grown than any other class so grown, in which the best attempt I have yet seen was a failure.

I give below the names and descriptions of the varieties that have come under my observation, and which, in my estimation, are, as a race, a long way ahead of the older type of Anemone Chrysanthemums.

*Fabias de Maderanaz*.—I consider this the best of the type. It is very elegant in form, having a large high disc or centre of a rosy-lilac shade, tipped with white; the guard petals hanging almost perpendicularly, from 3 to 4 inches long or more, of a soft shade of pink, striped with a deeper tint. It is so entirely distinct from any other variety that it must become a great favourite for home decoration or exhibition purposes (see fig. 76).

*Mdlle. Cabrol*.—A large flower, having long flat guard florets of a delicate blush colour, which sometimes incurve, giving it quite a novel appearance. The centre being lilac renders it a striking variety.

*Sœur Dorothee Souille*.—Fringe pale lilac; centre, which is very high and wide, being white, shaded rose, fading to nearly white. This, when well grown, ranks as one of the very best.

*Madame Clos*.—Guard florets flat or strap-shaped, of a beautiful rose-violet; centre, which is full, white, shaded with lilac and tipped with yellow. This variety is one of the earliest, is of excellent habit and constitution, producing blooms in great quantity.

*Madame Thérèse Clos*.—This is similar in colour to the preceding, but the centre is not any better than a hollow-eyed Japanese kind that is not worth growing.

*Madame Bertha Pigmy*.—Rose-magenta guard florets, centre of the same colour; a full large flower.

*Souvenir de L'Ardene*.—Deep lilac guard florets, centre paler; fine bold solid flower. These two last named are not quite so graceful in habit as some of the others; still they are desirable, as they afford variety in colour.

*Duchess of Edinburgh*.—This is the oldest variety of this new type of Anemone Chrysanthemums; very delicate blush-white guard florets, centre lilac, tipped white. For exhibition purposes it has the fault of being too small; still as a decorative variety it is very fine.—E. MOLYNEUX, *Swanmore Park*.

[The engraving represents a flower exactly as it was grown by Mr. Molyneux, the true character and beauty of which would be quite lost if the blooms were cupped and staged in the orthodox style. We commend the proposition to show these distinct varieties in the manner suggested to the attention of the committees of Chrysanthemum societies.]

#### GUMMING ROSES.

THIS novel heading to articles has, during the past few weeks, obtained much notoriety of an unenviable character in journals devoted to horticulture. We have been accustomed for many years to the fact



that some flowers were not considered perfect or even presentable to the eyes of a judge until they had undergone some preliminary arrangement or dressing of the petals. Nature was, in fact, so deficient that Art had to be called in to assist. Dahlias, Picotees, and Chrysanthemums were the principal flowers that Nature had neglected, the two former especially. Without the assistance of Art these flowers dare not appear in the awful presence of a judge—they must, in fact, be “dressed” for the occasion. But I fancied we Rose lovers hoped that our favourite flower was in itself so perfect that it needed not the touches that other flowers had to

Any edict, however, that may go forth, if it is to carry weight, should be the result of a full committee's deliberations.

In common, I trust, with many Rose growers I am concerned to think that the present decision of the Committee has been to gloss over a case of deception, to say the least of it. As the matter stands I scarcely think the Committee of the National have exactly met the difficulties of the case. In law they may be perfectly correct; in equity I think they have made a mistake. I do not think that the matter even of this decision can rest where it is. The *Leek Times* has another letter from the



Fig. 76.—FABIAS DE MADERANAZ.

undergo. To all such believers the letter of the Secretary of the Leek Rose Society must have proved a rude shock.

The consideration that the Leek Rose Society was affiliated to the National Rose Society, and that the parent Society does not appear to view the incident in exactly the same light as the offshoot, will probably bring the whole subject of legitimate and dishonest practices in regard to Rose-exhibiting into the “realm of practical politics.” It seems to me that something must be done, and looking at the note of the National Society's Honorary Secretaries in reference to this matter it appears that the whole subject, not by any means a pleasant one, is receiving attention.

Hon. Sec. of the Leek Rose Society. This letter contains an extract from a letter of Mr. W. Paul, and this extract seems to point to the conclusion that at least some of the Committee did not understand that such a case was to be a subject for adjudication. This view of the subject gains further strength from the fact that several of the Committee, in replying privately to the Leek officials, are strongly opposed to such practices.

I believe I am correct in saying that there is a rule, if not written, yet understood, that no foliage may be added to a bloom in Rose-exhibiting, even though that identical foliage may have come off the identical



shoot from which the bloom itself was cut. Any loose foliage added to a bloom is a disqualification. If this be so—and I feel strongly that I am right as to this impression, although I cannot put my hand on such a rule in black and white—but, if this be so, it means that any addition is fatal to success, for surely if the lesser sin entails disqualification the greater sin of gumming cannot be passed over.

What in this case could have been the object of gumming? Plainly it must have been to insure certain Roses, and those in all probability the grandest, staying. How many of us know full well as we have looked at grand blooms in the early morning, that if such blooms would only last in that condition throughout the day that our chances of success would be great; and if gumming Roses is to be an admitted and legitimate practice, possibly some of these grand blooms will in future be made to stick, even though they might not stay. But surely this is not a consummation "devoutly to be wished," and I for one cannot but trust that the National will yet declare "gumming" and all similar attempts at deception in the Rose as meriting some distinguishing mark, but that mark should be disqualification. Sewing petals together, a stratagem by which I was myself once defeated, is of similar character, neither better nor worse than the gum, though possibly more easily detected.

We shall all look anxiously to see what the National Society will do.—JOSEPH HINTON.

THE letter of the Hon. Secs. of the National Rose Society upon the above subject is by no means satisfactory. They say their Committee "expressed no opinion upon the practice of gumming Rose blooms," but they altogether ignore the fact that this was exactly what they were asked to do. They therefore left undone what they ought to have done, and did that which they ought not to have done. They were distinctly asked for an opinion—"to approve or condemn the practice," and they very improperly gave a "decision" in favour of this newest form of trickery. They did this, it seems, because "they had no law to guide them in the matter." No law, forsooth! Why, our schedule, a copy of which was sent to them with our case, has the following rule printed in large type—"Roses to be shown as cut from the plants." If this rule does not apply it must follow that Roses may be cut from the plants with their centres full of gum. As it is evidently their intention to frame some rule for future guidance, their "decision" seems on a par with that of the intelligent jury who returned a verdict of "Not guilty, but don't do it again."—ARTHUR JOHNSON, *Hon. Sec., Leek Rose Society*.

#### SEPTEMBER BRUSSELS SPROUTS.

THE thoughts of your correspondent on page 391 and mine do not agree on the subject. I regard Brussels Sprouts as a winter vegetable. "Thinker" strives for them in summer, and hails their coming then with delight. His Cabbages are a surfeit by September. I am not surprised at this; ours are so before June is out. In September Cauliflower palls on his appetite, and at the same time he is anxious for a change from Peas to Brussels Sprouts. Truly tastes differ, and, speaking generally, Cauliflowers cannot be had in until June, and in three months afterwards they "pall on the appetite;" but what must Brussels Sprouts do when the first of them are used in September and the last of them in seven months afterwards? as the end of March is no uncommon time for Brussels Sprouts to be still in season; indeed, after a severe winter, they are often about the only green vegetable left in the garden, and under the circumstances I am sure they are far more appreciated then, and in the winter months, than as rivals to delicious Green Peas, delicate Kidney Beans, rich Tomatoes, fine Globe Artichokes, succulent Spinach, tender Vegetable Marrows, and hosts of other good things in season in September. I would not regard Brussels Sprouts as an acceptable change to these from April until the end of October at least, but they would be an agreeable change from Leeks, Savoy, and Parsnips from November until March. It may be thought to be good culture to sow Brussels Sprouts in September with the Cauliflowers, and have them ready for gathering next September, or in twelve months afterwards; but we have Brussels Sprouts now, and annually at this time from seed sown in the open in March, and as they meet all our requirements I cannot see any substantial advantages to be derived from winter frame protection and other extravagant modes of culture.—J. MUIR.

#### HARDY PLANTS; AT CAMBRIDGE.

(Continued from page 443.)

LEAVING the Bog Plant department, we turn to inspect some of the many trees and shrubs grouped upon the lawn in the neighbourhood of the lake. Conspicuous among these is a fine example of *Asimina triloba*, not a mere straggling plant such as is usually seen, but a good all-round specimen 10 feet high and as much through, and probably one of the best in cultivation; then a few yards further on we saw the curiously plaited growth of *Celastrus scandens* and *Enonymus latifolius* fruiting; and in the centre of a large bed near by was *Eucalyptus Gunnii*, a most distinct plant, which has made a season's growth of 5 feet. *Pavia macrostachya* was the next tree of interest, it being among the few summer-flowering deciduous trees, the pyramidal inflorescence and white flowers with salmon-red anthers bearing a strong resemblance to the *Æsculus*. We had now reached that part of the garden devoted to hardy perennials and herbaceous plants, and which are arranged in their respective groups in beds. It has been anything but a favourable summer for the majority of perennials and such plants, and especially so those which make most root near the surface. All these have suffered to a very great extent, and having in many cases only reached about

half their usual height. Still, there is something to be learnt even from this, inasmuch as it tends to show that those which have done fairly well under the tropical sun which we have experienced do not object, but rather delight in it, and, therefore, are suitably adapted for the higher and drier portions of the rockery where they are most likely to be accommodated. Still there are advantages and disadvantages in all gardens, and the Cambridge Botanic Garden, in common with all others, has its share. It has a subsoil of gravel, which, however, seems to agree with a number of plants, judging from the clean growth of the timber of the district, and its general luxuriance, notwithstanding the long-continued drought. Among *Astragalus* I noted the true *A. aristatus* doing well, also *alopecuroides*; then we found a striking plant in *Gaura Lindheimeri*, an old acquaintance, and which I was pleased to meet again. There was a charming bush of it nearly 3 feet high and as much through with hundreds of its white flowers. I had never seen so fine a plant before, and had been inclined to regard it as somewhat tender, having upon one or two occasions lost it during hard winters when planted in somewhat stiffer soil. Evidently a warm, dry, and well-drained soil suits, and those who desire one of the most decorative of summer perennials should invest in this at once. There is nothing stiff and formal about it, but a grace which lends an additional charm to the plant, and is one of those requiring no artificial support. Not less beautiful were the brilliant scarlet *Pentstemon*-like tubes of *Zauschneria californica*, which, by the way, reminds me that it is some way ahead of its usual flowering period, and several others besides, the change brought about no doubt by the great summer heat. This dwarf member of the *Onagraceæ* order is almost unrivalled in the summer, and it should find a place in every garden, seeing it is suited for the border or rockwork, and needs no special soil. It is a true herbaceous perennial, and should have plenty of room superficially, since it is wont to throw up stoloniferous growth, and makes a good compact cushion not more than 9 inches high, with a continuity of its scarlet flowers. This was doing remarkably well.

I must pass over many plants of interest, for to enumerate all one sees would take far too much time and space. *Rubia peregrina* is pretty, and *Galium rubrum* is distinct and feathery in appearance, producing a pleasing effect by artificial light in vase decoration. *Erigeron* (*Aster*) *glaucus* is a distinct Composite, and an unfrequent occurrence. It seems disposed to a half-shrubby habit, with entire somewhat obovate spatulate glaucous leaves and lavender-blue florets. Of other *Asters* I note *A. sibiricus* and *A. sericeus*, the latter a distinct plant, rather slow-growing and difficult to increase, having soft silken leaves. A bold Composite is next found in *Leucanthemum lacustre*, which nurserymen have been pleased to call *L. maximum*. It grows about 2 feet 6 inches high, having thick fleshy leaves and flowers 3 inches across, and makes a good autumn plant. It does not do well, however, in all soils, the growth often being distorted and the flowers malformed. a circumstance I have never been able to account for. *Helianthus strumosus* and *H. multiflorus*, with a minor variety, are the best of the perennial Sunflowers, the former not nearly so widely distributed as it deserves, seeing that it possesses many meritorious points. It is remarkably floriferous, and is of neat habit, and similar in height to *H. multiflorus*. There are many others grown, but none so good as those I have mentioned, and which were only a little more dwarf than usual. *Othonna cherifolia*, a handsome and distinct perennial of shrubby habit, has smooth glaucous leaves and yellow flowers. Though by no means a showy flower, its distinct type of leaf and general aspect are such as to make it at all times a distinct plant for the rockwork or border. It is here in fine condition, being 3 feet 6 inches across, and is rather attractive. *Michauxia campanuloides* and *Pentstemon centranthifolius* were passing out of flower. *Astragalus tragacantha* in a small bed by itself was doing well, as was also *Teucrium pyrenaicum*, *Scutellaria alpina*, *Salvia glutinosa*, and *S. Horminum*. The last-named is rather a good decorative plant. Its true flowers are inconspicuous, and appear early in June, and with them the deep purple bracts, which continue for weeks, and make the plant well worth a position in the border.

Continuing our ramble through the gardens we passed a fine group of *Lavatera olbia* some 60 feet in length, and which had made a fine display, evidently by the seed pods. Close to it is a very fine specimen, well furnished, of *Biota pendula*, nearly 20 feet high, and is rarely seen in good condition. This, together with a fine plant of *Abies excelsa monstrosa*, claim to be among the finest examples of this kind.

The rockery, which, though not extensive, is of considerable interest, and must not be overlooked. It contains a great variety of choice plants, such as *Primula integrifolia*, *Salvia interrupta*, *Haberlia halopensis*, *Primula mimina*, *Androsace sarmentosa*, *A. lanuginosa*, *Campanula fragilis* flowering freely; *Hypericum reptans*, a distinct and pleasing plant of prostrate habit and very profuse bloomer; the Apple-scented Columbine, *Aquilegia grata*; *Primula Stuartii*, a good plant; *Campanula abietina*, *Saxifraga Fortunei*, a fine autumn-flowering species; a nice tuft of *Hypericum verticillatum*, also *Chrysosplenium glaciale*. Then we saw the pigmy *Utah Aloe*, *Agave utahensis*, which is hardy beyond a doubt, and singular on that account. Remarkably pretty were patches of *Cyclamen hederifolium* and its variety, which had already a number of fully developed flowers. One of the most effective of summer-flowering rock plants is *Campanula isophylla alba* with glistening pure white flowers, in which respect it is unique. An interesting coincidence in connection with this plant is that it is an accidental seedling which came up in a batch of seedlings of *C. isophylla* under the care of Mr. Lynch in the Kew Gardens, and is still a rare plant. *Campanula haylodgensis* is also very distinct, and a most profuse bloomer. There are an almost endless number of *Saxifragas* of several sections, such as *Burseriana*, *juniperina*, *Valdensis*, *squarrosa* and *aretioides*, *S. Maweanae*, *Wallacei*, and others; *Sedums*, small choice Ferns, all in nice nooks, *Globularia cordifolia*, *Hippocrepis helvetica* 2 feet across, and, lastly, a pigmy Spurge, *Euphorbia capitata*. This is an erect little species with glaucous leaves in the way of *E. myrsinites*, and it was about 2 inches high and very distinct.

On a south border Mr. Lynch has the several hardy species of *Opuntia*, planted on a mound covered with small stones. Here I noted *O. brachyantha*, *O. Rafinesquii*, *O. humilis*, *O. arborescens*, and *O. camanchica*, all doing well. Planted against the wall of one of the plant houses was *Scilla maritima* flowering. A little farther on, similarly placed, was a fine clump of *Pancreatium illyricum*, which has evidently been undisturbed for years, and flowers annually. *Iris iberica* and *Susiana* are both side by side, but had been dried off, and were under the surface. These are never lifted, but covered with



glasses to keep them dry till about the middle of August; they are then uncovered. This periodical drying process is considered conducive to their well-being by Mr. Lynch. Both species, however, having been well flowered under very opposite conditions renders it doubtful as to whether any plant so near akin to evergreen is benefited ultimately by such treatment. Still one is so anxious to have flowers of these rarities. In the same border *Lobelia Tupa*, a scarlet species from Chili, was flowering. There are many other plants, principally bulbous, in this border, but being mostly spring flowers were at rest at the time of my visit.

We had a somewhat hurried look through the range of plant houses, but I will not attempt a description of the numerous occupants, but will as briefly as possible mention some of the most conspicuous. Among these *Falkia repens*, a plant of dwarf habit, and with erect pinkish white cups was very pretty and effective. So, also, was *Lagerstrœmia indica*, flowering in 48-sized pots. *Pothos aurea*, with its deeply cut leaves, makes a good pillar plant. *Adiantum farleyense*, as a basket Fern, is quite a new departure, and *Pteris tricolor* is in excellent condition. *Ouvirandras*, with their characteristic skeleton leaves, are very singular, and among other water plants may be mentioned *Nymphœas flava* and *pygmaea*, *Nelumbium luteum* growing well and flowering freely; also *Sagittaria montevidiense* (the latter being nearly 5 feet high). *Ipomœa Horsfalliae* was flowering from the roof in the stove, and in the large conservatory *Pandanus furcatus* was carrying several large fruits. *Desfontainia spinosa*, a hardy shrub in southern counties, though seldom flowering, had several of its scarlet tubular yellow-tipped flowers upon it. *Trichinium Manglesi* is always welcome, as are its globular woolly heads of flowers. It is not thoroughly hardy, but very nearly so. In another house were several species of *Droseras* doing well, and *Exacum affine* flowering in company with *Stenogaster concinna*. Here also I noticed a fine plant of *Actinopteris radiata* var. *australis*. From here we passed to the succulent house, where a general collection are to be seen, together with the gigantic specimen of *Aloe plicatilis*, 10 feet through, and said to be the finest in Europe. In the reserve ground were a variety of plants, some on trial and many others in readiness to fill up vacancies as they occur. Here may be seen *Glossocoma clematidea* and *Clematis Davidiana*, a plant seemingly allied to *tubiflora*; and adjoining this was the minor form of the scarlet Trumpet Honeysuckle, *Caprifolium sempervirens*. It is seldom seen now-a-days, though among the best of climbing

Gloire de Toulouse, Comte de Germiny, and a very beautiful example of the Anemone-flowered variety, *Fleur de Marie*. Mr. Collins, gardener to Councillor Baines, Nottingham, had many well-grown samples, noticeable amongst them being a small-flowered variety named *Morceau*, and highly coloured flowers of *Progne*. Other members brought fair examples. Mr. T. Edington, gardener to H. Ashwell, Esq., J.P., Woodthorpe Grange, had a remarkable fine lot of *Primulas*, some of which measured 3 feet in circumference, and laden with fine bold trusses of highly coloured flowers. Messrs. J. R. Pearson & Sons, Chilwell, had a large and good collection of Apples, amongst which we noticed fine samples of *Bramley's Seedling*, *Warner's King*, *Cellini*, *Beauty of Kent*, and many others. S. Thacker, Esq., sent a small but well-flowered plant of *Cypripedium Spicerianum*, and cut flowers of other Orchids.

#### RIVERS' NEW GROUND VINERY.

MR. T. F. RIVERS of Sawbridgeworth has for some time past been engaged in the production of a structure which shall supersede the old and more or less inconvenient ground vineries in simplicity, convenience, and cheapness. The main feature of the new appliance is that the ridge is simply formed of gas piping, on which the lights are hooked, these being perfectly secure, yet easily removeable; they may also, if required, be turned quite back, resting on the opposite side of the ridge. The "Vinery" is above ground, and the sides can be formed of bricks or boards, as preferred. The structure is 3 feet 6 inches wide, and, as will be readily perceived, may be used for many purposes besides that indicated.

#### CHRYSANTHEMUM SHOWS.

Owing to the great number of shows occurring at the same time it is difficult to obtain reports of all, and the demands upon our space neces-

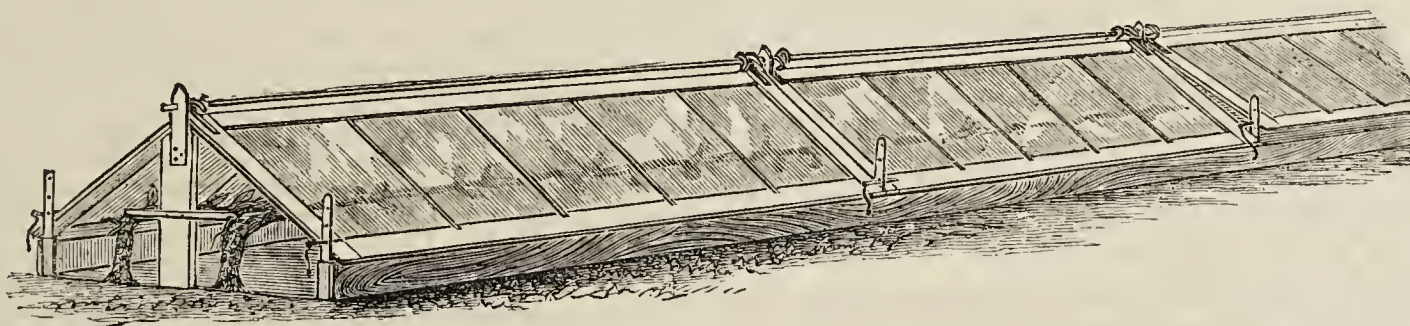


Fig. 77.—RIVERS' NEW GROUND VINERY.

plants. The list of good things might easily be extended, but I will suffice with the remark that I was much pleased and deeply interested with my visit to such a garden, where something fresh may ever be seen and some lesson always learnt. In conclusion, my thanks are due to Mr. Lynch, by whose kindness and courtesy everything of interest was brought under my notice and thus a most enjoyable day was brought to a close.—E. J.

#### NOTTS HORTICULTURAL AND BOTANICAL SOCIETY.

A SPECIAL general meeting of the members and friends of the Notts Horticultural and Botanical Society was held at the Society's rooms, Mechanics' Institute, Nottingham, on Wednesday, November 12th, partly for the purpose of hearing a paper read by Mr. A. H. Pearson of Chilwell Nurseries upon "Hardy Fruit for the Midland Counties," and partly for the purpose of giving the members an opportunity of making a display of Chrysanthemums and other horticultural produce. The chair was occupied by James Cooper, Esq., of Elm Bank, Nottingham, who in the course of a very practical and energetic address, pointed out the usefulness of such societies, and spoke encouragingly of the growing influence they had upon the members of an honourable and worthy profession. He congratulated the Society upon the progress it had made during the short time it had been established, and hoped to see it become one of the leading horticultural societies in the county. He felt it an especial pleasure in presiding over a meeting of that description, which was called for the purpose of hearing a paper read by Mr. Pearson, whose ancestors had done so much for the successful culture of fruit.

Mr. Pearson dealt generally with the culture of hardy fruit most suitable for the midland counties. He pointed out in a very comprehensive manner the most suitable kinds for the district, and said Apples were the most generally useful to grow, but in the face of the foreign competition the more perishable. Plums, Pears, and Damsons, together with Cherries, Nuts, and bush fruits, might be cultivated with much profit. At the conclusion of the paper a very spirited, but good-humoured discussion ensued, in which Messrs. H. Frettingham (Beeston), Bush, Walker, Meadows, Thacker, and Edington took part. A very cordial vote of thanks was passed to Mr. Pearson for his paper, and to the Chairman for presiding.

The room was crowded to excess, many members even being unable to obtain comfortable standing room. There were several ladies present. A large collection of cut blooms of Chrysanthemums occupied the table in the centre of the room, and much interest was evinced in them. Mr. N. German, gardener to T. B. Cutts, Esq., of Malvern House, Nottingham, staged remarkably fine examples of *Jardin des Plantes*, *General Bainbridge*, *Mr. Bunn*, *Queen of England*, *Barbara*, *Empress of India*, *Princess Teck*, &c., amongst show varieties, whilst in Japanese he had well-grown blooms of *Source d'Or*,

sitate brevity in each case. In consequence we can only indicate the chief features and leading stands at the respective exhibitions.

#### HAVANT.—NOVEMBER 7TH AND 8TH.

THE first Chrysanthemum and Fruit Show was held in the Town Hall on the dates named, and was, for a first show, very successful, the only exception being in the trained plants. In these the growers have something to learn to produce such grand specimens seen at the London or Southampton Shows. As it was, those that were shown perhaps answered the purpose best, as space was much too limited to admit of larger plants. The entries in most classes were numerous; the Society has a good list of patrons, an efficient Committee; and in Mr. J. C. Collins they possess a most courteous Honorary Secretary.

The cut blooms were far beyond the average merit usually seen at much larger shows, scarcely an inferior bloom being staged, which speaks well for the interest taken in the queen of autumn flowers. The most important class was that for twenty-four blooms, twelve Japanese and twelve incurved. This was an open class, the first prize being well won by Mr. C. Penfold, gardener to Sir F. Fitzwygram, Bart., M.P., Leigh Park, Havant, with extra large solid blooms particularly fresh, of good colour, and neatly set up. Second, Mr. W. White, gardener to J. E. Cox, Esq., Havant, with good flowers, but not so large as the former. Equal third prizes were awarded to Messrs. W. & G. Drover, nurserymen, Fareham, and Mr. W. Roberts, gardener to E. R. Longcroft, Esq., Havant. For twelve blooms, six Japanese and six incurved, the first prize was awarded to Mr. J. Collins, gardener to J. Taplin, Esq., Havant, for a stand of blooms of large size and freshness. This was the only entry, and well did it merit its position. For the same number of blooms, exhibitors in this class being excluded from the previous one, Mr. C. Penfold followed up his previous success by again winning first with large compact flowers; second, Mr. W. White, gardener to J. Cox, Esq.; third, Mr. W. Roberts. For six blooms, reflexed, some very fine blooms were staged by the first prizewinner, Mr. W. Roberts; Mr. C. Penfold, and Mr. H. Garnett followed. For six blooms of Anemones in three varieties, Mr. C. Penfold was easy first with grand flowers; second, Mr. J. Collins. Class 16 was for four blooms of Mrs. G. Rundle, and four each of *George Glenny* and *Mrs. Dixon*. This stand was very effective, and quite out of the common way. First, Mr. W. White, with particularly neat flowers; second, Mr. Penfold, with blooms larger, but not so even in size, nor were they so fresh; third, Mr. J. Collins. For twelve blooms, four Japanese, four incurved, and four reflexed, Mr. Penfold was again first with extra fine flowers. Messrs. W. & G. Drover showed well in this class.

For the best group of Chrysanthemums, space not to exceed 40 feet, Mr. W. Roberts was placed first with a neat arrangement; perhaps the colours were a little too sombre, not sufficient light-coloured flowers were used



The plants ranged from 2 feet to 5 feet high, with good foliage. Messrs. J. C. Collins and Mr. W. White were placed equal second. Want of space forbids us going into the details of the other classes, but table plants, Primulas, Cyclamens, Grapes, Apples, and Pears were all well shown by Messrs. Collins, Penfold; Hepper, gardener to Mrs. Sandeman. We must not omit to mention a very excellent collection of twenty sorts of vegetables exhibited by Mr. N. Fuller, gardener to Sir J. Clarke Jervois, Idsworth House, "not for competition," consisting of fine examples of Parsnips, Leeks, Cauliflowers, Salsafy, Scorzonera, Brussels Sprouts, Carrots, and about everything else in season.

#### CRYSTAL PALACE.—NOVEMBER 10TH AND 11TH.

OWING to the earliness of the season generally this Show came somewhat too late to ensure the presence of many exhibitors, most of whom had exhausted their supplies of blooms at shows earlier in the week. The competition was therefore not very keen, and the quality of the blooms, except in two or three of the leading classes, was not up to the standard. Several fine groups were, however, represented, and added much to the beauty of the Exhibition; but the chief feature was the superb group arranged by Mr. Head in front of the orchestra in the transept. This comprised a great number of well-grown plants, bearing in the majority of cases large and handsome blooms. They were freely arranged, with groups of statuary and a margin of healthy young Palms, imparting a most satisfactory finish to the group generally.

The chief class for blooms was that for thirty-six incurved, distinct varieties, and in this Mr. Gibson, Morden Park Gardens, Mitcham, was first with large substantial blooms of the following:—Back row—Yellow Perfection, Alfred Salter, Beethoven, Queen of England, Golden Empress, John Salter, Empress of India, Empress Eugénie, Lord Alcester, Mr. Howe, Hero of Stoke Newington, and Golden Queen; second row—Lady Carey, Nil Desperandum, Bendigo, Princess Beatrice, Barbara, Princess Teck, Mrs. Dixon, Cherub, Venus, Mrs. Heale, Mrs. Shipman; front row—Angeliua, White Venus, Mr. Corbay, Mrs. J. Rundle, Le Grand. Baron Buest, Mr. G. Glenny, Princess of Wales, Eve, Mr. Brunlees, Isabella Bott, and Lady Slade. Mr. Gibson was the only exhibitor in this class, but it was surely a mistake to show Mr. Howe and John Salter as distinct varieties.

With thirty-six Japanese Mr. C. Gibson gained the same place with large brightly coloured blooms, arranged as follows:—Back row—Criterion, Sarnia, The Sultan, Fair Maid of Guernsey, Ceres, M. Ardene, Grandiflorum, J. Delaux, Madame C. Audiguier, Comte de Germiny, Mdle. Lacroix and Thunberg; second row—Baronne de Prailly, Duchess of Albany, Meg Merrilees, L'Incomparable, Red Dragon, Peter the Great, Striatum, Fanny Bouchardat, Boule d'Or, Album striatum, Triomphe de la Rue des Chatelets, and Album plenum; front row—Nuit d'Automne, Ethel, Bismarck, Père Delaux, Fulgore, M. Delaux, Hiver Fleuri, Nagasaki Violet, Elaine, The Daimio, Fulton, and Arlequin. Mr. C. Herrin was second with good blooms, but not quite so fresh as the first; and Mr. J. W. Springbett, Hammond Street, Cheshunt, was third.

There was better competition with twenty-four incurved blooms, but Mr. C. Herrin, Chalfont Park Gardens, Gerrard's Cross, easily gained the first place with a fine stand of the following:—Back row—Empress Eugénie, Princess Teck, Jardin des Plantes, Lord Wolseley, Empress of India, Queen of England, Golden Empress, Jeanne d'Arc; second row—Barbara, White Venus, John Salter, Mrs. Haliburton, Sir S. Carey, Lady Hardinge, Mr. Brunlees, and Venus; front row—Princess Beatrice, Golden Eagle, Mrs. Dixon, Refulgence, Cherub, Lord Alcester, Mrs. Shipman, and White Globe. Mr. T. Couldery, gardener to J. Levy, Esq., The Shrubbery, Grove Park, Lee, followed with looser and rather irregular blooms; Mr. D. C. Powell, gardener to the Earl of Devon, Powderham Castle, Exeter, being third with smaller examples.

Mr. C. Herrin was also first with twenty-four Japanese, very beautiful blooms, rich in colour, fresh, and substantial. The stand was made up of the varieties named below:—Back row—Comtesse de Beauregard, Triomphe de la Rue des Chatelets, Madame C. Audiguier, Boule d'Or, Baronne de Prailly, Fair Maid of Guernsey, M. Ardene, and Thunberg; second row—Album plenum, Dr. Macary, M. Delaux, J. Delaux, Fanny Bouchardat, Grandiflorum, M. Astorg, and Magnum Bonum; third row—Agrements de la Nature, Meg Merrilees, Roseum superbum, Peter the Great, Margaret Marrouch, Sarnia, Duchess of Albany, and Hiver Fleuri. Mr. T. Couldery followed with smaller blooms, and Mr. D. C. Powell was again third.

There were seven exhibitors of incurved varieties. Mr. C. Good, gardener to G. G. Stone, Esq., Eastcote, Red Hill, Surrey, secured the first place with even blooms of Golden Empress, Princess Teck, Jardin des Plantes, Princess of Wales, Nil Desperandum, White Venus, Mrs. Shipman, Eve, and Mrs. Sharp; Mr. J. Sharpe, gardener to F. Hatchett, Esq., Parkfield, Grove Park, Lee, was second; and Mr. Slogrove, gardener to Mrs. Crawford, Galton, Reigate, third. The same number entered with nine Japanese blooms, the last-named exhibitor being first with bright examples of Soleil Levant, Madame C. Audiguier, Elaine, Henri Jacotot, L'Incomparable, Baronne de Prailly, Mons. C. Hubert, Peter the Great, and Comte de Germiny; Mr. C. Goode was a close second; and Mr. Wyatt, gardener to J. Perry, Esq., Bradenhurst, Caterham Valley, third. The best nine reflexed were shown by Mr. C. Arnold, Oak Lea, Lawrie Park, Sydenham, who had neat blooms of Peach Christine, Golden Christine, Pink Christine, President Garfield, Chevalier Domage, White Christine, Annie Salter, King of the Crimson, and Progne. With twenty-four Pompons Mr. C. Chadwick, gardener to E. M. Nelson, Esq., Hanger Hill House, Ealing, took the lead, showing pretty blooms of Madame Montels, Queen of Anemones, Madame Sentir, Firefly, and Antonius amongst others. The same exhibitor was also first with twenty-four large-flowered Anemones and reflexed varieties, staging fine blooms of Gluck, Lady Margaret, Golden Christine, Progne, Madame Cabrol, and Louis Bonamy.

Two fine groups of Chrysanthemums were entered by Messrs. Laing and Co., Forest Hill, who were first in each class—namely, for Japanese and incurved. These groups were placed at the corners of the transept, and were much admired. The blooms were large and particularly bright in each instance, and amongst the Japanese were numbers of the best of this and last season's novelties. The amateurs' groups were not of remarkable merit,

Messrs. W. Webster and G. Collins taking the prizes in that order. Mr. C. Turner had the only group of Ivies in pots, a superb collection of varieties, and well deserving the premier prize awarded for it.

Miscellaneous exhibits were not numerous. Messrs. H. Cannell & Sons, Swanley, had a fine collection of Chrysanthemum and Pelargonium blooms. The former included all the leading varieties in each group, similar to those which formed such a feature at Kensington and the Royal Aquarium a day or two previous. Messrs. S. Dixon & Co., Hackney, also had a pretty arrangement of Chrysanthemums and Eucharis flowers with Ferns and Isolepis.

#### BATH.—NOVEMBER 12TH AND 13TH.

THIS comparatively new fixture continues to gain ground both as regards the quality and quantity of the exhibits, and also in the estimation of the inhabitants of the city and neighbourhood. Nearly 4000 visitors were admitted on the first day alone, and with such encouragement it is to be hoped that the Committee will next season consider it good policy to materially increase the value of some of the prizes. A silver cup, value 30s., is a poor first prize for twenty-four incurved blooms, and a first prize of 10s. for twelve Japanese blooms is still more paltry, especially seeing that this was the only class provided for blooms of this beautiful and most popular section of Chrysanthemums.

A considerable number of trained plants were shown, though none were particularly good. The best six specimens were staged by Mr. M. Cole, gardener to R. B. Cater, Esq., Bath; these consisting of Venus, Alma, Dr. Brock, Prince of Wales, Antonelli, and Queen of England. Mr. J. Southard, gardener to W. J. Brown, Esq., was second; his group including an extra well-grown plant of Mrs. G. Rundle, and which was eventually awarded the valuable prize offered for the best specimen in the Show. Mr. H. Scott was third. With four plants of incurved varieties Mr. Tucker, gardener to Major Clarke, Trowbridge, was first, and was followed by Mr. H. Gay, gardener to L. Daubeny, Esq., Bath, and S. P. Budd, Esq., was a good third, all showing well-known sorts in a creditable manner. The best six specimens of Japanese varieties were shown by Mr. W. Taylor, gardener to S. P. Budd, Esq., these consisting of Hiver Fleuri, Mons. Plancheron, Chinaman, Mad. B. Rendatler, and Alba Plena. Mr. M. Cole was a good second. The prizes for six Pompons were won by Messrs. Tucker and H. Scott, and for four Pompons by Messrs. H. Gay, A. A. Walters, and A. Hawkins, gardener to T. Jolly, Esq., who were awarded the prizes in the order named in each instance. A fine pyramidal plant of Peter the Great, staged by Mr. Southard, was placed first in the single specimen class, Mr. M. Cole following with the same variety, and Mr. Tucker was third. Mr. Hawkins had the best specimen Pompon, and Mr. Southard the best flatly-trained large-flowering variety, the competition being fairly good in each instance. The best three standard-trained plants were staged by Mr. Hawkins, the remaining prizes being well won by Messrs. Tucker and J. Southard. The prizes for conservatory plants were awarded to Messrs. H. Scott, J. Southard, and M. Cole in the order named, such varieties as Mrs. Dixon, Christine, Mrs. Forsyth, Sir S. Northcote, and Mr. Bunn being well shown. Several really good groups were arranged in competition for the comparatively small prizes offered, the prizewinners being Messrs. H. Gay, H. Southard, M. Cole, and W. Taylor, who were placed in the order named. Among the many varieties included, some of the best were Mons. Moussillac, Salterii, Madame C. Audiguier, Daimio, Hiver Fleuri, Baronne de Prailly, Tendresse, Fair Maid of Guernsey, Empress of India, Antonelli, Cherub, Dr. Sharp, Fleur de Marie, Mrs. Heale, Sir S. Carey, and Bronze Jardin des Plantes.

There were several classes provided for miscellaneous plants, and in most of them the competition was close and good, Mr. W. C. Drummond, Mr. S. Hallet, gardener to Mrs. West, and Mr. A. Hawkins receiving the prizes. The winners with table plants were Messrs. H. K. Waite, S. Beacher, and G. Cooling & Sons. The best group of plants arranged for effect was by G. Cooling & Sons, and included in this pleasing display were several Vandas and Odontoglossums, Bouvardias, Roman Hyacinths, Perpetual Carnations, Crotons, Dracanas, Palms, and many other healthy plants. Mr. W. C. Drummond was a creditable second.

Cut blooms were shown in fairly large numbers, and several excellent stands were included. The best twenty-four incurved were staged by Mr. J. Hobbs, Bristol; among these being good examples of Lord Wolseley, Golden Empress of India, Prince Alfred, Princess of Wales, Hero of Stoke Newington, Lady Hardinge, Princess Imperial, Princess of Teck, Queen of England, and Barbara. Mr. J. Waite was a good second, his most noteworthy blooms being of Isabella Bott, Mrs. Heale, Jardin des Plantes, Barbara, and Venus. Mr. T. Hobbs was third with twelve blooms. Mr. Baylis, the redoubtable Winterbourne quarryman, was easily first with fine fresh blooms of Mrs. Heale, Barbara, Mr. Howe, Princess of Wales, Golden Empress of India, Prince Alfred, Venus, Baron Beust, Mr. Bunn, Mrs. Cunningham, Mrs. Naish, and Golden Beverley. Mr. E. S. Cole, gardener to W. Pethick, Esq., Bristol, was a good second, his best bloom being Alfred Salter, Lord Wolseley, Etoile Polaire, Empress of India, and Jardin des Plantes. Mr. Iggulden was a good third. The prizewinners with six blooms were Messrs. W. Taylor, M. Cole, and B. Hopkins, gardener to John Bailly, Esq., Frome, most of the blooms being rather small. Mr. F. Hooper was first with twelve bunches of Pompons, these including such good sorts as Florence, Model, Perfection, Madame Marthe, Mr. Murray, Marabout, and Fairy. Mr. E. T. Pocock was second and Mr. A. Hawkins third. Mr. Baylis was first with twelve blooms of large Anemone-flowered, having fine examples of Louis Bonamy, Lady Margaret, Fleur de Marie, Empress, and Prince of Anemones. Mr. E. S. Cole was second, and Mr. T. Hobbs third. Mr. Baylis was first with twelve Japanese in not less than six varieties, staging Fair Maid of Guernsey, Golden Dragon, Grandiflorum, Madame B. Rendatler, Gloire de Toulouse, and Meg Merrilees. Mr. E. S. Cole was second, and Mr. Iggulden third, the latter having newer varieties, but scarcely so large as the premier blooms. Mr. Baylis was again first with twelve incurved blooms in four distinct colours, winning with grand examples of Prince of Wales, Mrs. Heale, Princess of Wales, and Golden Empress. Mr. E. S. Cole was a good second, and Mr. T. Hobbs third. Messrs. W. H. Mould, W. C. Drummond, and G. Cooling and Sons were the prizewinners with hand bouquets, and Messrs. E. S. Cole, E. T. Hall, and Mr. W. H. Mould with vases of flowers for table decorations, and the exhibits were very creditable generally.

Fruit, as usual, was shown in great quantities, and the quality was very



good. The best selection of six dishes of dessert fruit was staged by Mr. Nash, gardener to the Duke of Beaufort, Badminton, who had good Black Alicante and Muscat of Alexandria Grapes, a Melon, Medlars, Nonpareil Apples, and Hacon's Incomparable Pears. Mr. W. Iggulden, gardener to the Earl of Cork, Marston, was a good second, his best dishes being Black Alicante Grapes and Hero of Lockinge Melon. Mr. S. Pullman was third, and there were two other collections staged. Mr. Nash was first with four bunches of Grapes in two varieties, having well-finished Alicantes and Alnwick Seedling. Mr. W. Taylor, gardener to J. Chaffin, Esq., Bath, was a creditable second, having small but well-finished bunches of Black Alicante and Lady Downe's. Mr. H. Carpenter was third, and the same positions were occupied by these three exhibitors in the class for three bunches of any black Grapes, all staging Black Alicante. In the corresponding class for white Grapes the prizes were awarded to Messrs. J. Ellicott, gardener to H. W. Tugwell, Esq.; S. Pullman, and W. K. Waite, all staging fairly good Muscat of Alexandria. The best six dishes of Pears were staged by Mr. W. J. Smith, who had Louise Bonne of Jersey, Beurré d'Arenberg, Glou Morceau, and Crassane in good condition. Mr. E. T. Hall was second, and Mr. H. Derham third. With four varieties of Pears Messrs. F. R. Smith, S. Newman, and E. Fisher were the prizewinners. With one variety of Pear Mr. J. T. Holmes was first with Marie Louise, Mr. Deane following with Glou Morceau, and Mr. J. Carpenter was third with Passe Colmar. The best six dishes of Apples were staged by Mr. G. Garraway, who had King of the Pippins, Ribston Pippin, Blenheim Pippin, and Woodstock Pippin in good condition. Mr. H. Derham was second. The other successful exhibitors of Apples were Messrs. A. T. Hall, W. S. Dutton, E. Hall, G. Bryant, F. J. Walker, and Colonel Grant. Vegetables in collections of nine varieties were very well shown by Messrs. G. Garraway, T. Every, M. Barnfield, and J. T. Holmes.

#### WALTON-ON-THAMES.—NOVEMBER 13TH.

ONE of the most compact, cheerful, and well-arranged Chrysanthemum shows of the season was that of the Walton, Weybridge, Otlands, and Hersham Society, held in the Public Hall, Walton, on the date named. The ends of the room were occupied by dwarf specimen plants on stages reaching to the roof, some of them of marked excellence, while standard plants, the majority of exceptional merit, reached right down both sides of the building, the tables down the centre being filled with cut blooms, a great number of very high quality, the boxes of Pompons certainly equalling the best that have been staged this year.

The Exhibition would have been larger, that is if the plants of the President, Henry Corbett, Esq., could have been crowded into the hall, but a death in the family prevented Mr. Millican, Mr. Corbett's able gardener, staging his specimens; these, however, we inspected at home, and rarely have we seen more creditable examples of culture, and Mr. Millican must have shared largely in the prizes but for the melancholy occurrence indicated. Only a very brief notice of the Show can be accorded.

**Plants.**—The dwarf-trained plants were limited to 3 feet 6 inches in diameter, and very fine indeed were those in the first-prize collection of six staged by Mr. Lavey, gardener to Mrs. Wilson, and the four exhibited by Mr. Plowman, gardener to C. L. Lavers, Esq. No bent stems were visible and no stakes obtrusive, while the foliage was abundant and fine and the blooms large and bright, these ranging from forty to fifty on each plant. Mr. Reynolds, gardener to Mrs. Allen, Weybridge, was first in the single specimen class with John Salter very good indeed. Mr. Plowman was first with four standard incurved varieties with grand beehive-shaped heads  $2\frac{1}{2}$  feet in diameter at the base, very symmetrical, with excellent blooms and foliage. Mr. Reynolds followed with smaller but fresh examples. For two standards Mr. Reed, gardener to G. Beckh, Esq., Weybridge, was the leading exhibitor with excellent plants. Mr. Plowman was first with two standard Japanese with splendid heads like huge bouquets of Tendresse and George Gordon (L'Africaine), Mr. Reed following. Mr. Reynolds worthily won the chief prize in the class of four standard Pompons with plants not too formally trained and of remarkable merit, the Anemone variety Zobiede quite scenting the end of the room. Messrs. Reynolds and Reed followed with excellent examples. Mr. Reynolds staged the best dwarf Pompons, and Mr. Burns won the prize offered by his employer, H. A. Rigg, Esq., for six untrained plants with very dwarf examples carrying superior blooms and rich foliage. These plants had presumably been cut down in early summer.

**Cut Blooms.**—The first prize in the open class for twenty-four incurved was won by Mr. R. W. Strong, Wolkingham, who staged substantial yet neat and well-finished flowers, Prince Imperial (Lord Alcester) showing to great advantage; Mr. J. Strong, gardener to H. Sweet, Esq., Weybridge, following with neat and fresh blooms, Cherub being particularly fine. In the local class for the same number of blooms the honours fell to Messrs. J. Strong, Plowman, and Burns respectively, who followed each other closely. Mr. Plowman staged the best twenty-four Japanese blooms, very fine indeed, followed by Mr. Burns; while with twelve blooms Mr. Carpenter, gardener to C. J. Abbot, Esq., Walton, took the lead with full fresh examples, including a magnificent flower of Boule d'Or. Messrs. Goddard and Reed followed closely. In the class of six blooms of one variety Mr. J. Strong was first with Golden Empress, Mr. Plowman following with Venus very fine indeed. We omitted to take the names of the winners in the large-flowered Anemone class; but Messrs. Plowman, Reynolds, and Lavey were the respective winners in the class of twelve Anemone Pompons—the best stands we have ever seen, the prominent varieties being Fleur des Anemones, Marie Stuart, Mr. Astie, Antonius, Miss Nightingale, Firefly, Astrea, Madame Montels, Dick Turpin, and Sunset. The stands of twelve Pompons were similarly fine, Messrs. Plowman, Lavey, and Reynolds taking the prizes in the order named. Very fine indeed were Mdle. Marthe and its golden variety, Bob, Brilliant, Sparkler, Mirabout, Model of Perfection, Madame Rival Vernet, Mrs. Hutt, Miss Talfourd, and White Trevenna. Three blooms of each variety were staged, with stems about 6 inches long above the stands, for showing the foliage—the best of all ways of setting up the flowers, which were, and should be, limited to three in each case; as, when the number is open, bunches of all sizes are staged and cannot be judged satisfactorily.

Amateurs and cottagers exhibited creditably, and everything worked

with smoothness under the direction of Mr. G. Masters, the active and experienced Secretary.

#### RICHMOND.—NOVEMBER 13TH AND 14TH.

THE revival of the autumn Show of the Richmond Society was welcomed by numbers of growers and exhibitors in the district, and the result was a Show of considerable beauty, and which gave ample promise of still further improvement another season. This Society has an experienced Committee, a most courteous and energetic Secretary, with other officials equally desirous of rendering the autumn Show as successful as the summer Show, which is acknowledged to be the best held in the neighbourhood of London. There is consequently every reason to hope that the Richmond Chrysanthemum Show will take a prominent position amongst local exhibitions of this character. The spacious rooms of the Castle Hotel were devoted to the exhibits, the plants and groups being arranged along one side of the larger room, the cut blooms and stands of flowers occupying the two rows of tables down the centre. The second room was devoted to the afternoon and evening concerts, which were held on each of the days, and proved a great additional attraction. In this room the table plants were also arranged along one side near the wall, and with a pretty margin of Ericas to the proscenium served to furnish the room very pleasantly.

Three collections of twenty-four incurved blooms were staged, the premier position being easily secured by Mr. Woodgate, gardener to Lord Wolverton, Warren House, Coomb Wood, Kingston. His varieties were the following, all clean and beautiful blooms. Back row.—Lord Wolseley, Empress of India, Mr. Bunn, Prince of Wales, John Salter, Lord Alcester, Hero of Stoke Newington, and Novelty. Second row.—Princess of Wales, Alfred Salter, Baron Beust, Beverley, Golden Empress of India, Mrs. Shipman, Jardin des Plantes, and Mr. Brunlees. Front row.—Antonelli, Lady Slade, Lady Hardinge, Cherub, Angelina, Mrs. Rundle, Nonpareil, and Princess Teck. Mr. Bates with rather smaller and slightly rougher blooms. Mr. W. Brown third with similar examples.

With twelve incurved varieties Mr. J. Bennett was awarded the first prize for even beautiful blooms of Princess of Teck, John Salter, Empress of India, Golden Empress, Mrs. Shipman, Lord Alcester, Lady Hardinge, Mr. Brunlees, Empress Eugénie, Refulgence, Mabel Ward, and Barbara. Mr. Bates, gardener to J. E. Meek, Esq., Poulett Lodge, Twickenham, was a close second, having a fine back row of White Globe, Lord Wolseley, Golden Empress, and Queen of England. Mr. E. P. Tipping, 9, Sheen Dale Villas, Richmond, was third with small blooms. The best six incurved blooms were shown by Mr. G. King, gardener to R. Few, Esq., Wolsey Grange, Esher, who had Golden Empress, John Salter, Prince Teck, Mrs. Heales, Mrs. W. Shipman, and Lady Hardinge. Mr. J. A. Benson, gardener to W. H. Roots, Esq., Canbury House, Kingston, was a close second, and his position was only determined after a close examination. Mr. G. Chadwick, gardener to E. M. Nelson, Esq., Hanger Hill House, Ealing, was third.

The competition in the classes for Japanese was close, especially with twenty-four blooms of eighteen varieties, four fine collections being entered. Mr. King took the lead with large, substantial, and handsome blooms of the following. Back row.—Triomphe de la Rue des Chatelets, Madame C. Audiguier, Fair Maid of Guernsey, Marguerite de Marrouch, Boule d'Or, Mons. Burnet, Red Gauntlet, and Criterion. Second row.—Thunberg, F. A. Davis, Japonaise, Baronne de Prailly, Madame M. Lacroix, F. A. Davis, Comte de Germiny, Mrs. Mahood. Front row.—Fanny Bouchard, La Sceptre Toulousaine, Meg Merrilees, Thunberg, Arlequin, Soleil Levant, Balmoreau, Boule d'Or, a magnificent bloom. Mr. Woodgate was second with slightly smaller but fresh and good specimens. Mr. J. Child was third, and Mr. Bates was awarded an extra prize. Messrs. J. A. Benson, J. Munro, gardener to E. D. Paull, Esq., Cambridge House, Twickenham; and Mr. J. Bennett were the prizetakers with twelve Japanese, all showing well; while in the class for six Japanese, of which nine stands were entered, Messrs. King, Bennett, and Woodgate were placed first, second, and third respectively, there being only a few difference in the collections.

In the class for six blooms of one Japanese variety Mr. Woodgate was first with F. A. Davis (J. Delaux), very fine and extremely rich in colour. Mr. W. Head, gardener to W. Daniels, Esq., Inglewood, Kew, was second with Peter the Great; and S. Grant, Esq., Riverside, Twickenham, third with Cry Kang. The chief position with twelve blooms, six Japanese and six incurved, was secured by Mr. C. Slade, gardener to Lady Bowater, Richmond Park, closely followed by Mr. Sallows and Mr. Munroe.

For twelve Anemone blooms Mr. Woodgate secured premier honours with most beautiful specimens of the following varieties:—Sunflower, Empress (2), Lady Margaret, Mrs. Pethers, Acquisition (2), Fleur de Marie, Gluck (2), George Sands, and Louis Bonamy. Mr. Bennett and Mr. J. Child, gardener to Mrs. Slade, Claygate, were second and third, a bloom of Fabias de Maderanaz being very fine.

In the fruit classes Grapes were well represented, particularly the black varieties. For three bunches Mr. Munro was first with Alicante, large in bunch and finely coloured. Mr. Campin, gardener to J. Cave, Esq., Queensberry House, Richmond, followed with Gros Colman, large in berry and fairly coloured. Mr. O. Hiehle was first with Gros Colman, very fine in bunch and berry. Mr. Campin was second with the same, and Mr. Morrell third with Alicante, small in berry but well coloured. Mr. W. Bates had the best two bunches of Muscat of Alexandria finely ripened and clean, Mr. Campin following with the same variety much smaller; and Mr. Morrell was third with Foster's Seedling.

The only collection of six dishes of fruit was shown by Mr. Bates, who had Alicante and Muscat of Alexandria Grapes well coloured, a neat Charlotte Rothschild Pine Apple, Duchesse d'Angoulême and Glou Morceau Pears, and King of the Pippins Apple. Mr. Chadwick had the only four dishes of Pears, and was awarded the first prize, Beurré Diel being very fine. The same exhibitor was first with four dishes of Apples, King of the Pippins and Hollandbury being good; Mr. Buckland, gardener to G. J. Atkins, Esq., Cambridge Villa, Cambridge Park, being second.

For a dish of nine Tomatoes Mr. Hickle, gardener to W. Cunard, Esq., Orleans House, Twickenham, was first with Laing's Ne Plus Ultra, very even and rich colour, Messrs. Bates and Bowell following. For a dish of Carters' Dedham Favourite Mr. C. J. Waite and Mr. J. Hoar, Nuelands, New Hampton, being first and second with moderate size fruits.

The chief class for vegetables was that for a collection of six varieties,



Mr. J. Coombs, gardener to Sir H. Meux, Sheen House, Mortlake, taking the lead with Cauliflowers, Celery, Mushrooms, Potatoes, Hathaway's Excelsior Tomatoes, and Osborn's Early Beans. Mr. C. J. Waite was second with good Leeks, Cauliflowers, Exhibition Brussels Sprouts, Dedham Favourite Tomato, and Vicar of Laleham Potatoes. Mr. B. Morrell, The Cedars, Roehampton, was placed third with smaller but even specimens.

The stands of flowers, bouquets, and buttonholes occupied a table extending the whole length of the room, and some very pretty arrangements were contributed. The first-prize bouquet was shown by Mr. J. R. Chard, Clapham Common, for a charming combination of red-white Bouvardias, Tuberoses, Azaleas, Roman Hyacinths, and Roses. Mr. W. Brown was second for a bouquet of Carnations, Tuberoses, Chrysanthemums, and Eucharises. Mr. J. W. Wells, Friars Hill Road, Richmond, being third with a combination of Violets, white Chrysanthemums, and Eucharises. For six buttonholes Mrs. Skerres-Cox, Bramleigh, Richmond Hill, was first with red Bouvardias and white Rose buds, Tuberoses and Violets, white Bouvardias, and salmon-coloured Carnations. The Misses R. and A. Bowell followed. The stands of flowers were bright and showy, Mrs. F. A. Ash, Streatham Lodge, taking the leading prizes in the two chief classes. Miss R. Bowell was first with a stand of autumn berries and foliage. Mrs. Clay was also first with a tasteful stand of flowers, and Miss F. Bowell took the lead in another class.

Plants were not largely shown. Mr. King had the six trained specimens even and profusely flowered; Mr. Sallows taking the second place with dwarf and pretty specimens. Mr. Sallows and Mr. Trussler had the best standards, and Mr. Child the finest dwarf Pompons. The groups were pretty, but not so numerous as might be desired. Mr. Munro took the lead with a compact and tasteful group, the blooms being large and bright. Mr. Sallows was second with rather taller plants, but well arranged; and Mr. Campin was third with a well-finished group.

For a group of plants arranged for effect, Messrs. Hooper & Co., Twickenham, were placed first with a charming combination of Palms, Crotons, Gladiolus, Dracænas with a groundwork of Ferns, Carnations, and Cyclamens, and a margin of Isolepis and Panicums. Mr. Chadwick was a good second, his group being extremely graceful, light, and pleasing. Table plants were numerous, twelve entering; Mr. R. King leading with elegant little plants of Pandanus Veitchi, Croton Earl Cairns, Croton majesticus, Dracæna terminalis, Cocos Weddelliana, and Aralia elegans. Messrs. Hooper & Co. and Mr. J. Munro followed. Mr. O. Hieble was first with six well-grown Palms. Messrs. Page & Son, Twickenham, J. Wiggins, and W. Bates were the prize-takers with Cyclamens, the plants of moderate size, but well flowered. The first named also had a fine group of dwarf freely flowered plants.

Mr. R. Clarke, Twickenham, contributed a large and handsome collection of Cyclamens, which was highly commended. Messrs. R. Laing & Co., Forest Hill, had a pretty group of Chrysanthemums, Eucharises, Palms, Ferns, Ericas, &c., also a box of Rose blooms, very fresh and good for the time of year. Messrs. C. Lee & Sons, Hammersmith, showed a fine collection of Chrysanthemum blooms, which were highly commended. Mr. J. W. Wells, Richmond Hill, exhibited three very pretty bouquets of blooms. Messrs. T. Jackson & Son, Kingston, showed three bunches of Kempsey Alicante and Alnwick Seedling, well coloured. Mr. Wigan sent a Gourd weighing 160 lbs. Mr. J. R. Chard exhibited a pretty spray of Bouvardias and Tuberoses.

#### READING.—NOVEMBER 14TH.

THERE are few better places than the Reading Town Hall for holding a Chrysanthemum Exhibition, and probably very few better displays than which a fairly liberal prize schedule succeeded in attracting together. Last year the competition was by no means up to the standard of the societies nearer London and elsewhere; but at this the second attempt but little fault could be found, and on the whole it may be said to be even superior to the Aquarium Show. At the latter place the groups were by far from good, but at Reading there were several excellent groups both of Chrysanthemums and also miscellaneous plants. The specimen-trained plants were fairly good, and the cut blooms, notably those gaining the Judges' approbation, were remarkably good.

The best group of Chrysanthemums in a space not exceeding 50 square feet was arranged by Mr. Brookes, gardener to R. Tonkin, Esq., the second prize going to Mr. Basket, gardener to J. Palmer, Esq., equal third prizes being awarded to Mr. Hatch, gardener to B. Stevens, Esq., and Mr. Turton. The plants generally were well furnished with healthy foliage, and many fine blooms were to be seen, especially in the first-prize group. The best nine specimen plants of large-flowering varieties were shown by Mr. Farey, gardener to C. Stevens, Esq., Mr. Ashby being a good second, and Mr. Surman third. With six specimens Mr. Booker was first, Mr. Basket second, and Mr. Jones third, all staging creditably. With three plants the first prize-winner was Mr. Turton, gardener to J. Hargreaves, Esq. Standards were not very good, and in the various classes for these the most successful were Messrs. Favey; Bridge, gardener to T. Hall, Esq.; and Parham, gardener to H. J. Simmonds, Esq. Specimen Pompons were well and successfully shown by Mr. Favey and others.

The competition in the classes for cut blooms was very close and good, the exhibitors including several noted exhibitors, growers, as well as young growers who had already figured creditably at other shows. The best eighteen incurved varieties, distinct, were shown by Mr. W. Flight, all being remarkably fine and fresh. The back row consisted of Mrs. Shipman, Princess of Wales, Hero of Stoke Newington, Golden Empress of India, John Salter, and Empress of India; the second row, Nil Desperandum, Princess of Teck, Prince Alfred, Barbara, Mr. Brunlees, and Mr. Bunn; and the front row, Lady Slade, Eve, Lady Hardinge, Venus, Cherub, and Isabella Bott. Mr. Strong, gardener to H. Sweet, Esq., was a good second, his best blooms being of Princess Imperial (Lord Alcester) Queen of England, Empress of India, Mrs. Heale, Golden Empress of India, Cherub, Alfred Salter, and Angelina. Mr. Wills, gardener to Mrs. Pearce, Southampton, was third, among his lot being massive but not very fresh examples of Snowball, Princess Imperial, Miss Mary Morgan, Baron Beust, and John Salter. With twelve varieties Mr. Strong was easily first, his collection including remarkably fine blooms of Golden Queen of England, Golden Empress of India, Cherub, Princess of Wales, Empress Eugénie, and Mrs. Shipman. Mr. Favey was a good second, having extra fine blooms of Abbé Passaglia, Lord Wolseley, and Baron Beust.

The third prize going to Mr. Munday. The best six incurved were staged by Mr. W. Wildsmith, gardener to Viscount Eversleigh, who had grand blooms of Queen of England, Hero of Stoke Newington, Empress of India, Nil Desperandum, Golden Empress of India, and Alfred Salter. Mr. Kendall was second and Mr. Basket third. With twelve reflexed sorts Mr. Elliot, gardener to T. Hibbert, Esq., was a good first, the best represented sorts being Marquis of Lorne, Mrs. Forsyth, and White and Lilac Christine; Mr. Riddick was second and Mr. Basket third; and the prizewinners with six varieties were Messrs. Flight, Wills, and Wildsmith.

The Japanese varieties were beautifully shown, and the Judges had a great difficulty in awarding the prizes. The best twelve were shown by Mr. Flight, these consisting of Japonaise, Comte de Germiny, Mr. Barnes (Grandiflorum), Sultan, Fair Maid of Guernsey, Comtesse de Beauregard, J. Delaux, Fanny Bouchardet, Duchess of Albany, Thunberg, Album Plenum, and Baron de Prailly. Mr. Strong was second with blooms equal to the first-prize lot, these including Madame C. Andiguier, Oracle, Criterion, Sofrano, Meg Merrilees, Hiver Fleuri, and Dr. Macary. The name of third prize-winner was overlooked, and an extra prize was awarded to Mr. Munday, and two other lots fully merited this recognition. Mr. Wildsmith was first with six Japanese varieties, these consisting of very fine blooms of Soleil Levant, Comte de Germiny, Thunberg, Fair Maid of Guernsey, and Hiver Fleuri. Mr. Kendal, gardener to H. L. Holmes, Esq., was a good second, and Mr. Basket third. The class for six Anemone-flowered varieties was fairly good, Mr. Page, gardener to Mr. A. Southard, Esq., being first with Fleur de Marie, Lady Margaret, and Empress. Mr. Kendall was a good second, and Mr. House, gardener to T. O. Taylor, Esq., third. Pompons and bunches were well shown by Messrs. Ashby, Wildsmith, and Kendall, who were awarded the prizes in the order named.

A class was provided for six cut Roses, and several good lots were shown. The first prize was awarded to Mr. Flight for good fresh blooms of Catherine Mermet, Belle Lyonnaise, La France, and Madame Lambard. Mr. Tranter was second, and Mr. Wildsmith third. The prizewinners in the classes for hand bouquets were Messrs. Phippen, Wildsmith, and Kendall; and Mr. Phippen was first for both vases and baskets of mixed flowers and Chrysanthemums. Mr. Williams also successful in these classes.

The best group of miscellaneous plants was arranged by Mr. Parham, who displayed much taste in grouping such plants as Tree Ferns, Poinsettias, Cyrtipediums, Vincas, Amaryllises, Ferns, and Grasses. Mr. Phippen was a good second, and Mr. Basket third, both having very pleasing groups. Table and other plants were well shown by Messrs. Bright, Elliott, Parham Favey, and Hatch.

The display of fruit was not so extensive as might have been expected, but the quality was generally very good. Mr. Turton had the best collection of six dishes of dessert fruit, these consisting of very good Lady Downe's and Muscat of Alexandria Grapes, Medlars, King of Pippins Apple, Beurré Diel Pears, and Cob Nuts. Mr. Wells was a close second, his collection including Cooper's Black Grapes, Golden Drop Plums, and Beurré Clairgeau Pears. Mr. Ashby was a good third. Mr. Ashby was first with three bunches of Black Hamburg; and Mr. Rose, gardener to Sir R. L. Lindsay, Lockinge Park, was second. Mr. Turton was first with two bunches of Muscats, and Mr. Rose second; and with any other white variety Mr. Turton was first, having fairly good Trebbiano, Mr. W. Iggulden being second with Mrs. Pearson in good condition. Mr. Ashby was the only exhibitor of Gros Colman, and was awarded the first prize for fairly good bunches. With any other black variety Mr. Turton was first with large, well-finished, but rather loose bunches of Gros Guillaume, Mr. Iggulden being second with very good examples of Black Alicante, and Mr. Howe, gardener to Sir R. Sutton, Bart., was third with the same variety, which was also shown by several other growers. Mr. Turton was first with four dishes of dessert and two of kitchen Apples, these consisting of handsome fruits of Cox's Orange Pippin, Court Pendu Plat, Ribston Pippin, Boston Russet, Prince Albert, and Mère de Ménage; Mr. Herman was a good second. In a corresponding class for Pears Mr. Turton was again first, having fine dishes of Beurré Clairgeau, Beurré d'Aremberg, Beurré Bachelier, Catillac, and Triomphe de Jodoigne. In the fruiterers' class Mr. Chesterman was the only competitor, and received the first prize for a very good lot of fruit.

#### HUDDERSFIELD.—NOVEMBER 14TH AND 15TH.

THIS Society held their first Show in the Town Hall, Huddersfield, a spacious building, though scarcely large enough for such a show as the one under notice. Mr. John Bell, the Hon. Secretary, and the whole of the Committee should feel well repaid for their labours, as they may safely say they have had one of the finest shows of cut blooms that has been seen this season out of London, success being due in a great measure to the fact of the Show being held when the blooms were at their best. The prizes of £10, £5, and £2 for forty-eight cut blooms, twenty-four Japanese and twenty-four incurved, brought five competitors; but it soon became clear that the contest lay between two Liverpool growers—namely, Mr. A. R. Cox, gardener to W. H. Watts, Esq., Elm Hall, Wavertree, and Mr. G. Mease, gardener to W. Nichols, Esq., St. Michaels, Liverpool. Mr. Cox won by the superiority of his incurved flowers, which were perfect examples of good cultivation, being large, firm, and bright in colour. They were staged as follows:—Back row: Princess of Wales, Queen of England, Empress of India, Alfred Salter, Jeanne d'Arc, Golden Empress, Prince Alfred, Emily Dale. Second row: Prince of Wales, Lady Hardinge, Jardin des Plantes, John Salter, Refulgence, Mrs. Heale, Princess of Teck, Nil Desperandum. Front row: Eve, Pink Venus, Mrs. Dixon, Cherub, Sir Stafford Carey, White Venus, Princess Beatrice, White Beverley. Japanese—back row: Comte de Germiny, Fair Maid of Guernsey, Madame C. Andiguier, Boule d'Or, Curiosity, Madame Moulise, Oracle, Baronne de Prailly. Second row: The Sultan, Japonais, Fanny Bouchardet, Red Gauntlet, Elaine, Criterion, Triomphe de Chatelet, Peter the Great. Front row: Père Delaux, Album Plenum, Dolores, Thunberg, Triomphe du Nord, Marguerite Marrouch, Album Striatum, and Balmoreau. Mr. Mease was a very close second, his Japanese blooms being excellent. The third prize in this class went to Mr. M. Playfair, gardener to — Nichols, Esq., Spital Hall, Birkenhead, who showed good blooms. In class 2, for twelve Japanese and twelve incurved, the prizes went as in the preceding class. There were other prizes offered for blooms from local growers, and these were very creditably shown. There were some attractive groups shown,



in some cases with flowers of first-rate quality. Classes were also provided for Anemone, reflexed, and Pompon blooms, and good examples of those flowers were shown.

There were also classes provided for plants, Poinsettias, Bouvardias, dinner-table plants, Roman Hyacinths, Epiphyllums, and exotic Ferns, being remarkably good, as also were several dishes of Grapes.

#### WINCHESTER, NOVEMBER 18TH.

THE second autumn Exhibition of the Winchester Horticultural Society was held in the Guildhall of the old city on the date named, and was in every respect a wonderful advance on the display of last year. We can only refer to the Show very briefly. Chrysanthemums were in great force, groups, specimen plants, and cut blooms being fully represented, the competition being good in nearly all the classes, and in some of them extremely keen. The groups arranged for effect were the weakest part of the Show, only one arrangement (Mr. Flight's) being composed of plants really suitable for the purpose, as trained specimens cannot be agreeably disposed. The first prize, as indicated, was easily won by F. W. Flight, Esq. (Mr. Neville, gardener); second Mr. T. Wareham, gardener to Mrs. Gunner; and third Mr. G. Sergeant, gardener to F. Birch, Esq.; but most of the arrangements were lumpy and overcrowded. The specimen plants were much better—indeed, they constituted a really grand display. For six plants Mr. Joy, nurseryman, Shirley, was first; Mr. Wills, gardener to Mrs. Pearce, Southampton, second; and Mr. Prouting, gardener to Miss Butler, Winchester, third. Mr. Wills's plants were the largest and very vigorous, but had lost their freshness; they had, in fact, had their day, and won their honours previously. Mr. Joy's plants were very fine, and at the same time fresh and bright, and Mr. Prouting's neat and good. Messrs. Joy and Wills had the same relative positions with Japanese plants, which were large, well-trained, and well-flowered—4 to 5 feet wide and 2 to 3 feet high. Mr. Dove, Shirley, was third. In the single specimen classes, both of incurved and Japanese, Mr. Wills was the premier exhibitor. There was no class for Pompons.

Of cut blooms there was an excellent display. Mr. Molyneux completed his season of exhibiting quite as well as could be expected, as will be seen by the return. His record altogether is seventeen first prizes out of a possible nineteen, and two seconds. In the class of twenty-four cut blooms, distinct, sixteen incurved and eight Japanese, Mr. Molyneux was distinctly ahead of all others, his blooms being good in size and substance, splendidly finished, but not quite so bright as earlier in the season. Mr. Flight was an excellent second, and Mr. Wills third. Mr. Molyneux was again first with blooms, not less than eighteen varieties, with heavy stands, followed by Mr. Drover of Fareham, and Mr. Flight. The same exhibitors occupied the same relative positions with stands of twelve incurved blooms, all staging well, and also in the class of twelve Japanese, which were very fine and close in point of merit; while in the reflexed class the prizes fell respectively to Messrs. Molyneux, Drover, and Wills, the competition being exceedingly keen. In the class of twelve cut blooms in not less than eight varieties (exhibitors in the preceding classes excluded) the prizes fell to Mr. Bridger, gardener to Col. Martin, Southsea, and Mr. H. Munday, both staging creditably; and in the maiden class of twelve blooms (open to persons who had not previously won a prize) Mr. J. Dauncey, gardener to J. Bramston-Stane, Esq., Basingstoke, secured the premier position with a capital stand. The chief prize for amateurs was well won by J. B. Colson, Esq.

Fruit was not extensively shown. Mr. Budd, gardener to J. Dalgetty, Esq., Romsey, was the only exhibitor of eight dishes, and was worthily awarded the first prize. For three varieties of Grapes Mr. Molyneux was first with fine well-finished produce; Mr. E. Hillier, Winchester, second. For two bunches of black and two of white Grapes Mr. Gandy, gardener to the Earl of Northbrook, Stratton Park, was first in each case, Mr. Molyneux being first in the heaviest bunch class with Gros Guillaume in fine condition weighing 5 lbs. He was first also for table plants. Of dessert Apples there was a great display, Mr. Flight securing the highest position; Mr. Fiford having the corresponding place with culinary varieties. Vegetables were very good, Mr. Dauncey being the leading prizetaker.

Among the miscellaneous exhibits a remarkably fine stand of Tea Roses commanded attention, and merited the certificate of excellence. Mr. Hillier arranged a fine group of plants, and was awarded a certificate for his double Primula Annie Hillier, blush, which is undoubtedly one of the best varieties in cultivation; and Messrs. Jeffrey & Jones had a similar award for excellent and well-grown varieties of Primulas. Other things in the Show merit notice, but all we can do now is to congratulate the exhibitors and directors of the Show on the great success of the Exhibition.

#### LINCOLN.—NOVEMBER 18TH AND 19TH.

THE second Exhibition of this young but energetic Society was held in the New Corn Exchange on Tuesday and Wednesday last, proving in all respects most satisfactory. The hall is a spacious and handsome one, and is admirably adapted for an exhibition of this kind, plenty of space being at command to admit arranging the contributions effectively. This was very tastefully accomplished, and owing to the number of groups entered the general appearance of the Show was all that could be desired. The groups of Chrysanthemums in competition, together with several shown by local nurserymen, were placed near the wall on one side of the hall, the specimen plants and groups of miscellaneous plants occupying the opposite side, while upon a broad table, extending the whole length of the building in the centre, the cut flowers, fruit, and stands of flowers were arranged, a few plants in competition for the special prizes being assigned a position in the gallery.

The quality of the blooms in all the leading classes was very good, two or three growers contesting very keenly for the chief prizes. This was especially noticeable in the open class for forty-eight blooms, twenty-four incurved and twenty-four Japanese, in which two prizes were offered—one £5 and the other £3. This, however, only brought three competitors, whose blooms were even, and in two cases of fine substance, though after a careful comparison those from Mr. A. Wipf, gardener to N. Clayton, Esq., East Cliff House, Lincoln, were adjudged premier honours, being several points ahead of the blooms shown by Mr. Coulling, gardener to J. Rushton, Esq., M.P., although these were very creditable productions. In Mr. Wipf's stand the following varieties were represented:—Incurved: Princess Imperial (Lord Alcester), a magnificent bloom of great depth, fine substance,

and very fresh, which was also awarded the prize for the best incurved bloom in the whole Exhibition; Alfred Salter, Golden Empress, John Salter, Golden Queen of England, Princess Teck, Prince of Wales, Empress of India, Prince Alfred, Queen of England, Nil Desperandum, Mr. Bunn, Cherub, Pink Venus, Mrs. Heale, Duchess of Manchester, Isabella Bott, Golden John Salter, Lady Slade, Barbara, Mad. Madeleine Tezier, Princess of Wales, Angelina, and White Beverley. Japanese, Mad. C. Audiguier, Boule d'Or, Fair Maid of Guernsey, Simon Delaux, Cry Kang, Triomphe de la Rue des Châtelets, Meg Merrilees, M. Ardène, Japonais, Erectum superbum, Grandiflorum, Etoile Toulousaine, Comte de Germiny, Peter the Great, M. Delaux, M. Astorg, Japon Fleuri, Golden Dragon, M. Ardène, very fine, a grand bloom; Thunberg, Album plenum, Dr. Macary, and Mad. Berthie Rendatler. Mr. Coulling's bloom were slightly smaller, but very fresh and even; while his bloom of Japonais was awarded the prize as the best Japanese in the Exhibition, though the example of M. Ardène, mentioned in Mr. Wipf's stand, ran it very close for that honour. In other cut bloom classes Mr. Wipf, Mr. Bugg (gardener to W. Ashley, Esq.), Mr. Coulling, and Mr. Mitchell (gardener to W. J. Warren, Esq.) secured the chief prizes with commendable blooms, though in the smaller classes there was a want of substance in the majority of the blooms. Mr. Mitchell had the best stand of twelve Pompons, extremely fine blooms of Golden Madlle. Marthe, Crimson Perfection, Madlle. Marthe, Mr. Astic, Mad. Sentir, Defiance, Antonius, La Parnasse, Calliope, Grace Darling, St. Thais, and Marabout.

There were eight competitors in the class for a group of Chrysanthemums arranged for effect in a semicircle 12 feet by 6 feet, several very pretty and tasteful combinations of well-grown plants being entered. Mr. Wipf was the most successful, winning the chief place with a bright and effective group, several standards being suitably introduced to break the uniformity and formality too often prevailing in such groups. It was also well finished in the front, an important matter which is not always fully recognised by exhibitors. Mr. Mitchell was second with a good even group less diversified than the first. Mr. J. C. Bowne was third, the front row plants being much too tall, and Mr. Ridsdale took the fourth place, some of his marginal plants being laid down to give a finish to the edge, but that is a practice that cannot be commended. Mr. Wipf had the best large-flowered, Pompons, and Japanese, all very even, and the last-named were beautifully flowered, while the principal remaining prizes were secured by Messrs. Coulling and Ridsdale, both showing well.

The class for a group of miscellaneous plants arranged for effect was very interesting, and the three competitors deserve much praise for the skill displayed. Mr. Mitchell was, however, well ahead, and was awarded chief honours for one of the most tasteful groups we have seen this season. The plants employed were comparatively few, and individually less handsome than many in the other two groups, but they were arranged in the most effective and informal manner possible. The bulk of the group was composed of Crotons, Palms, Dracenas, and Chrysanthemums, the latter being freely grown and profusely flowered plants, such as are well suited for arranging with other plants. The margin, which sloped gently from the centre, consisted of brightly coloured Coleuses, Pelargoniums, Adiantums, and Asparagus plumosus, while from the centre of the group at intervals rose several fine pure white spathes of Richardia. Mr. Coulling was second with some well-grown plants, the Crotons being especially richly coloured, but the general effect was too heavy; less material might have been employed with far greater advantage. Mr. Wipf was third, also with fine healthy plants, but too crowded, two Palms being quite crushed in the centre. In several other plant classes Messrs. Coulling and Wipf were the prizetakers. Messrs. Picker and Foster had the leading collections of Apples and Pears. Vegetables were admirably represented, and some extremely tasteful arrangements of flowers for the table were contributed.

Amongst the non-competing exhibits the groups of Chrysanthemums formed the chief feature, the two corner groups from Messrs. Pennell & Sons, Lincoln, being particularly notable for the quality of the blooms and the taste shown in their arrangement. Taking the Exhibition generally it was a decided success, and the courteous Secretary, Dr. G. M. Lowe, together with the energetic Committee, of whom Mr. R. J. Ward and Mr. Pennell, jun., are prominent members, must have felt well satisfied with the result of their labour.

#### LINDFIELD.—NOVEMBER 14TH AND 15TH.

THE second annual Chrysanthemum Show was held on the dates named, the exhibits being displayed in the Mission and Assembly Rooms. The principal exhibitors were Mr. Hodges, gardener to S. C. Gibbons, Esq. (whose exhibits were good throughout); Mr. Venn, gardener to W. Sturdy, Esq.; Mr. Russell, gardener to Dr. Lewis; Mr. Braysher, gardener to Mr. G. Catt; Mr. Kemp, gardener to Colonel Sampson. The first prize for a group was won by Mr. Hodges with a plant containing some good blooms, but the arrangement was a little flat; second prize, Mr. Venn; third, Mr. Horscroft; highly commended, Mr. Kemp. Best specimen plant—First prize, Mr. Durrant; second, Mr. Plumer, gardener to Mr. Warre. Two best Pompons—Mr. Brooks, gardener to —Deacon, Esq. The two best plants, Anemones, and two best Japanese were staged by Mr. Horscroft.

The prizes for cut blooms, which were exceptionally fine, were taken by Mr. Hodges, Mr. Venn, Mr. Russell, and Mr. Horscroft. For Grapes the prizes were awarded to Mr. Hodges, Mr. Venn, Mr. Dowden, gardener to Marchioness of Downshire. There was keen competition for Apples and Pears. The prizes for vegetables were won by Mr. Braysher, Mr. Gibbons, and Mr. Plumer. Very creditable table plants, basket of flowers, &c., were exhibited prominent amongst them being a table elegantly decorated with dried seaweeds, corals, &c., exhibited by Mr. Smout of Hastings, one of the great attractions of the Show which was well attended throughout.—A. J. B.

#### PEGGING DOWN VINES.

I HAVE heard of a plan by which the cane of a young Vine may bear a few bunches, and at the same time produce a good growth by a system of pegging down, and shall be glad of any particulars on the subject.—W. J. P.

[The plan referred to is perhaps the following, which was thus de-



scribed by Mr. Inglis a few years ago:—"Bend the rods down and peg them into the soil as shown in the accompanying figure. Rub off all the buds below *b*, except at *a*. Prune the cane back to the very best eyes, if they are half way up the rafters so much the better. Restrict the growth of the side shoots above *b*, so that the prominent canes coming from *a* may have plenty of room. Leave two or three bunches on the supernumerary cane, allowing it to extend to the top of the house, and in the third and fourth years take the main part of the crop off this cane, when it may be cut out altogether. By this plan you can get a better permanent cane, and I think this is best done by only allowing it to extend up the rafters 6 or 8 feet the first year, encouraging a good lateral growth at the base. Restrict it in a similar manner the second and third years, leaving but a limited number of bunches on it till the other rod is cut out, when it will generally be found to be in a good position as a permanent Vine. By pegging the cane into the soil it soon becomes rooted and in a measure self-supporting, and so there is less risk of the Vine being exhausted by

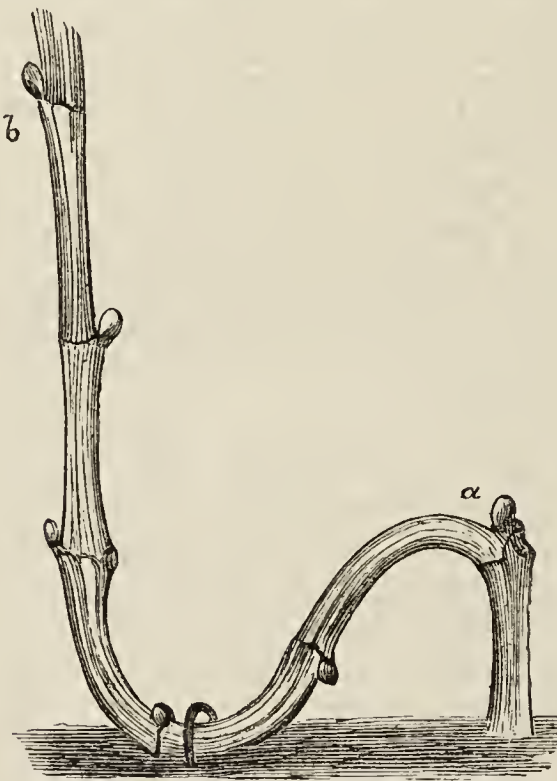


Fig. 78.

bearing fruit the first and second years. It will be understood that all shoots must be kept pinched close on the temporary cane as the other advances up the roof."]



#### KITCHEN GARDEN.

**Sowing Peas.**—In very cold localities and bleak gardens we would not recommend Peas to be sown in autumn, but where gardens are situated in mild and sheltered positions the practice is well worth trying. By sowing now, if the winter prove at all favourable, the plants will certainly fruit some weeks before any which can be had from seed sown in the open air in spring. It is the hope of accomplishing this which always induces us to sow now. Some winters we have lost our plants; in others they succeed wonderfully well, coming up strongly, remaining fresh and sturdy for a time, and then growing freely. Sutton's Ringleader and William I. are good hardy sorts we always sow in autumn. An open sunny position, where they will not be drawn up at one time and blown about at another, is the best for them. Where the soil is already rich do not apply manure, but open the drills about 3 inches deep. Sow moderately thick, place a little sand over the seed, and then fill in with the surrounding soil. Above all sprinkle a layer of fine ashes, and let the plants find their way through these. In poor soil dig in a quantity of manure where the rows are to be, then open drills and sow as above. A dry day and dry soil are great advantages to begin with, and where these cannot be secured it will be better to defer sowing until spring.

**Earthing up Turnips.**—Very few cultivators have sufficient storage room to clear their kitchen gardens of all roots before frost comes, but useful protection may often be afforded without sheds. Turnips of the Chirk Castle type are not easily injured by the weather, but white and red ones are often tender, and will become pulpy after a severe frost. To

avoid this, the earth on each side of the roots should be drawn up and well over them, leaving the rows with much the same appearance as Potatoes have when "earthed." After this 10° or more of frost will make no injurious impression on the roots.

**French Beans.**—Keep those in bloom and fruit in a temperature of 65° or 70° with rather a dry atmosphere. Gather the pods before they become slightly old, and water only when required with weak liquid manure. Now it is difficult to induce Beans to grow freely now, and unless where the appliances are specially good we should not advise to be sowing seed until towards the end of December.

**Late Tomatoes.**—Where the plants are growing in pots or beds and the leaves and fruits are quite green, keep up the heat to 60° at least, water sparingly, and do not allow the foliage to become crowded. Blooms are slow in opening just now, and young fruits do not form freely, but those swelling should have the best of attention.

**Mustard and Cress.**—We have not said anything about these lately, as they are so easily produced in the summer that anybody may have them in quantity. From November until April we grow all our Mustard and Cress in shallow cutting boxes. They are 1 yard in length, 1 foot in width, and 4 inches deep. Light sandy soil is put in to the depth of 2 inches, the seed is sown rather thickly and mixed, and it soon germinates and grows fast in any kind of forcing pit. One box lasts us a week, and by sowing weekly a constant supply is maintained. Where good salads are valued, Mustard and Cress cannot be dispensed with.

**Chicory.**—This is a capital accompaniment to the above. Where Lettuce and Endive are scarce it is invaluable. The roots should be lifted, potted closely in 10-inch pots, and then plunged in a hotbed. The top must be kept in the dark, as this causes the growths to blanch and become doubly valuable. We have just put our first batch into a corner in a dark shed, and more will follow as this is used. It takes a fortnight or three weeks to grow and blanch. The green tops are cut off before potting, and those for salad are all new and tender.

**Ropeing Onions.**—On wet days, when outside work is brought to a standstill, the Onions may be looked over, and if time will allow the best of them may be made into "ropes." Every old garden labourer knows how to do this, and many take considerable pride in doing them up neatly. We do not think Onions keep better in ropes than lying loose, and only sound medium-sized bulbs should be tied on.

**Layering Broccoli.**—This is sometimes termed "heeling over," and is a practice of some value in localities where the winters are generally severe. When the plants are turned on their sides they are not so liable to be injured as when standing straight up, and now is the time to lay them down. We do not spend much time in doing this, as we do not take a trench out along the side of each row, as is sometimes done, but we simply take a good spadeful of soil from behind each plant, press the plant and root gently over, and throw the spadeful on the upper side of it. All are made to face the north, and the rows look as straight and well after heeling as they did before.

**Rhubarb, Seakale, and Asparagus.**—Batches of these should be put in to force for Christmas. The two former will grow freely in a dark place where the bottom heat is about 75° and the top heat 10° less. The Rhubarb is taken up and planted in a hotbed of leaves, and the Seakale is potted in batches and plunged near it. The Asparagus is planted in the light and in temperatures as near as possible to those named.

**Mint and Tarragon.**—Many cooks value those in a green state in winter, and it is no difficult matter to supply them, as both force freely in any ordinary Cucumber pit. The best way is to lift and pot the roots, and then plunge them in heat near the glass.

**Celery.**—It may be necessary on the approach of frosty weather to protect the earliest and most tender Celery, and this may be done by putting a bulky band of fern or straw around each plant just above the soil, but until frost comes this or any other protection would do more harm than good.

**Seed Potatoes.**—Early varieties are sprouting, and it is much too early to keep them on. The better way is to turn them all over, and in doing so rub all the most forward of the growths off, then spread the tubers out as thinly as possible, and keep them cool and well aired. When other work is at a standstill manure-carting and wheeling may be carried on and push forward winter work so long as the weather is open and suitable.

#### FRUIT FORCING.

**Cherry House.**—The trees will now be leafless and should be pruned, which, if care and attention were given to stopping in the shoots during the summer, will simply consist in shortening back to within an inch or so of the base all those shoots which were made during the growing period—terminal shoots and others which are wanted to fill vacant spaces and replace defective branches alone excepted. There last should be laid in, so far as practicable, in their entirety. This done the house should be thoroughly cleansed in order to extirpate obnoxious insects, the whole of the painted surfaces being washed with soap and water and the walls lime-washed. If necessary the woodwork should be painted. The trees, too, must be dressed. The best mode of cleaning is to wash with a solution of softsoap and water, 8 ozs. to a gallon, and in the case of scale applied rather forcibly with a hard brush, but care must be taken not to dislocate the buds, and afterwards dress with an insecticide. After these matters are disposed of and the trees secured to the trellis let all the surface soil 1 or 2 inches deep be removed and its place occupied with good turfy loam of a calcareous nature, or if deficient in that material add a sixth of old mortar rubbish, and then give a mulching 2 or 3 inches thick of well-rotted manure. If the borders are at all dry give a good watering after surface dressing with the compost, and before putting on the mulching, then all will be ready for starting when the proper time arrives. Plants



are best kept from the house, as when introduced they are often the means of re-establishing a stock of those pests which have just been exterminated. Ventilate the house freely until it is closed for forcing.

**VINES.—Early House.**—When the buds in the earliest forced house commence swelling the young rods should be examined, and if terminals show signs of taking the lead bend them down to a horizontal position, and syringe the dormant parts three or four times a day until they begin to move. If fermenting materials have been placed in the house turn it over at intervals, and add fresh sweetened material from the reserve ground to prevent the heat from declining below 75°. Admit a little air daily, increasing the temperature to 70° or even 75° from sun heat, and let the night temperature range from 55° to 60° for the present. When all the buds show signs of breaking remove the fern or litter from outside borders and cover up with dry warm leaves to a depth of 18 inches, making them very firm, and place old lights or shutters over all, with a sharp pitch to the front for throwing off rain and snow.

**Early Pot Vines.**—Disbud so soon as the most promising breaks warrant its being done, and increase the temperature by day to 70° or 75° when the weather is fine, but do not allow it to exceed 60° at night when mild, and 5° lower in severe weather. If fermenting materials are used keep them turned over frequently and added to as they subside, but not increasing the heat to more than 70° or 75° about the pots. Water will be needed, but it ought not to be given until the soil becomes rather dry, then give a thorough supply, and maintain a good moisture in the house by syringing the Vines and other available surfaces two or three times a day according to the weather.

**Succession Houses.**—The Vines should be pruned as they become cleared of fruit and the foliage is all down. The houses should then be thoroughly cleansed and the rods dressed, in doing which only remove the loose bark, and wash with soap and water before dressing with an insecticide. The loose surface soil should be removed, and if the borders are dry they should have a good watering, especially those that are intended for starting by the new year, repeating as necessary to bring into a thoroughly moist condition, and replace the soil removed with good loam, to which has been added some crushed bones and charred refuse. Keep the house cool and dry, so as to induce complete rest until the time arrives for starting the Vines. Select well-ripened prunings from the midseason Vines for making future stock, either as grafts or plants from eyes, and lay them in in a sheltered position in the open air.

**Late Autumn Vineries.**—Where these are required for plants through the winter the bunches remaining may be cut and taken to the Grape-room, which should previously have been thoroughly cleansed, and the heat put on and ventilated so as to draw out the damp and sweeten the atmosphere, as cleanliness is quite as important as in the houses where the Grapes are grown. The bottles should be filled with water and a piece of charcoal placed in each a few days before they are wanted, as fire heat to expel damp after the Grapes are introduced and an excess of dry heat is unfavourable to long keeping as an excess of moisture. The Vines being free from foliage, each fruit-bearing shoot should be cut to the usual bud, all beyond the bunch being left intact to prevent loss of moisture from the berries when the atmosphere is unusually dry. The temperature of the Grape-room should be kept steady at 45° to 50°, fire heat only being used to expel damp or prevent the temperature falling below 45°. When the Grapes are cut the Vines may be pruned, or if the foliage is not all down it may be deferred, but the roots should have attention, as indicated above; but it is well not to use the house for plants if it can be helped, as a complete rest is quite as essential to a satisfactory crop of Grapes as careful and good management during the growing season, and this they have not without the atmosphere be kept dry by free ventilation and an empty house.

#### PLANT HOUSES.

**French and Fancy Pelargoniums.**—The plants intended for early flowering in spring will now be dwarf, bushy, compact specimens, well established in 5 and 6-inch pots if previous directions have been attended to. These should now occupy a position as close to the glass as possible, a good shelf being a capital place for them if a small house cannot be devoted to them. To do these plants justice during the winter they must have a light position in some structure where the night temperature will not fall below 45°. This temperature should be maintained as long as possible without the aid of fire heat, which for the present need only be applied on fine days for the purpose of expelling damp. No attempt must be made to push the plants into active growth, or the foliage and shoots will be drawn soft and weakly. They should be kept slowly growing, and if air is freely admitted on all favourable occasions the little growth that will be made in spite of the absence of sunshine will be strong and sturdy. Water must be applied with great care; no more should be given than is sufficient to retain moisture in the soil to keep the roots in good condition. If these plants are wet at their roots the foliage will soon become spotted and disfigured. Later plants, or old plants that were cut back and are in a more backward condition of growth than the batch of young plants alluded to, may be wintered in a little lower temperature, providing the atmosphere can be kept moderately dry by the admission of air and a little heat occasionally to expel damp. The object to be attained is not exciting them into growth, but preserving them through the winter in as good condition as they are at the present time. If any shoots are taking the lead of others they may be pinched to balance the growth of the plants. The early batch should not need pinching, but be allowed to extend until they come into flower. If cut-back plants have not been potted since they were shaken out, and repotted when they had well started into growth, they should now be left until the turn of the year, for the least mismanagement in applying

water to the plants would perhaps end in their ruin. Those well trained in watering plants, and know how and when to apply it, may with safety pot their plants even at this stage of the year. Every precaution must be taken to keep these plants free from aphides by fumigating the house with tobacco directly they appear.

**Calceolarias.**—These should be kept in cold frames as long as possible, for in such a position they will do very much better than in the drier atmosphere of a house. When, however, they have to be removed to some structure to be safe from frost, avoid placing them upon shelves, for they are too dry for these moisture-loving plants. They should have every ray of light possible, and be stood upon ashes, gravel, or some other moisture-bolding material where a good circulation of air can be admitted daily when the weather is favourable. The earliest plants may be transferred into the pots in which they are intended to flower in if they have fairly well filled the pots they are now in with roots. In the cultivation of these plants it is a great mistake to allow them to become cramped at their roots before they are placed into the pots they are to flower in, for seldom do plants do well after they have become checked by insufficient root room. After potting water carefully until the roots are working freely in the new soil, but on no account allow them to suffer by keeping them too dry at their roots, for if they become checked from this cause they soon become a prey to aphides. Avoid as much as possible the use of fire heat, and if frost is first excluded it will be ample for the well-being of the plants. A suitable compost is good loam, leaf mould one-third, and one-seventh of cow manure passed through a fine sieve, and a liberal dash of coarse sand. A 6-inch potful of soot to each barrowful of soil may with advantage be added.

**Cinerarias.**—In some localities where the atmosphere is moderately dry these plants can be kept in good condition through the winter in cold frames by such protection as mats and dry straw will afford them. In other localities this is impossible, for with the utmost care the foliage is covered with moisture day after day, and in the end damps off in spite of every effort to prevent this, and thus seriously injures the decorative value of the plants. Under such conditions the plants should be removed from cold frames without delay to some position where the foliage can be dried, say, once during every twenty-four hours. They can be housed safely in a vinery where the ventilators stand open day and night during favourable weather. They can also be kept in good condition in any house or pit in which heat can be turned on to expel the moisture that settles upon the foliage occasionally. Fire heat for this purpose should only be used when absolutely necessary, for a dry warm atmosphere is as detrimental to these plants as a too damp one. Plants that are throwing up their flower stems should be supplied with weak liquid manure every time they need water. Watch for aphides, for they make their appearance and very quickly destroy the plants where growth is slow, if not at once exterminated by frequent fumigations with tobacco smoke.

**Roses.**—Where it is necessary to increase the stock of Hybrid Perpetuals in pots the plants should be lifted and potted without delay while they possess abundance of fresh green foliage. The size of pots to be used entirely depends upon the size of the plants, those 7 to 9 inches in diameter are large enough for good-sized plants. The former will accommodate the ordinary size plants sold by the trade. The pots employed should be well and liberally drained, and the soil pressed firmly into them. If the plants are worked bury the union of the stock and Rose beneath the soil to give them a chance of forming roots and becoming independent of the stock in time. Remove the ends of long straggling shoots, and plunge the pots outside after potting amongst coal ashes, entirely covering the rim of the pots and surface of the soil. In this position they can remain until the approach of very severe weather, when they should have the protection of a cold frame. Use for a compost good fibry loam, one-seventh of decayed manure, and a liberal dash of coarse sand—this entirely depends upon the condition of the loam whether light or heavy. If very light add in preference to sand a little clay that has been reduced to powder by drying and crushing. One 6-inch potful of bone meal to each barrowful of soil is also very suitable for Roses in pots.

## THE BEE-KEEPER.

### PREPARING APPLIANCES FOR NEXT SUMMER.

WHATEVER contrivances we employ in improvement Nature can never be inverted, and the bee is no exception to this rule. Its natural habits and instinct are the same to-day as they were at its creation. If these things are studied and thoroughly understood by the beginner it will enable him to surmount difficulties and to manage profitably his own or employer's bees. I have been prompted to mention employer from having before me a letter from a lady, the wife of one of our wealthiest merchants, asking me if I could help her to procure a good gardener, and one who understood bees. This is but one of many similar instances, and is evidence that the love of bees is increasing amongst the wealthier class, who are beginning to find that honey is as serviceable for the table and is more cheaply produced than many things, consequently I would advise all gardeners to include apiculture in their other studies.



The present is a fitting time for studying apiculture, and is also most suitable for having appliances prepared for next summer. Bee-keepers should study to bring their apiary to a regular system, by which only they can know accurately what will be the requirements for another season. Bee-keeping has its limits, and bee-keepers cannot go on continually from one year to another increasing their stocks by saving condemned bees, by swarming, or division; besides, it is neither commendable nor profitable to be in possession of more hives and their appliances one year than is likely to be required in another. Neither is it necessary to have all hives alike complete and expensive; winter hives alone should be so. Those for summer use, especially where they are required to be moved about, should be light and of little compass, with ample means for ventilation, and have light yet effectual non-conductors of heat and rain for outside coverings, surmounted with a good top covering which admits a current of air between it and loose covering. The stand should be very low, and in every case there should be a slanting board reaching from the ground and attached to the alighting board.

My own position at present and what I have prepared may furnish some information. Circumstances have so placed me that the whole of my hives are occupied with bees, a number I do not care about increasing, and to simply decrease without making a total clear out will not obviate the necessity of making new hives. My occupied hives consist of frame and Stewarton, the latter with outside cases, and the former all double-cased with zinc-covered roofs and well ventilated. The hives wanted for next season will be of but two sorts—viz., Stewarton (the original type) and square Stewarton, which bars will be fitted with ends for ease of manipulation. The upper box will have on the front and back top edge a piece of angled tin, underneath which will be the lateral slide that can be easily regulated to any width. The stand will be simply four posts not exceeding 8 inches high, lined fully half way down, and on which will rest the floor, 2 inches deep, one side covered with perforated zinc, the other with three-eighths wood let into a groove, which slides out and in at pleasure, or if desired may be uppermost. On this is a hinged alighting board. Such hives are not only very cheap, but are very useful in apiculture, and give to the bee-keeper great control over the hive, whether honey be plentiful or not, as the whole of the full honeycomb can be removed without the destruction of any empty ones, and hives can be built up from them for stocks either with or without bees.

After the hives the supers require consideration, and of these I will make no alteration from what I have long used and found to be the most useful. Sections of the American type, unless under protest, I will neither make nor use, because this season finds me with every super used up, while the sections lie unfilled though offered to the bees in proportion to the supers. This is enough. In our changeable climate we cannot afford to lose time waiting for the bees to enter sections when they take readily to supers. Our full-sized supers I shall make as usual, having every bar divisible, and the small supers from 6 inches up to 9 inches square by 4 inches deep. These find a market readily, and are cheaply and easily packed for it, and with far less risk of damage in transit than sections, and are besides more easily protected from dust than sections.

Another sort of section and super combined which I have found serviceable, and is in great repute both amongst bee-keepers and honey merchants, is composed of three parts only, being minus the under bar. These sections may be of any size, according to the wish of the bee-keeper, and may be of any number, and used on the hive either laterally or by tiering. The top bar is nailed to the ends, which are ragged and slotted so as to receive a piece of hoop iron, which holds and lifts altogether as if it were one super. These are simple, cheap, and easily made, and possess all the properties of the common sections, with many other advantages.—LANARKSHIRE BEE-KEEPER.

#### BEE-KEEPING IN QUEENSLAND.

THE following are some extracts from a very interesting letter from Mr. John Wilkie, Gourrock, who, with his wife and family, sailed for Queensland on the 15th March of the present year. Mr. Wilkie is well known as an enthusiastic and clever bee-master, and he was one of the principals in the starting of the Caledonian Apiarian Society. Before leaving this country Mr. Wilkie had almost determined his mind to start bee-farming, and he thus relates:—"Visit to Queensland bee-keepers. On the 21st July, accompanied by Captain H., I paid a visit to Mr. Carrol, Sweet Home Bee Farm, Miltown, Brisbane, which is, though only half an hour's drive from town, beautifully situated in the bush and surrounded on all sides by seven or eight varieties of Gum Trees, Peach, Orange, and Lemon trees, Vines, &c., all of which are honey-yielding. A Tea tree (not that used for domestic purposes) blooms thrice a year, yielding honey so plentifully that great quantities can be shaken from the flowers into the hand. We introduced ourselves to Mr. Carrol, who we learned hailed from merry England some fifteen years ago. Having kept bees at home, he saw there was a field for them in the land of his adoption. He

started, and assisted others to bee-keeping, who with himself found that bees and bees alone kept the mill going when all else failed. In other words, the bees pulled some of his friends through their difficulties, and he knows they will keep him right now. Being shown into his extracting room, he instructed us how to use the extractor. There were casks and jars of extracted honey ready to be despatched. There also is one of Root's 10-inch foundation machines, which produces beautiful foundation, but much thicker than that used at home, necessary to withstand the heat; although he had many hundredweights of foundation in stock it will be all required for his own use. In his workshop he has an ingenious foot-power sawbench, with which he prepares timber for his hives.

"The apiary contains seventy stocks, composed of Ligurians, crosses, and blacks, all in ten-frame wooden hives. The frames, measuring 17½ inches by 8½ inches by seven-eighths of an inch inside measure, during the summer months are wrought on the Stewarton principle, sometimes to the number of five. From one such hive at one extracting he has taken 350 lbs. honey. His usual number in tiers are three, and every ten days are subjected to the extractor. The demand being almost exclusively for extracted honey until lately, sections are beginning to be sought for. American honey has been largely imported, but discovered, as it was at home, to be little else than glucose, and with the result that people will not purchase it at any price, while the Government has placed a prohibitory duty of 7d. per lb. on it. Notwithstanding his immense productions the demand is far in excess of his supply, his orders being for tons and not for lbs. as at home.

"Mr. Carrol also imports Cyprian, Syrian, Carniolan, and Ligurian queens, which he despatches to all parts of Australia and New Zealand. During the last fourteen years he has sent out no less than 2000 stocks, exclusive of queens, which he makes a speciality, and at present is fostering his best stocks preparatory to queen-rearing. In addition to his own he has large consignments of the different races on the way. Mr. Carrol is recognised as the principal bee-master not only in Queensland, but in the adjoining colonies, and is correspondent to most of the colonial papers on bee matters. The farmyard is so replete and astonishing that it must necessarily form the subject for another letter, as well as what I saw at Messrs. Spry's Apiary, Flower Dale. In conclusion I may say, if we have not arrived at the promised land, we had certainly arrived at the land flowing with milk and honey."

While wishing Mr. Wilkie good speed I hope that he will contribute to his favourite Journal his experiences of flowers and bees in the southern land.—A LANARKSHIRE BEE-KEEPER.



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Large Chrysanthemums (E. B.).**—The individual you mention as "preaching that such a large bloom was never grown as the Jeanne d'Arc figured last week" is rather famed for his hypercritical loquacity. Had he measured the blooms in the stands of Mr. Herrin and Mr. Gibson at the Westminster Aquarium he would have found several quite as large, and some larger. A flower of the same variety was in the back row of Mr. Herrin's stand, and it would not have been there unless it was of portly dimensions. It was almost as large as Mr. Molyneux's bloom, but slightly different in shape.

**Picea Pinsapo Stem Bleeding (Cranfordian).**—Without an examination it is impossible to determine the cause of the stem bleeding of your Picea Pinsapo. The bark has probably sustained some injury, and bleeding invariably follows, but it is only serious when proceeding from some obstruction. Several cases have come under our notice in which wire stays used to support the tree when first planted have been left on so long that the bark has swollen over and quite covered the parts around the stem. Sometimes the wire is broken off and part of it left buried in the stem, proving so serious a check to the flow of sap that much bleeding follows, and the growth above the buried wire is stunted and sickly. If the mischief in your case proceeds from such a cause the wire must be extracted by carefully cutting away enough bark on one side only of the stem to enable you to lay hold of the wire with strong pliers, and so pull it out.

**Exhibiting (G. E.).**—It is the usual practice at Chrysanthemum and



other shows to award such prizes as the exhibits merit when there is only one exhibit in each class, or, in other words, no competition. We have many times seen first, second, or third prizes awarded under such circumstances, and this appears to us to be no more than what is fair to the exhibitor, as it was not his fault if no one entered against him; but we do not consider it would be right to give a first prize to each exhibit in an uncontested class if it were not of striking excellence.

**Insects Infesting Carnations** (*M. A. Bradstock*).—Your plants are attacked by the larva or maggot of a small two-winged fly of the genus *Chlorops*. The species nearly resemble each other, so that the exact one can only be determined by the appearance of the fly. It is an insect nearly related to the ribbon-fronted Corn-fly, which damages our cereals during some seasons. Others of the tribe occur frequently among Cruciferous plants. In all probability the pupa or chrysalis state is passed in the earth. This would point to one mode of reducing the numbers of the pest. The flies deposit their eggs in or about September to produce the brood of maggots referred to; but it is doubtful whether any precautions could be taken against them, as they, on the wing, look so similar to various small flies. The removal and burning of any infected plants is an important particular to attend to.

**Walnuts** (*J. H.*).—The varieties about which you inquire are simply known as the "Large Fruited" in this country, and the "Thin Shelled." The former is referred to as follows in the "Fruit Manual":—"Large Fruited (*à Bijoux*; *Double*; *French*; *De Jauge*; *à Très Gros Fruit*).—Nuts very large, two or three times larger than the common Walnut, and somewhat square or oblong in shape. The kernel is small for the size of the nut, and does not nearly fill the shell. It requires to be eaten when fresh, as it very soon becomes rancid. The shell of this variety is used by the jewellers for jewel-cases, and is frequently fitted up with ladies' embroidery instruments." And the latter "Thin Shelled (*à Couque Tendre*; *à Mésange*).—Nuts oblong, with a tender shell, and well filled. This is the best of all the varieties."

**Culture of Anemones in Pots** (*E. S.*).—The roots should be potted without delay, placing them about 1 inch deep in good loamy soil, with a fifth of well-decayed manure intermixed with a sixth of sand. They may be placed about 1 inch from the sides of the pot, and 2 inches apart around and inwards. The soil should be moist, and a good watering given after potting, standing the pots on and plunging in ashes in a cold frame. There they may remain with air on all favourable occasions, and protection from frost and during severe weather until they are well rooted and have made a little top growth, when they may be placed on shelves close to the light so as to prevent their drawing, and where they will have a free circulation of air, keeping the plants duly supplied with water, and affording weak liquid manure occasionally. Anemones do not stand much forcing, but the flowering may be accelerated by placing, after they are somewhat advanced in growth, in a house in a light airy position with a temperature of 45° to 50°.

**Wintering Gloxinias, Achimenes, and Begonias** (*L. W. S.*).—It is best to winter the bulbs in the pots, stood on a damp bottom so that they will receive some moisture and prevent the soil in them becoming dust dry, otherwise the bulbs are liable to become farinaceous, and rot as soon as potted. All that is wanted is to keep the soil a little moist so as to keep the bulbs or corms plump. We, however, for convenience turn the plants out of the pots so soon as they have ripened off, and, removing the loose soil, pack them in sand in boxes as close as they can be crammed in single layers. They only want to be kept cool and not parchingly dry, or the bulbs will shrivel.

**Soot Water** (*Idem*).—Your mode of making soot water is a good one, but wasteful, as the ammonia mingling with the water is rapidly evaporated. The soot does not colour the water simply because the bag is too fine in texture, so not mingling with the water, and until this takes place and decomposition or fermentation sets in the water will not assume the colour of "pale ale." There should be a thorough mixing of the soot with the water, stirring well up, and repeating occasionally for a few times, and then allow to settle. The clear liquid may be used for watering, and even syringing, and will not leave a sooty deposit. Mr. Abbey informs us that he uses the soot water fresh and without any disadvantage, although he admits the surface of the soil becomes coated with a sooty deposit, which necessitates removal occasionally; and that the plants like it is, he considers, indicated by the numerous surface roots, the difficulty in some plants, notably Gardenias, being how to remove the soot without injuring them, and is, therefore, not attempted.

**Dividing Agapanthus umbellatus** (*L. W. S.*).—The plants may be divided as soon as they have flowered, which under glass is during the early summer months. Cocoa refuse for potting should be thoroughly decayed, and may then take the place of leaf soil, or about one-third of the compost. It is no detriment to Begonias kept through the winter in boxes or otherwise after being shaken out after the foliage dies down, only they should be potted before or immediately they begin to grow. We should not like to say how long the tubers are before they begin to deteriorate, but we should think it must be a lengthened period, as we have had them for many years without noticing any failure; but, on the contrary, they have increased in size and vigour of plant under good treatment, and when they have gone off it has usually been from decay consequent on injury.

**Asparagus Beds Thin** (*A. W.*).—You do not state the age of the plants; if they are more than four years old it would be much the best plan to make new plantations, planting one or two-year-old plants next spring, the close of March or early April being a good time to plant, or just when growth has pushed to the extent of about 1 inch, planting in rows 18 inches apart, and that distance in the rows, and leaving out every fourth row so as to form an alley for convenience of cutting the heads and cleaning. In the third year from planting you will have fine heads for cutting, much finer indeed than were you to plant closer. Early Purple Argenteuil and Conover's Colossal soon attain a large size after planting. The ground should be well manured and trenched as deeply as the good soil admits before planting, and if the soil is heavy add some opening material, such as sand, the refuse of the potting bench or rubbish heap; and it should be well

drained, as, though Asparagus is a gross feeder, it is impatient of moisture lodging in the subsoil. It would not answer to transplant the old plants, as they would lift with poor roots, and the other plants in the beds they are to be transferred to would have their roots more or less injured by disturbance. We should make fresh beds, and do away with the old after the new come into bearing.

**Rhus Trees and Cattle** (*J. B. W.*).—To your inquiry as to "whether any of the Rhus (Sumach) tribe are injurious to cattle" we cannot do better than cite the following from Hogg's "Vegetable Kingdom":—"R. venenata is the Swamp Sumach, or Poison Wood of America. It yields a white juice, which exudes between the wood and the bark when the tree is wounded. The whole of this shrub is in the highest degree poisonous, but its effects are various on different individuals, and some may even handle it with perfect impunity. In those who come within its influence the whole body is sometimes enormously swollen, and the patient for many days scarcely able to move; but the complaint almost always subsides spontaneously without destroying life. In forty-eight hours inflammation appears on the skin in large blotches, principally on the extremities and the glandulous parts of the body; soon after pustules arise in the inflamed parts, and fill with watery matter, attended with burning and itching. In two or three days the eruptions suppurate, after which the inflammation subsides, and the ulcers heal in a short time. R. perniciosa and juglandifolia possess the same poisonous properties. The seeds of R. coriaria are used in medicine as restringent, styptic, tonic, and cooling. The peasants of Podolia, the Ukraine, and other parts of Russia use it both internally and externally in decoction along with Genista tinctoria as a preventive of hydrophobia. The leaves of R. copallina are used as tobacco by the Indians of the Mississippi and Missouri. R. radicans is called Poison Vine in America, R. toxicodendron being there called Poison Oak. Rhus typhina (Virginian Sumach) is powerfully astringent in all its parts."

**Names of Fruit**.—It is particularly requested that fruit sent to be named shall be wrapped in paper, and not packed in any material such as moss, hay, shavings, or bran. (*J. Hiam*).—Beurré d'Aremberg. (*J. Bounds*).—1, Ecklinville; 2, Golden Winter Pearmain; 3, Golden Pearmain; 4, Cox's Orange Pippin; 5, Red Ingestrie; 7, not known. (*J. Woodliffe*).—1, Greenup's Pippin; 2, Golden Noble; 3, Cockle's Pippin; 4, Bringewood Pippin; Pear, Urbaniste. (*J. C. R.*).—1, Flat Nonpareil; 2, Cellini; 3, Beauty of Kent; 4, Golden Winter Pearmain; 5, not known; Pear not known. (*Rosebery*).—1, Comte de Flandres; 2, Red Doyenné; 3, Napoleon; 4, Flat Nonpareil; 5, not known. (*F. Guson*).—1, rotten; 3, Huyshe's Victoria; 4, Triomphe de Jodoigne. (*E. Fisher*).—1, La Fameuse; 2, Toker's Incomparable; 3, Margil; 4, Cobham; 5, Emile d'Heyst; 6, Beurré Diel. (*H. Coombes*).—1, Triomphe de Jodoigne; 2, Beurré Rance; 3, Colman; 4, Josephine de Malines; 5, Melon; 7, Waltham Abbey Seedling. (*W. W. W.*).—1, Winter Greening; 2, Kerry Pippin; 3, London Pippin; 4, Lewis's Incomparable; 5, Old Golden Pippin; 6, King of the Pippins.

#### COVENT GARDEN MARKET.—NOVEMBER 19TH.

WE have no alteration in prices to record this week.

##### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. .. .	½ sieve	2 6 to 3 6	Oranges .. .. .	100	8 0 to 12 0
Chestnuts .. .. .	bushel	0 0	Peaches .. .. .	per doz.	3 0 8 0
Cobs, Kent .. ..	per 100 lbs.	65 0 0	Pears, kitchen ..	dozen	0 0 0 0
Currants, Red ..	½ sieve	0 0 0 0	„ dessert .. ..	dozen	1 0 3 0
„ Black .. .. .	½ sieve	0 0 0 0	Pine Apples English ..	lb.	4 0 0 0
Figs .. .. .	dozen	0 6 1 0	Plums .. .. .	½ sieve	0 0 0 0
Grapes .. .. .	lb.	0 6 4 0	Strawberries .. ..	lb.	0 0 0 0
Lemons .. .. .	case	15 0 21 0	St. Michael Pines ..	each	7 0 10 0

##### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes .. ..	dozen	2 0 to 4 0	Lettuce .. .. .	dozen	1 0 to 1 6
Beans, Kidney ..	lb.	0 3 0 0	Mushrooms .. ..	punnet	0 0 1 6
Beet, Red .. ..	dozen	1 0 2 0	Mustard and Cress ..	punnet	0 2 0 0
Broccoli .. .. .	bundle	0 9 1 0	Onions .. .. .	bunch	0 3 0 4
Brussels Sprouts ..	½ sieve	2 6 3 0	Parsley .. .. .	dozen bunches	2 0 3 0
Cabbage .. .. .	dozen	0 0 1 0	Parsnips .. .. .	dozen	1 0 2 0
Capsicums .. ..	100	1 6 2 0	Potatoes .. .. .	cwt.	4 0 5 0
Carrots .. .. .	bunch	0 3 0 4	„ Kidney .. ..	cwt.	4 0 5 0
Canflowers .. ..	dozen	2 0 3 0	Rhubarb .. .. .	bundle	0 4 0 0
Celery .. .. .	bundle	1 6 2 0	Salsafy .. .. .	bundle	1 0 0 6
Coleworts .. ..	dcz. bunches	2 0 4 0	Soorzonera .. ..	bundle	1 6 0 0
Cucumbers .. ..	each	0 2 0 4	Shallots .. .. .	lb.	0 3 0 0
Endive .. .. .	dozen	1 0 2 0	Spinach .. .. .	bushel	2 0 4 0
Herbs .. .. .	bunch	0 2 0 0	Tomatoes .. .. .	lb.	0 6 0 0
Leeks .. .. .	bunch	0 3 0 4	Turnips .. .. .	bunch	0 4 0 6



#### IMPORTANT LITTLE MATTERS.

SEASONABLE hints about what are frequently termed odd jobs, but which are better known under the designation of important little things, are regularly given week by week throughout the year. But now while there is time to spare from the regular work of the farm to bring up arrears of such work we propose calling special attention to it, first turning to

**Drains**.—After so long a drought it will be well to watch closely the action of drains when wet weather sets in, and in order that there



may be no hindrance to water flowing from the mouth of a drain see that all ditches into which they empty are scoured from end to end. This is of special importance in meadows where cattle have been last summer, for even if there was no water to tempt them into the ditches, flies often drive them there, especially if there are low overhanging boughs, and the soft soil of the ditch sides is liable to be trampled over the mouths of the drain pipes. Land having a tolerably even slope to a ditch is often drained with separate drains of 2-inch pipes emptying into the ditch, which then becomes a main open drain. We regard 2-inch pipes laid at a sufficiently sharp gradient to ensure perfect action as preferable to larger ones requiring gratings over the ends to keep out vermin. We have had a meadow drained recently, and as the surface had an uniform slope the men only required to know the proper depth to work with accuracy. They were accustomed to the work and gave little trouble, but we have had beginners who could not be trusted to do any bottom work, and we certainly consider draining so important that skilful well-paid labour should always be employed upon it.

**Water Supply.**—Sorely has many a farmer been tried by the scarcity of water during the summer and autumn of the present year, and more than ordinary attention will now be given to provision for the storage of water. Not a building of the farm should be unprovided with eave troughs and pipes to catch and convey the water either to tanks or ponds. Drains both from the land, roads, and yards should all be turned to account for the same purpose. Upon our hill farm springs abound, and all the meadows and yards are well supplied with water; but upon the lowlands an artificial provision must be resorted to, the most economical method certainly being a simple excavation for a pool or pond, which only require a well-puddled bottom to hold water well. Although the building of tanks, or the obtaining of any expensive apparatus for water supply, is hardly to be managed in these hard times, yet we may usefully call attention to the hydraulic ram as a simple means of raising water from low to high levels at a comparatively low cost, an efficient self-acting ram with piping for throwing water to a height of 200 feet costing about £10.

**Shelter for Cattle.**—Suitable materials for the building of rough cattle sheds are to be found upon most home farms. Stout posts, eave plates, cross beams, and rafters, with ridge boards, laths, rough planking or slabs for the sides, and thatching, or, better still, boarding for the roof—all should be obtained from the timberyard, common deal and scantling answering perfectly if due care be taken to tar all the exposed sides regularly. Larch posts are very durable, and the parts put into the ground should be first steeped in creosote. Every meadow should have one or more open lodges erected in it to afford cattle shelter from rain, wind, and insects, such shelter contributing much to the comfort and health of the animals, which without it invariably go at night to the corner most screened from cold by trees or hedges, but if heavy showers of rain set in they are much exposed, and suffer more or less in health. On stud farms every paddock has its open lodge for the brood mares and colts to enter at will, but it is very seldom indeed that a similar wise provision is made for sheep and cattle. In a wild state cattle are doubtless capable of sustaining exposure to inclement weather, but our domestic animals rendered delicate by in-and-in breeding require shelter; and—to place the matter on a footing understood by the most careless farmer—they certainly may be said to “pay” for it. True economy, then, and not extravagance prompts the suggestion to build open lodges, if possible, in every grass enclosure, but certainly in all such exposed positions as marsh and brook land where it is seldom that there are any trees or hedges, the land extending for miles in an unbroken expanse over which wind and rain sweeps—it may be harmlessly enough in the heat of summer, but in autumn so much harm is done that many a fine young beast ripe for the butcher is lost through being kept out for that fatal “other week or two,” which an abundance of grass tempts the farmer to venture upon, and which so often proves fatal. The beasts are then said to be “struck”—an indefinite term, which in the sense it is used here takes in all or any causes of disease not understood. Yet the evil and its remedy has long been patent to thoughtful intelligent men. Exposure to damp and cold causes bronchitis, pleurisy, consumption, and whether either form of disease is developed in an acute or chronic form, suffering to the animal and loss to the farmer is inevitable. Open lodges are therefore a means of prevention, and, to make them as efficient as possible, have the three sides most exposed to wind and rain closely boarded, and the floor either damp-proof or hardened and raised or few inches above the common level.

(To be continued.)

#### WORK ON THE HOME FARM.

**Horse and Hand Labour.**—The fine weather has enabled us to lay in a full store of hay for the carriage and saddle horses, which are always supplied from the home farm. Equal quantities of the best meadow and seed hay are sent from the farm for this purpose, the mixed hay being much liked for chaffing. We always find coachmen eager to get as much

seed hay as they can from a popular, but erroneous, idea that it contains more nutriment than meadow hay, it being, as they term it, “strong.” No doubt well-made seed hay is nourishing food, but the excessive development of the “strong” element really implies a loss of nutriment, the coarse texture of the hay arising principally from a superabundance of seed stalks. The steam corn-thresher has been at work daily threshing Peas and Oats, the first being required for the bacon hogs, and Oat straw is wanted now for store cattle, all of which are still out upon the grass by day, owing to the extraordinary mildness of the autumn and the consequent abundance of grass. Hedging, ditching, and draining are being pushed on as fast as possible, as some of the men will be wanted for cutting underwood as soon as the leaves have fallen. Chestnuts are abundant, and an ample store has been collected for sowing in the nursery for a supply of plants for underwood. Ash keys and White Thorn haws have also been saved for the same purpose and for hedges. Some tree belts being required to give shelter to an orchard and to some grass land for cattle, the land is being trenched two spits deep at 1s. per square rod, and the planting will follow immediately. Larch and Norway Spruce Fir being used, the first for nurseries 6 feet apart, and the last for the permanent belt 15 feet apart. The extra expense incurred for trenching is more than recouped by the strong fast growth of the trees. Manure-carting is again going on rapidly and well, and the manure is being spread quickly afterwards. The carting of timber, gravel, coal, and litter is part of the extra work which is now being done as opportunity offers. Motive power on the home farm is a matter of considerable importance, and is worthy of our best consideration. Water-pumping, chaffing, pulping, grinding and crushing corn, and crushing cake, all has to be provided for. Steam power, at once expeditious and economical, is by far the most generally used; but where several horses have to be kept it is worth while seeing if we cannot have horse gear sufficiently powerful to drive the necessary machinery, and to erect a plain building over it so that the horses as well as the men may be usefully employed in wet weather. With faithful energetic supervision much useful work might so be done, and done well too, and a considerable saving be effected in both time and money. As a matter of policy, as well as duty, we commend it to the attention of the managers of home farms, for depend upon it, it is the man who, while getting the work well done, continues to reduce expenditure to whom the landowner must in future give preference in these times of reduced rents and straitened means.

#### PREPARING FOR PERMANENT PASTURE.

I HAVE a field of rather poor soil somewhat chalky. I wish to lay down permanent grass. It had Wheat last year, and was manured for it, and the farmer proposes corn again. Could I give an extra manuring now, then sow corn, and sow the grass in spring among the corn? Would the land require extra cleaning and twitch-clearing, and when? It is not yet ploughed.—W. H. A., *Surrey*.

[Advantage should have been taken of the fine autumn to thoroughly clean the land, but if the fine weather lasts long enough it may be done now, the land manured, and Wheat sown. Next spring sow 10 lbs. Cocksfoot, 10 lbs. Timothy, 5 lbs. Hard Fescue, 1 peck Perennial Rye Grass, 5 lbs. Dutch Clover, 4 lbs. Cow Grass, 2 lbs. Perennial Red Clover, 4 lbs. Alsike, 2 lbs. Trefoil, and 2 lbs. Rib Grass per acre. A spring dressing of half a ton of quarter-inch bones per acre should also be given. It is so important that the land should be clean before being laid down for permanent pasture, that if you are unable to clean it now it will be far better to give it a summer fallow, clean it, and sow Wheat as directed next autumn, and grass the following spring.]

#### OUR LETTER BOX.

**Beet as Food for Stock (R. S.).**—There is no doubt about Beet being of higher feeding value than any variety of Mangold, but only as it contains more sugar than common Mangold. As, however, the yellow Tankard Mangold is most valuable as regards nutrition, and the weight grown per acre is greatly in excess of Beet, we should prefer it as farm produce for the feeding of stock.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1884. November.	Baromet- ter at 32° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In	
Sunday .....	9	30.290	51.7	46.8	S.	48.0	55.7	40.8	68.7	38.8	
Monday .....	10	30.570	48.1	46.3	E.	48.9	54.6	44.0	70.2	35.4	
Tuesday .....	11	30.437	45.7	44.1	E.	48.8	53.2	43.4	60.7	34.8	
Wednesday ..	12	30.312	45.9	42.6	E.	47.8	48.6	42.9	52.0	34.1	
Thursday ....	13	30.374	45.3	42.8	N.	47.8	49.1	43.9	54.6	40.4	
Friday .....	14	30.488	40.1	39.0	N.E.	47.4	46.9	36.4	60.3	29.7	
Saturday ....	15	30.466	38.0	36.5	E.	45.2	43.5	30.1	50.8	21.5	
		30.420	45.0	42.6		47.7	50.2	40.2	59.6	33.5	
										0.014	

#### REMARKS.

9th.—Dull, with slight rain in evening.  
10th.—Fine and pleasant.  
11th.—Fine, but not bright.  
12th.—Cloudy but fine.  
13th.—Dull, but no rain.  
14th.—Fine, some sunshine.  
15th.—Dull but fair.  
A very fine week, though with little sun except at the beginning. Sharp frost on the last day.—G. J. SYMONS.





27	TH	Royal Society at 4.30 P.M.
28	F	Quekett Club at 8 P.M.
29	S	
30	SUN	1ST SUNDAY IN ADVENT.
1	M	
2	TU	
3	W	Society of Arts at 8 P.M.

## FIRING.



ANY useful articles have appeared from time to time on this subject, and it is doubtful whether we can point to one of more importance in the interest of employers and employed. It is not my rule to speak or write disparagingly in any degree regarding the rising generation of gardeners; yet this I do say, that young men as a rule do not pay nearly so much attention to this part of their calling as they ought.

If strict order and system are needed at all it is in firing, for in moderately large establishments even it does not require much argument to prove how easily the amount paid to one man may be wasted. Certainly there are such a variety of boilers nowadays that some experience is needed to best manage them. I have had a fair amount of experience with different kinds, but never yet could I justly condemn one of them as distinctly inferior, though of course some appeared to be more easily managed than others. I would almost venture to say that one thing needful to make a competent gardener is that every young man should be taught to fit up hot-water apparatus whenever such work is proceeding. I had early the benefit of such training, and ever since have I had a desire to gain as much knowledge as possible. In changing situations or taking a new charge I make it my first object to thoroughly investigate the boilers, valves, and pipes.

Returning to the matter of firing, I say that a good system is of equal benefit to all persons. It is sometimes almost deplorable to see a young man come out of the stokehole with hat and clothes powdered with ashes, to say nothing of dust taken to be digested. This suffocating kind of stoking is not necessary, and where there is such the employer will have to pay liberally for it either in injury through want of heat or over-consumption of fuel. Anyone who pays the necessary attention to this part of their business will agree that at no time, or very rarely indeed, is it needful to have the furnace more than a third full of fierce fire, and even much less is often quite sufficient. If not, there must be a want or failing in the arrangement of the pipes, and the sooner such be rectified the better. Happily there are few employers who cannot see the reason of such requests if it be rightly pointed out, and to do this requires a fair amount of knowledge, or perhaps the complainant will exhibit a weaker point than the deficiency under consideration.

Nothing can be more in opposition to economy or the health of those who have so many years of duty than to be continually battling with the furnace half, and sometimes three parts, full of fire, of which quite one-half is only ashes or lumps of clinker broken in pieces. Experience has taught that the less the poker is used the better, provided there is a really good coal rake, and if this be used properly to a medium-sized bright fire there will be fewer dusty hats and asthma-like coughs on leaving the fires. Simply use the poker to raise or remove the clinker into the ashpit, keeping the latter door closed during the raking. The hot clinkers put in the ashpit until cool will give no offensive smell, the fumes passing again into the furnace.

In the case of a large terminal saddle put in here nearly two years ago all this nuisance is obviated by having the ash-pit made water-tight with cement; the floor sloping to a depth of 12 inches at the back, and having a supply tap with piece of hose attached. This trough is kept full, and by this means we have an improved draught. I may add that this idea is not entirely original, but partly adopted from a gas-making and manufacturing furnace, from close observation of which I have gained and strengthened a few ideas, especially with regard to the coal-rake more generally supplanting the poker. It will at once be seen that with the water beneath the annoyance of dust is almost entirely prevented, as by closing the bottom doors every particle is extinguished as it falls when plying the rake. This is the only time we consider it necessary to fully draw the damper out, while to secure a uniform night draught we have a pin rivetted through, allowing exactly 1 inch of space, and very little more is required at any time, always contriving to have something like 6 inches of clear bar space adjoining the back dead plate to increase the current and aid in consuming any smoke which must pass over. If coal be used we would advise still greater clear fire surface at the back, and that the clinkers be put underneath until slacked and removed at once, also that the ashes be drawn out with the rake and put on one side.

Thorough cleanings according to general rule may be done three times each day. At the first attention in the morning, or when the fires are somewhat low, it is advisable to carefully put the fuel together, and with a little fresh added to encourage it to form a body before it is done, as in many cases the operation will entirely kill what was there. The next cleaning may take place any time from three to four o'clock, according to circumstances, and again at eight. Too much importance cannot be attached to the condition of the fires at this hour, nor should those on duty be allowed any discretion as to whether half an hour later will not be equally well. In order to show how much more cleanly this water system is, I may say our stokehole, very much confined, was well whitewashed more than a year ago, and at the present time appears quite fresh.

It may be mentioned that the boiler is not set up in the ordinary way with side flues. After the smoke has passed along the flue through the top of the boiler it is made to pass directly over the same part on the top, escaping into the chimney before reaching the flow pipe. The sides of the boiler are built solid, which we consider more economical, having less space for cold air around, judging by the greater length of time the water remains hot in the boiler after the fire is entirely drawn out. Again, we consider the much superior draught with an almost closed damper effects a great saving, nor are the ashpit doors opened very wide.

The question of which boiler is best it is almost impossible to discuss. As I have before said, there is hardly a boiler that would not answer with good management, and with the terminal end saddle I am quite satisfied.—LATHYRUS.

## NOTES ON ROSES.

I FEAR I am rather late in thanking Mr. Mawley for his interesting and useful tables of the Roses most frequently exhibited. I rather regret that he did not at the same time make a note of every Rose mentioned as having won a prize as an individual, as best H.P. or Tea, or best Rose. If he had given an extra mark for each occasion of such a distinction, I think it would have added to our knowledge of the value of each Rose, and I fancy such an addition might have made both La France and Souvenir d'un Ami shake on their thrones. We seldom, however, see Maréchal Niel figuring as "the best Tea," because the finest blooms from walls are over before exhibition time.

I must thank, too, "A Northerner" for his useful and practical, if not novel, advice. But stay:—"Tea varieties need no more protection than H.P.'s. Teas are as hardy,



if not hardier, than H.P.'s." This at least is novel, and requires consideration. Contradiction is neither argument nor good taste. In the face of almost universal experience I can make nothing out of it, except this—he recommends Maréchal Niel on a wall only "in favourable localities." Is it possible that "A Northerner" resides so far north that his H.P.'s do not ripen sufficiently?

The Leek exhibitors seem certainly to be keen competitors, according to a "Puzzled Inquirer;" but has he not rather disregarded the old proverb about "washing dirty linen at home?" I confess I think most Rose exhibitors will sympathise with Mr. Johnson. If the Committee of the National, after considering all the evidence, were of opinion that the exhibitor who had gummed his Roses was able to prove his claim to the cup in a court of law, they were doubtless right in advising that it should be given to him; but that they should purposely abstain from expressing an opinion upon the practice of gumming Rose blooms will seem to many a deliberate abdication of their proper functions.

"Y. B. A. Z." has given us an interesting paper on the "Enemies and Friends of the Rose." The larva of the Syrphus which he mentions used to have my hearty squeeze whenever found, till one day I happened to see one sucking an aphid, but it is not common with me.

He does not tell us how to deal with the grub, which goes straight down inside the shoot. It is easy enough to kill him, but not till he has done all the mischief he is capable of. I suppose the only consolation is that he will not live to breed.

"Y. B. A. Z." does not mention a brown weevil (*Otiorhynchus picipes*) which has done me considerable damage. It affects especially the bud placed in a stock just before it begins to push in the spring. It will eat the whole of the bark of the bud, and the bud itself clean out; and then, leaving the wild buds, look for the treasures of your heart all down the row of Briars; and the aggravating part is that you will never see him if you do not know "his tricks and his manners." He lies hid all day long in an old wall, or bunch of Ivy, or something of that sort, and only comes out to feed after dark, and then he will go back to the very same plant and the very same bud, if he did not quite finish it the night before.

You must look for them with a lamp. I have destroyed thirty-six in one evening, but not latterly. I think I have nearly finished them. They may be killed by picking them off and popping them into boiling water, but I confess that my injured feelings have gained more satisfaction from "squelching" them with a small pair of pincers.

I am strongly of opinion that in many cases aphides are an effect as well as a cause of harm. I mean that they will not often attack really strong-grown Roses so as to do them much injury. "Hit him when he's down"—another form of Darwin's celebrated law of Nature. With occasional exceptions (*e.g.*, the grub that goes down inside the shoot, and, in some instance, mildew), animal and vegetable foes choose the weakest and most unhealthy Rose trees for their attacks. My Roses never suffer much from aphides (though they came thickly enough at one time last summer), and I never use anything but the aphid-brush.

I am afraid I have not a very high opinion of the friends of the Rose. The larva of the Syrphus is not common enough with me to do much good. I see but few ladybirds, and never fewer than when there is a heavy visitation of aphides. This year there were two blue tits' nests within 20 yards of the quarter acre of my Roses. The young ones were hatched just about caterpillar time, and I watched the old birds feeding them, but never once saw them go to the Roses, but always up into the Beech trees for food, and the tomtit has sunk in my estimation accordingly.

I believe it was a casual remark of mine which started "A Thinker" upon his valuable and important reasonings on the subject of liquid manure on dry soil. I think he has quite proved his point and given us much useful teaching on

the subject. But I started at his last paragraph in last week's number. His conclusion, after twenty years' experience, is that "Masters, as a rule, are pretty much what men make them." Truly this is an age of progress! "Masters," please note; not "employers." And if "masters," should not the other word be "servants?" Mr. Soper, in his admirable paper, which is surely well up to the times, makes it so. So, masters are to be trained and "cured," if necessary and possible, by their servants! If I recollect right, "A Thinker" suggested some time ago, when I offered some remarks on the subject, that I was "of a good old-fashioned sort," a description to which I take no objection whatever. Will he, then, be surprised if I still retain the old-fashioned idea (or perhaps ideal?)—that servants (or men, if you like) as a rule are pretty much what masters make them?—A. F. M.

#### CULTURE OF MUSCAT OF ALEXANDRIA GRAPES.

ONE of the most fertile causes of shrivelling in this variety, as shown by Mr. S. Castle, is no doubt due to overcropping, especially when the Vines are young. When so weakened they in some instances take years to regain their proper health and vigour, even if they are cropped but lightly in the meantime. Another cause, and one also referred to by Mr. S. Castle, is undoubtedly in maintaining too high a temperature, especially during the early stages of growth; and this error is frequently committed just at the critical period when the Vines are in flower by the adoption of a practice of materially raising both the day and night temperature, and in also maintaining a very dry atmosphere at this period, under the erroneous impression that more perfect fertilisation is thereby insured. Instead, however, of this good result being achieved, very frequently a too sudden and too great demand is made upon the roots which they are unable to supply, exhaustion occurs, and imperfect setting is the natural consequence. If these shrivelled berries be opened and examined, in no instance will they be found to contain more than one seed each, and more frequently none at all. This clearly points to imperfect fertilisation as the chief cause, and although this may often be the result of previous mismanagement, it is undoubtedly as frequently caused by too exhaustive treatment during the current year. "By no means hurry the period of flowering" is an old and very valuable lesson taught by Nature which we should wisely remember in cultivating the Vine.

Nor is this the only evil that ensues from maintaining too high temperatures, as the Vines in such a condition quickly become a prey to insect pests, amongst which the red spider is perhaps the most formidable and the most difficult to eradicate—so difficult, in fact, that when once fixed on the foliage it is almost an impossibility without injuring the Vines to do so until the customary winter dressings and cleansings can be again applied. Heavy syringing may partially dislodge but will not destroy it, nor is such an amount of syringing desirable nor advantageous in other respects. The sulphur remedy is generally advocated, but sulphur fumes will not destroy red spider unless evaporated at such a high temperature as to make the remedy quite as bad or even more injurious than the attacks of the insect. The person who could discover a simple, safe, and effective mode of destroying this pest on Vines in the middle and latter stages of growth without producing any blemishes or other injuries to the foliage or fruit would fairly be entitled to great and lasting honours. Vines so affected cannot swell their fruit properly even if the berries be perfectly fertilised—they may, however, become sweet—nor can the buds for the successive crop be well formed nor fully developed.

Undoubtedly prevention in this case, as in most others, is better than cure, and where vineries are appropriated solely to their proper purpose this is comparatively easy; but where, as is now customary, all kinds of plants have to be cultivated therein, the matter is not quite so simple nor so free from difficulty. Under the latter conditions a lower and more equable temperature would be more conducive to success, and much less likely to result in shrivelled berries, which are simply the result of check either to the root or branch, too often caused by maintaining an unsuitable and unnatural atmosphere. Deficiency of water or insufficient food at the root is another cause of shrivelling, but my experience differs somewhat from that of your correspondent with respect to the comparative amount required by Muscats and black Grapes. I find their requirements in this



respect do not differ materially; but if there is any difference the Muscats require, at least when the ripening process commences, somewhat less water than Hamburgs do.

The fact of this special variety succeeding so well on the extremely hot, shallow, rocky slopes in the east, also the advantages derived by it when planted in raised borders in this country, both point to this conclusion; because in such positions their roots are not only warmer but necessarily much drier than in borders made even with the ordinary surface; and I think it is quite as much due to their comparative dryness as to their increased heat that these raised borders are so beneficial to Muscats. Although this dryness in the soil during the earlier and middle stages of growth does doubtless tend to weakness in the Vine as well as imperfect shriveled berries, it is of great advantage when the fruit is ripening.

Some years ago much was said and written about the marvellous success achieved by growing Muscats in a border the base of which was constantly saturated by a spring of cold water; but as we have not heard much of these wonderful Muscats lately we may reasonably conclude that such treatment did not long succeed, simply because it was not in accordance with the nature of the Vine. Shanking and not shrivelling would, however, in this case be the probable result—an evil far greater and more difficult to remedy.—VITISATOR.

#### MUSTARD AND CRESS FOR MARKET.

[The following article originally appeared in this Journal March 16th, 1882; but as that issue has been some time exhausted, and we have had several applications for the number containing the particulars respecting this subject, we have reprinted it.]

In most English gardens attention is given to providing a supply of Mustard and Cress for salads; and being easily and quickly grown, and further possessing very wholesome qualities, they are within the reach of all, even of those with most limited means or accommodation for plant or vegetable growing. Still, very few residents at a distance from London have any idea of the extremely large quantities of this small salading grown to supply the demands of the metropolitan markets. It is only by visiting the gardens where its culture is made a speciality, or by an early morning journey to Covent Garden Market, that anyone unacquainted with the facts would be able to form the slightest conception of the extent of the trade in such apparently insignificant productions. One reason for this is that Mustard and Cress require to be quickly grown, quickly sold, and quickly conveyed to the consumer, as it soon becomes tough and tasteless after cutting; and the consequence is that outside the markets large quantities are seldom seen, as the retailers purchase only what is ordered, or as much as they consider will meet the demand for the day. The supply is thus very generally distributed; and though few shops have more than a dozen punnets, there is scarcely one in a respectable neighbourhood that does not require some daily. But for this fact it would seem almost incredible that so large a quantity as some growers raise could be consumed while fresh.

The chief season for Mustard and Cress is during the spring months, at which time a thousand dozen punnets are brought to Covent Garden Market daily by the chief growers, and one alone sends from a thousand to fifteen hundred dozen punnets per week. The supply is maintained in a varying degree throughout the year, reaching its lowest in November, December, and January, especially in severe or very wet seasons. It is, however, a constant crop, and one grower informs me that his supply would average five hundred dozen punnets per week throughout the year; and judging by the space he devotes to its culture the quantity does not seem to be exaggerated, though the results are somewhat astonishing when we consider the money value that is realised.

The price per dozen punnets varies from 1s. to 2s.; but as less than the first-named price has sometimes to be taken the average might be fairly considered to be 1s. the dozen. Thus five hundred dozen per week would give a total annual amount of £1300; and taking the profits at the very low estimate of 10 per cent. we have a yearly income of £130 for Mustard and Cress alone. From what I have seen and can judge of the labour and expense incurred in the production I should, however, think the profits would be nearer 20 than 10 per cent. The result appears almost incredible, and considering that even those market gardeners who grow the largest quantity of small salad also have several other crops, especial attention being paid to Mushrooms, this form of market gardening seems to be a rather satisfactory one. It must be remembered that these particulars only refer to those who grow the largest quantities, and less than half a dozen almost entirely supply the demands of Covent Garden. In small quantities it would probably not pay for carriage, and most of those mentioned as making a speciality of small salading have waggons which convey that and other produce to London and return laden with manure. The grower must also be conveniently situated as regards distance from the chief markets, or the expense would be considerably increased and the quality of the salad greatly deteriorated if it remained closely packed for too long a time.

It may be of interest to some readers to know the methods of growing this salad adopted by market gardeners around London; and as I have recently had an opportunity of visiting several of these establishments a few observations upon the subject will give an idea to those who are desirous of commencing the culture on a large scale. It may be pre-

mised that though some of the best gardening in the kingdom is to be seen in market growers' establishments, yet there is generally so much trade rivalry and jealousy that a reluctance to communicate any details of culture very generally prevails. Some who have been successful imagine they possess a secret essential to the satisfactory production of any particular crop; yet after all they only act upon general principles, and in half a dozen different establishments as many different systems may be seen in operation, with results that vary but very slightly, and are in a pecuniary point of view equally satisfactory. So it is with the crop now under consideration. One man who has been very successful in the culture of Mustard and Cress, and who sends a very large quantity to market, considers that his progress is due to certain cultural details which he would not communicate on any consideration, and he is under the impression that other growers are continually endeavouring to ascertain these, even going so far as to offer some of his men very high wages to obtain their services; yet this does not appear necessary, for all growers I have seen have equally good crops.

One highly important matter is to obtain good seed, as unless this is done the crops will come irregularly, and it will be difficult to obtain a constant reliable supply. It may be here mentioned that very little of the true Mustard (*Sinapis alba*) is grown, the substitute employed being Rape (*Brassica Rapa*), which is preferred chiefly because it has a milder flavour and the young stems blanch very readily, being also free from the small hairs which the stems of Mustard bear. Cress (*Lepidium sativum*) is grown in less quantities than the Rape, as it is less in demand, and, further, it is rather more trouble to raise than the other, as most gardeners know. The wholesale prices per bushel average about 12s. for Rape and Mustard, and 16s. for Cress, though samples of superior quality realise higher prices. Another point that especially needs attention is sowing the seed very thickly (in the case of the Rape the seeds are placed as closely as possible), as that not only insures the blanching of the stems, which adds greatly to the value of the crop, but it also simplifies the packing, as when the stems are so close together they are cut and placed in the punnets quickly and evenly. A light soil or compost is invariably employed, but the best results appear to have been produced by old Mushroom-bed manure not too much decomposed, which is sifted or screened and placed in beds 3 or 4 inches deep quite level, moderately firmly, and if at all dry it is thoroughly watered before sowing the seed. Almost any kind of light soil is suitable, and old tan was used at one time very largely for the purpose; indeed, there was one grower at Vauxhall some years ago who employed that entirely. It is also said that the sawdust which is now used in some stables is well adapted for Mustard and Cress; but it is too "strong" when first received from the stables, and requires storing for a time or to be drenched with water to remove some of the ammoniacal compounds with which it is saturated. An important object is to obtain salad free from grit, and on this account the old Mushroom-bed manure seems to be especially useful, as it forms a moist nourishing medium, in which the rootlets can readily extend. The seed not being covered with soil also aids in insuring a clean crop, and the surface being rendered as fine and even as possible, the produce is obtained of equal height, which also adds considerably to the value of the crop, and facilitates the cutting and packing in punnets.

These particulars especially apply to the winter and early spring supply, which has to be raised in heated houses or frames. In the summer beds are prepared outside. Where the early supply receives much attention small span-roof houses or lean-to frames are devoted entirely to the purpose, as are the inside borders of late vineries. In the former case the houses are about 9 feet wide and 6 feet high, and vary in length from 30 to 60 feet, but of course the length is of little importance. They are heated with 2-inch or 2½-inch pipes, one row extending round near the sides. The beds are 4 feet wide, thus leaving a space of a foot for a path down the centre, which are edged with narrow boards 3 or 4 inches deep on each side, and next to the pipes also. The frames are about 5 feet wide, with a pipe along the front. In the case of the vineries the prepared soil is simply spread on the surface of the border to the required depth, and the seed is sown, sometimes being pressed slightly into the soil with a flat piece of wood or something similar. A good supply of water is then given, and the seed is covered with ordinary garden mats. These are only removed when it is necessary to supply water; and this must be carefully attended to, as little is given after germination is well advanced, or decay is likely to result. The mats are kept on during the day until the young plants have grown an inch or two, when they are removed to permit the seed leaves to acquire a bright green colour—a point of some importance in combination with well-blanching stems.

In from eight to twelve days the crop is ready for cutting—i.e., when the stems are about 4 inches high, and to effect this a peculiar but simple knife is used. This has a straight flat blade like an ordinary dinner knife, but not rounded at the end, about an inch broad and a foot long. Near the handle is a crank turned upwards at right angles to the blade like a bricklayer's trowel, and the end is again turned at right angles, but parallel with and away from the blade; this is inserted in the handle just like the trowel. With this instrument the salad is cut much in the same style as mowing with a scythe, the blade being flat on the ground. One sweep of the knife cuts enough or more for a punnet, and is taken up with the hands and placed in evenly, so that it appears almost as it had grown in it. Some practice is required to effect this satisfactorily, and skilful experienced cutters can gather and pack over a thousand punnets a day. The punnets are then packed in boxes and conveyed to market in vans. The chief labour is removing the old material from the beds, which has to be done after every crop; this is stored away in a heap for several months and then incorporated with fresh material. Where the compost is



purchased this is a rather expensive item, and one grower, I am informed, pays 2s. 6d. a load for old Mushroom-bed manure. In the best-managed establishments, however, Mushrooms are grown in addition, and that outlay is thus to some extent reduced. It should further be added that both houses and frames are constructed in the most economical manner possible, utility and cheapness being the chief objects.

As to the space required, some idea may be gathered from the fact that the punnets are about 6 inches in diameter, and I should think at a safe estimate a square foot of a good crop would fill two punnets of Rape, a little more Cress being required. Thus a heated frame 60 feet long with a bed 5 feet wide would yield about fifty dozen every fourteen days throughout the year, as the lights could be removed and the heat discontinued as the season advanced. Taking twenty-five crops in the year at the rate of 1s. per dozen would give a yearly total from one frame of £62 10s.; or to put it in another way, the yearly return per square yard of ground occupied would be over £1 10s., a quarter of an acre so cropped giving £1815 per annum.

Although Mustard and Cress seed differ in cost to the extent of 4s. per bushel, there is not much difference in the results to the grower. For instance, a bushel of Mustard or Rape is sufficient to sow 256 square feet of bed, the same quantity of Cress being sufficient for 384 square feet; but for the same cost as the Cress 340 feet can be sown with Mustard. The ultimate results thus vary slightly, for though a somewhat higher price is obtained for the Cress, yet smaller quantities are required, and there is more uncertainty regarding the crop. As a guide to those intending to grow this salading it may be stated that a pint of Mustard seed is required for each 4 square feet, and the same amount of Cress for each 6 feet. From about 25 to 30 per cent. should be deducted from the estimated returns for the cost of the seed. Thus, to provide the five hundred dozen per week mentioned above between six and seven hundred bushels of seed are used yearly, at a cost of something over £400, or about one-third of the returns. The punnets are very cheap, but even for them, where such large quantities are grown, £2 or £3 per week is said to be the average outlay. It should be stated that some growers soak the Rape seed in water before sowing to hasten the germination.

Such are a few particulars concerning a very simple crop, which, if judiciously managed, can evidently be made more profitable than some others apparently of far more importance. The prices and quantities have been chiefly furnished by reliable market salesmen, and the information obtained from several different sources agrees in the main facts. Further, to avoid misleading statements as much as possible, the lowest figures have been given in each case.—L. CASTLE.

## ROSE MILDEW.

*SPHÆROTHECA PANNOSA, LEV.*

IN describing the fungus of Rose mildew there is little need to advert in detail to the external aspect of Rose trees when suffering from an attack of this plague. The deplorable appearance of infected trees is only too well known to every gardener. The leaves and stems of the trees appear to be thickly dusted over or frosted with a greyish-white powder; every part of the plant in bad cases is distorted, curled, swollen, blistered, and sometimes blackened; the flower buds are often attacked, and then all chances of fair blooming are effectually destroyed. It is impossible to imagine a more melancholy sight in a flower garden than beds of Roses badly mildewed.

We may not be able to point out how mildew can be prevented or destroyed, but we can at least clearly explain the habit and nature of the fungus which causes the mischief. Sometimes a knowledge of the habits of fungi gives a clue to a possible prevention or cure, but without full information it is obvious that any attempts to ward off disease is mere working in the dark.

Opinions vary greatly amongst practical men as to whether mildew is fostered by a dry or humid season. Some say it is started by damp weather, others by dry. There can be no doubt, however, that in another closely allied mildew—the mildew of Peas, *Erysiphe*—hot and dry weather greatly aids the spread of the fungus. Abundant watering will stop the spread of mildew amongst Peas in dry seasons.

To understand the mildew of Roses a careful examination of the fungus must be made with the microscope at different periods of the summer and autumn. As it is probable that many readers of this paper may not have a microscope, or if they have may not possess glasses of very high power, we will supply this possible deficiency by furnishing a series of illustrations traced from camera lucida reflections from Nature, direct from our own microscope. We are not aware of the existence of any similar illustrations in any English book, as Dr. Cooke in his excellent work on microscopic fungi only gives two very small figures of the ultimate condition of the fungus.

In the first place, then, we will take a Rose leaf in the summer frosted on both sides with mildew. The mildew is generally more profuse on the lower surface. With a keen knife we will cut the leaf in two, and from one of the exposed cut edges of the leaf we will, with an extremely sharp knife or razor, cut off an excessively thin and transparent slice. When this long transparent thread-like slice is laid on its side on a glass slide we must cut a fragment from the middle, cover with a disc of thin microscopic glass, and then place under the microscope.

If we magnify the fragment 200 diameters we shall see it as in fig. 79. The thickness of the Rose leaf, seen in section, is shown between the letters A and B. The upper surface of the leaf is shown at A, the under surface at B. The upper surface is supported inside by a double series of sausage-shaped cells termed palisade cells, as shown at C; these cells

make the upper surface of a leaf firmer than the lower surface. The lower surface is furnished with numerous little openings termed organs of transpiration, sometimes "breathing pores," one of these is shown at D. The circular bodies between the upper and lower surface of the leaf are the loosely packed constituent cells of which the leaf is built up. It will be seen that the leaf cells do not everywhere touch. The open spaces between are termed intercellular spaces, and it is the habit of the spawn of many fungi to grow in these spaces. All plants part with moisture in the form of fine vapour through the organs of transpiration. The lower surface of the leaf is almost invariably shown upwards in botanical drawings, made to illustrate fungi, because the fungi generally grow on the lower surface, and it is necessary to reverse the leaf to observe the habit of the fungi.

We will now leave the little fragment of Rose leaf itself and turn to the fungus upon it. The first point to be noticed is the woven mass of greyish white mycelium or spawn upon both surfaces of the leaf, as shown at E and F. Under a simple lens this spawn looks like a thin stratum of spider's web. The spawn, as will be seen by the illustration, is woven over the organs of transpiration. By this habit of growth the mouths of the plant are stopped, and the leaves are, as it were, suffocated. The spawn or mycelium is also furnished with minute suckers which hold on to the leaf and more or less pierce and injure the constituent cells. This piercing sets up decay.

Springing from both beds of spawn on the leaf surfaces are numerous necklace-like clubs, each club being built up of numerous oval or sausage-

shaped bodies. It will be observed that the club growths are much more robust on the softer and looser under surface of the leaf, as shown at G, than on the harder upper surface, as seen at H. This club-like growth is the early condition of Rose mildew, and this state of the fungus is known to botanists as *Oidium leuconium*, *Desm.* The name is derived from the Greek. The first word indicates the egg-like form of the cells of the club, and the second word the white colour.

Two hundred diameters is a power barely sufficient to show the mildew well, so in fig. 80 we have shown a group of clubs under twice that power—viz., 400 diameters. A perfect necklace-like club is shown at A, growing from the bed of spawn at B. A young club is shown at C, whilst at D a club is shown in the act of falling to pieces. Each oval body which goes to form a club is a spore or seed capable, upon germination, of reproducing mildew. The upper spores germinate more quickly than the basal ones. Each bead-like spore, bud, or seed is so slightly attached to its neighbour at top and bottom that the faintest breath separates them. All are so potent with life that they frequently germinate as they stand in club form; others germinate as they sail through the air, as the one at E. The thread which is emerging from the spore is a thread of mycelium or spawn ready to invade any Rose it may fall upon. These spores are often technically termed conidia, from the Greek word indicating dust. The spores or seeds are sometimes produced in such inconceivable abundance in mildew, and especially so in the genus *Oidium*, that gardeners are often put to great inconvenience by merely inhaling the spores. The numbers of the fungus spores are so great on any badly infected Rose bush, that a row of seven figures to

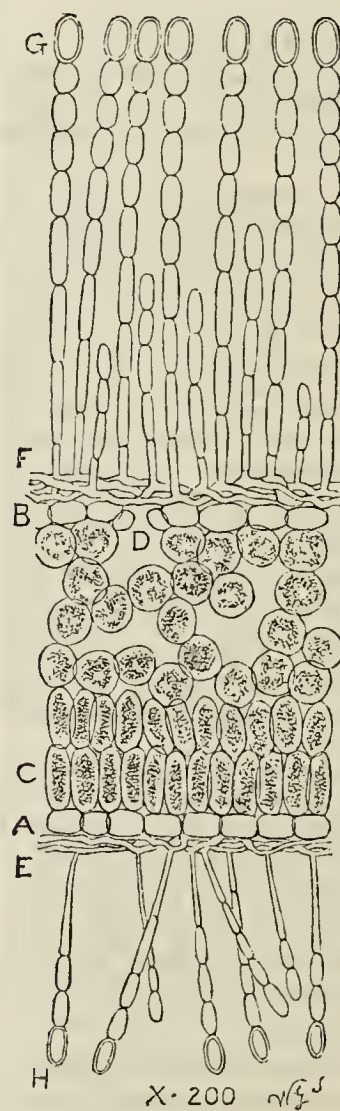


Fig. 79.—Rose Mildew; its early state, enlarged 200 diameters.

indicate millions gives no idea of their enormous numbers. This profusion of spores is a provision of Nature for the safe preservation of the species.

Nature seems to have determined that but few of her works shall be destroyed by man, especially her smaller works. If we make a still closer examination of an infected Rose leaf we may probably find other bodies growing from the mildew spawn resembling the growth shown at F. Each of these is a sort of swollen flask, densely packed with seeds or spores of another class. As maturity is reached the flask bursts as shown at G, the secondary spores are shot out in vast numbers, and many of them germinate as they sail about in the air, as shown at J. The spore-flask is technically termed by botanists a pycnidium, from a Greek word which indicates dense packing, in reference to the closely packed spores or seeds. Our readers will now see that the fungus of Rose mildew has such enormous powers of reproduction, that when it has once made its attack on Roses, everything is in favour of the mildew and nothing in favour of the Rose and its grower.

Judging by the effect of the fumes of sulphur on the *Oidium* of the Vine, there can be no doubt that Rose mildew could easily be destroyed by sulphur if the fumes could be made to reach the fungus, and if they were applied in the earliest stages of the growth of the fungus—that is,



before the spawn threads are woven over the little organs of transpiration, and before the leaves are injured by the piercing of the little suckers from the fungus spawn. When Roses are badly mildewed they may be syringed where practicable with water, softsoap, and sulphur—5 gallons of cold water, half a pound of the best softsoap, and a handful or two of flowers of sulphur, the whole to be left for a few hours for the soap to thoroughly dissolve. Two dressings of this mixture will generally remove all traces of the fungus, and green fly too should it be present. Pure water to be afterwards used. Roses in houses could be easily reached by sulphurous fumes, but this part of the subject we leave to practical and experienced growers. The spores of Rose mildew very soon perish in the air; they cannot withstand dryness, heat, moisture or cold; there is no evidence to show that they can live for more than a day or two at most. Unless they light upon Roses or some allied plants they perish at once. We have shown that Nature has provided for this emergency by the constant and repeated production of vast numbers of fresh spores.

When the chilly weather of autumn arrives the mildew has vanished;

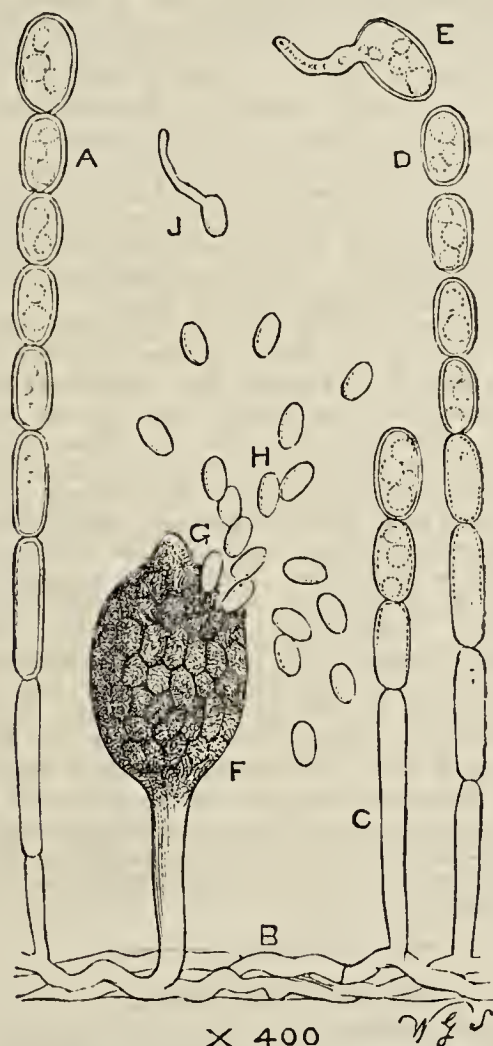


Fig. 80.—Rose Mildew: its early state, enlarged 400 diameters.

every spore of the Oidium has collapsed and perished—not a single Oidium spore can possibly survive the winter. How, then, does this plague of gardeners tide through the frosts of winter and reappear in the following summer? Nature protects the Oidium of Rose mildew from destruction in the following manner:—

If the dying Rose leaves of autumn are examined—leaves that have been injured or killed by the mildew—it will be seen with a lens that the spawn threads are here and there dotted over with little black grains. Each grain is so small as to be invisible without a magnifying glass. Under a strong hand-glass the dots look like minute but perfectly round grains of gunpowder. We will now put an autumn leaf fragment under the microscope and magnify 100 diameters. This is only one-half the magnification of fig. 79 and one-quarter of fig. 80. The black dots are now seen as at A, fig. 81; they grow from the spawn threads of the Oidium or mildew. Each dot is a perfect black sphere or round box furnished with radiating brown tentacles or appendages as shown. The use of the appendages to the fungus is uncertain. As each little black globular box is not larger than the point of a needle it may be considered by some as no easy matter to cut one in two and see the nature of the inside. Still, the performance of this feat is quite possible. If many sections are taken with a lancet or razor one or more of these boxes will be seen in section. Such a section is shown at B. It will be noticed that there is a comparatively thick outer coat to the box, made up of minute pieces spliced or dovetailed together. This outer coat, inconceivably fine and thin as it is, is droughtproof, frostproof, and waterproof. Dryness, coldness, or wetness will not injure it or its contents. Within the box, and represented by a single fine line in the section, is a small, transparent, globular bladder, and inside this bladder there are eight neatly and cosily packed oval spores or seeds of mildew. Nature takes such extreme care for the preservation of her smallest works that she takes all these pains to preserve the spores—always eight in one bladder, each bladder in a circular air-proof black box, and all invisible to us without the microscope. The box is termed by botanists a perithecium or conceptacle, or one box which covers

another, and the bladder inside is termed an ascus, meaning a sack, bladder, or bottle.

The whole apparatus is so neatly and well made and so perfect that the frosts, rains, and winds of winter have no effect whatever on the eight little mildew spores so snugly packed away. One infected Rose leaf will bear hundreds of these microscopic boxes, each with its bladder inside containing eight spores. This state of the fungus of Rose mildew is the perfect and most complete state; this is the condition named by botanists *Sphærotheca pannosa*, Lev. *Sphærotheca* means a round box or case; *pannosa*, we presume, indicates the shrivelling effect of the fungus on the leaves.

If infected Rose leaves are placed on a garden bed in late autumn they may be examined at different times during the winter, and the minute black mildew boxes will always be found uninjured by the vicissitudes of weather. The Rose leaves will gradually fall into decay, but the mildew boxes or perithecia will not decay.

When the frosty weather of winter has gone and the cold doubtful weather of early spring has passed away, when the warm sun of early summer begins to shine, Nature prepares to set free the spores of Rose mildew. If we take from our garden bed a decayed leaf fragment on which the boxes or perithecia have been borne, and examine it under the microscope in the month of May, we shall probably see it, if enlarged 500 diameters, as shown in Fig. 82. The warm sun and warm showers of early summer cause the box to split as illustrated at A; the bladder containing the eight neatly packed spores or seeds is then expelled through the opening of the box, as seen at B. The thin transparent bladder or ascus sails through the air with its tiny load and soon splits either at the side or top as at C, and the eight living spores or seeds of Rose mildew, after six months' rest inside, at length sail out. They often germinate as they float about in the air, and such spores as fall on to Rose trees weave a web of mycelium or spawn, and cause the immediate production of Rose mildew in the club, necklaee, or Oidium form first described.

A single germinating spore, enlarged to 1000 diameters is shown at D.

It is obvious from this description that the fungus of Rose mildew is preserved during the winter on decaying Rose foliage, that for every infected Rose leaf that is burnt at least one hundred living spores or seeds will be destroyed at the same time. It is, however, impossible to destroy or deeply bury all infected leaves; but, nevertheless, the more decaying

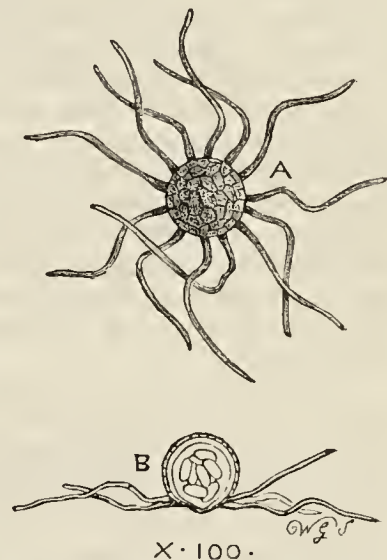


Fig. 81.—Rose Mildew: its autumnal and winter state, enlarged 100 diameters.

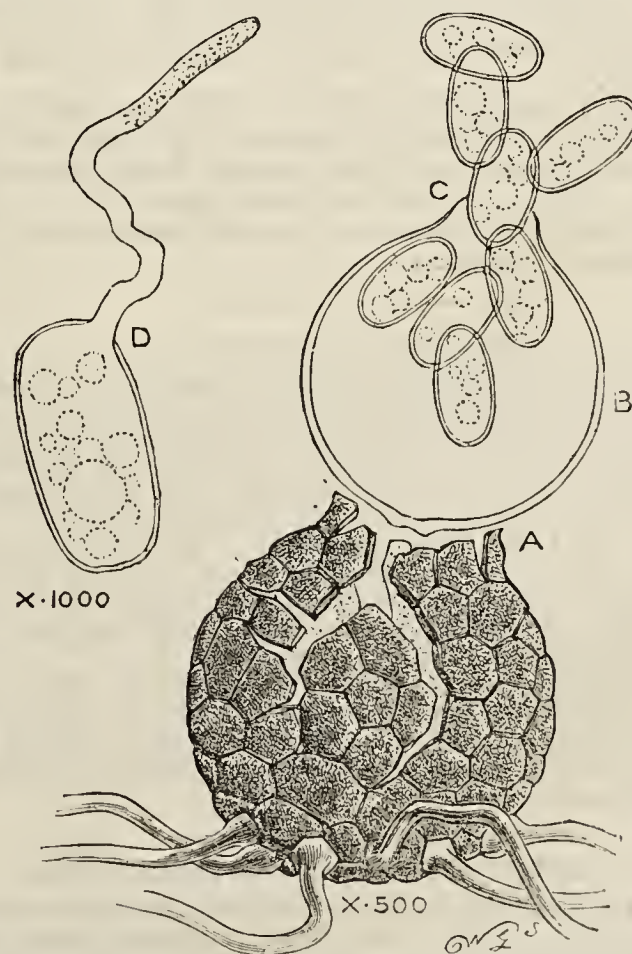


Fig. 82.—Rose Mildew: its ultimate condition, enlarged 500 and 1000 diameters.

material that is either burnt or deeply buried the less spores there must be to invade Roses in the spring.

If all gardeners would agree to one course of clear-headed action the effects of many ailments of plants like Rose mildew would be materially lessened. But if one gardener is intelligent and industrious and another



stupid and lazy, the innocent will always continue to suffer with the guilty.

We believe Rose mildew is almost confined in its attacks to Roses, and this makes the pest easier to grapple with. It has, however, been recorded from the Meadow Sweet (*Spiræa*) and Hop. In other instances, if a mildew is exterminated from one plant it will immediately settle on another, and simply lie in wait until its most approved victim is again open for attack. In the case of Hop mildew, when there are no Hops for the pest to prey upon, the parasite does equally well on Nettles, the Nettle being a close ally of the Hop.

Roses are unusually subject to fungus attacks. There is a *Peronospora* which sets up putrescence in Roses in the style of the Potato fungus on Potatoes; there is the obnoxious orange fungus, *Coleosporium*, and there is the black fungus of the stems, *Dothidea*, as well as many others too numerous to mention on the present occasion.—WORTHINGTON G. SMITH.

### CUTTING DOWN CHRYSANTHEMUMS.

BEING an advocate of the cutting-down system I was pleased to read Mr. Pithers' successful experience in reference to the same; others no doubt, as he suggests, who may have tried it will also record their experience. Plants so treated have a decided advantage over uncut plants—that is, if dwarf well-foliaged specimens are preferred with flowers to be at their best by the end of November. I must admit that the flowers are not so large as from uncut plants, there is not the substance in them, but the form generally is better.

To obtain first-class blooms from cut-down plants requires good cultivation. Something stronger than clear water must be given while the plants are growing as well as after the buds form. The main thing to aim at is stout ripe wood; the flowers will be in proportion to this, and it is ridiculous to expect good results from half-starved plants.

The following varieties were cut down the first week in May—Queen of England, Emily Dale, White and Golden Empress of India, Prince Alfred, Alfred Salter, and Prince of Wales. The flowers from these this year are superior to last year's from plants cut down a fortnight later. The past fine season may have had something to do with this.

The Beverleys, Mr. Bunn, and Refulgence cut down the first week in June have flowered well. The following with me are better cut down early in April; the first two, however, do not require it, as they are naturally dwarf and late enough. Hero of Stoke Newington, Princess Teck (valuable for late flowering), Eve, Mrs. Heales, Jardin des Plantes, Nil Desperandum, John Salter, and Princess of Wales. This last I find most difficult to get good flowers from unless the buds form early.

The only Japanese tried were Elaine, James Salter, Bouquet Fait, Soleil Levant, and Peter the Great, flowers from which were far ahead of others not so treated. Three plants of James Salter carrying a dozen good exhibition flowers each were superior to uncut plants with only three.

If by cutting down such varieties as Comte de Germiny, Mad. C. Audiguier, Simon Delaux, M. Moussillac, M. Tarin, and several others, we could throw them later it would be an advantage, as they come far too early. One thing to guard against is blind centres, for many of them if not allowed to flower in their own line have a tendency to this.—C. WARING.

### BOILING BEETROOT.

My practice in digging Beet has always been never to injure the roots if possible, for fear of their bleeding when boiled; but from what I saw a few days ago in preparing them for the pot this care is not necessary. Going into the scullery the maid was busy washing some roots, with a knife close by, which was soon put to work in cutting off the top and bottom. "Are you going to boil them?" I asked. "Yes," was the reply. But I said "They will bleed." "Oh! no," she answered; "I've found a new way to boil them, and you shall see them when cooked." I did see them, and the colour was all that could be desired. The only difference in cooking is that the Beet is plunged into *boiling* water, and kept boiling till done.

The kinds I usually grow are Dell's Crimson, Frisby's Excelsior, and Egyptian Turnip-rooted. The soil here is a sandy loam, and produces good roots of all kinds. But the cook often used to complain of the Beet being deficient in colour, so I trust the novel way of boiling will rectify this deficiency.—A. A.

### GROS MAROC GRAPE.—PLANTING VINES.

I WISH to supplement the remarks (see p. 409) respecting this excellent Grape, which, in our case, is on a Black Hamburgh stock, and this is the first year of our fruiting it. Both my employer and myself are so thoroughly satisfied with the result that we have decided to grow more of it—to plant several Vines of it next summer on its own roots, though the Hamburgh stock and the treatment are quite congenial to it. But the Vines in the second early house being nearly worn out, I am going to force them hard with a view to removing them as soon as they have

ripened their crop next May or June, when the Grapes will be cut and bottled in the Grape room, and the Vines removed. This done, a section of the old border (about 6 feet wide) will be removed down to the drainage, the latter re-arranged and covered with turves grassy side down, afterwards refilling the space to within 6 inches of the top with a compost, in the proportion of five cartloads of calcareous loam, one load of wood ashes, one load of lime rubble, one load of horse droppings, and about a barrowful of fresh soot, the whole will be turned over a couple of times prior to wheeling it on to the border when dry. The Vines, which in the meantime will be struck from eyes inserted singly in 3-inch pots early in February, together with a like number of eyes of Alnwick Seedling and Madresfield Court, and subsequently shifted and grown in larger-sized pots, will then be planted, loosening the soil and roots a little round the roots with a pointed stick before planting. The soil having been made firm about the roots, and the new border made level with the surface of the old one adjoining, will then have sufficient water given to settle the soil, and afterwards a surface dressing of decayed manure 3 inches thick.

Believing that detailing our future plan of operations in reference to the above Grape, and the circumstances connected with its extended culture, may not be without interest to a few of the many readers of the *Journal of Horticulture*, and may possibly influence some of them in a like direction, must be my apology for digressing from my subject—the Gros Maroc Grape. The bunches of this variety are of medium size; berries large, oval, full of juice, pleasant flavour, and carrying a very heavy bloom. I may state that at the present time we have in our Grape-room a bunch of Gros Maroc Grape that was cut and bottled with others in August last, nice and plump in the berry, and which promises to continue so to the end of the year. This bunch has been left with the special object of testing the keeping quality of this Grape.

The Gros Colman we have on its own roots, and also on the Black Hamburgh stock, and my experience of them thus far is in favour of those on their own roots, as the bunches and berries are not only larger, but also finish more regularly and better than those on the Black Hamburgh stock. Of Alnwick Seedling, like the Gros Maroc, I have no experience of it on its own roots, the one we have being on a Lady Downe's stock, and very satisfactory in every respect as a midseason Grape. Grown in the same house with Lady Downe's Seedling, Gros Colman, Mrs. Pince, Black Alicante, Abercainey Seedling, and Gros Guillaume, the berries were shrivelled early in September. It therefore cannot be looked upon as a late Grape, but as an excellent midseason variety. Gros Guillaume is a grand late Grape. With me it produces bunches freely and keeps well. We have at the present time twelve to eighteen bunches of Gros Guillaume ranging from 6 lbs. to 10 lbs. each, which attract a good deal of attention from visitors to the Castle and Gardens. However, I need scarcely say that bunches ranging from 1½ to 3 lbs. keep far better than larger ones, and that well-ripened bunches—bunches that are thoroughly ripe by the end of September or the middle of October, keep better than badly ripened ones. In short, an adequate supply of hot-water pipes and fuel, together with a free circulation of air, are indispensable elements in the cultivation of late Grapes as well as early ones.—H. W. WARD, Longford Castle.

### ODDS AND ENDS.

OBSERVATION and experience are two means by which we gain our knowledge. "Thinker" confesses that he has neither seen evergreen Peach trees nor had any experience of their culture, and yet he is convinced that autumn lifting is unnecessary where such trees exist. "Thinker's" remarks are very good in reference to root-restriction. We can make narrow borders, but we cannot command the sun to shine, neither can we compel the raincloud to hold its moisture in suspense nor dry the atmosphere. I will mention one case that has come under my notice in reference to autumn-lifting Peach trees where it was purely a matter of £ s. d., and this shall be my last effort to try and convince "Thinker" that in some cases autumn-lifting is necessary. About fifteen years ago a nobleman in this neighbourhood had occasion to let his garden. A most intelligent gardener took it, who had previously been foreman in the same garden, after which he filled a good situation as head gardener. On taking possession he at once commenced to remove every Peach tree from the open walls to every available corner in the numerous little plant houses where he could place a few barrowloads of soil to cover their roots, having learned from experience that upon the open garden walls they were of no use. Fuel being very expensive, no fires were used, and after a few years he found that even under glass with restricted root room they failed to give good returns for his labour. He then resorted to autumn-lifting, with the result that he had fine crops of Peaches for the Dublin market.

For many years I have been reading your valuable Journal with the chief object of gaining information. For several weeks I have been reading what "Non-Believer" and "Thinker" have to say about watering with liquid manure, and I fear that there are many of your readers, with myself, who are as much in the dark about its proper application now as when your correspondents commenced to discuss the matter; for the reason that both "Thinker" and "Non-Believer" have been going to extremes. I would recommend them to neither give liquid manure when the soil is saturated with moisture nor when it is dust-dry, for the reason that there may be waste in both cases.

Your correspondent "S." complains of the bad colouring of Mrs. Pince Grape. Here it colours admirably in a late vinery. Necessity compels us to employ heat rather early in the season, our house being



heated by a flue, which acts as bottom heat to a number of cutting boxes, in which we strike bedding plants with a pane of glass over each box. As soon as our necessary stock of plants is propagated fire heat is discontinued, consequently the Grapes have a long season to ripen, which is, I think, the secret of the well-colouring of the best flavoured late black Grape Mrs. Pince.—W. O., *Fota Island, Cork*.

#### GARDENERS' ROYAL BENEVOLENT INSTITUTION.

WILL you kindly acknowledge through the Journal the following subscriptions collected by myself and my neighbour Mr. Swaine (cashier to the Duke of Devonshire) in aid of the Gardeners' Royal Benevolent Institution Augmentation of Pension Fund? My acknowledgments are due to Mr. Swaine, who is well known to many gardeners, for the valuable help he has rendered in getting this sum together.—OWEN THOMAS, *Chatsworth Gardens, Chesterfield*.

[We have much pleasure in acknowledging the receipt of the list of sixty-eight contributors of £40 19s. 4d., which list has been forwarded to Mr. Cutler, the Secretary of the Institution, and we thank Mr. Thomas and all who have aided him in the laudable endeavour of supporting a fund for so worthy an object.]

#### NOTES ON ORCHIDS.

**LÆLIA ANCEPS.**—Orchids in many gardens are represented by single specimens of many varieties in preference to cultivating several plants of good and useful kinds. The variety under notice is worth growing in quantity, for it flowers with great freedom during the winter months, and is without exception one of the most lovely Orchids in cultivation. It is questionable if any Orchid flowers are more delicate in colour or graceful in appearance, for they are produced on a slender stem about 18 inches in length from the top of the pseudo-bulb. The flowers on each stem are four or five in number, which are fully 3 to 4 inches across. In colour the sepals and petals are rosy-lilac, and the lip deep purple. While in flower, if kept in a cool dry house, the flowers will last in good condition for a month.

This Orchid does well in either pots, pans, baskets, or upon blocks of wood, but in the two latter require more attention in the supply of water. To grow and flower this Orchid successfully it should be exposed to more light and air than many Orchids require, especially as it nears the completion of growth. Strong sunshine only should be kept from it to prevent the browning and disfigurement of its foliage. At the same time every ray of light possible should be admitted. If at all practicable these plants may be suspended from the roof at one end of the house where shade can be applied later in the day and removed earlier than would be necessary for the majority of Orchids. During the season of growth a night temperature of 60° to 65°, according to external conditions, should be maintained, with a rise of 10° by day. A good circulation of air must be provided daily, and while at rest a temperature of 50° is ample, and even 5° lower while in flower will prove beneficial. A liberal supply of water should be given during the season of activity, and a moderately moist atmosphere maintained. While at rest no more water is needed than is sufficient to keep the pseudo-bulbs fresh and plump.

When grown on blocks an addition of a little sphagnum moss only is needed to assist in retaining moisture about their roots. If grown in pots, pans, or baskets liberal drainage should be employed, and the plants potted in fibry peat, with lumps of charcoal freely intermixed with about one-third of sphagnum moss. The charcoal should be used in large pieces, which not only assists in securing perfect drainage, but the roots cling to them. Potting may be done directly the plants have fairly started into growth, and in this operation care should be taken to elevate the plants well above the rim of the pots or pans. Care must be taken that the material about the roots is kept in a perfectly sweet condition, or the plants will soon decline in health and vigour. If the peat used is tough and fibry, and the moss kept towards the surface, so that it can be replaced when growth commences, repotting will not be needed annually. When the peat, however, becomes decomposed it must be very carefully removed, the small particles of soil washed out and fresh supplied. This with care can be accomplished without giving the plants larger pans or baskets.

**LÆLIA AUTUMNALIS.**—This is another charming variety that is worth growing in numbers in any good garden where choice flowers for cutting are in demand. It is one of the most beautiful as well as the most useful Orchid that can be grown, for it flowers during the dull sunless months of winter. Its flowers are larger in size than those of *L. anceps*, and even more striking in colour. The sepals and petals are purple, the lip rose and white, with yellow in the centre. The flowers are produced on a slender stem about 15 inches in length from the top of the pseudo-bulbs, the same as *L. anceps*, but more flowers generally are produced from each spike. The number of flowers on each varies from five to eight, according to the strength and condition of the plants. The flowers under favourable conditions

last about half the length of time of those of the preceding variety. This plant can be successfully grown under the treatment and conditions recommended for *L. anceps*; in fact, if practicable should be given a little lower temperature, say 5°, but this is not of great importance, for it appears to do admirably when subject to the same treatment. It can be grown in pots, pans, baskets, or, better still, upon blocks of wood suspended from the roof. If on the latter a little moss about the roots is all that is needed, but if in baskets peat fibre and charcoal should be used. When grown in either of the latter great care must be taken that the plants do not suffer by an insufficient supply of water during the season of active growth. During rest it should be treated the same as *L. anceps*.—B.



THE WEATHER is now assuming a more wintry character, and the first sharp frost of the season experienced in the neighbourhood of London occurred on Monday and Tuesday last, when the temperature registered in the suburbs varied from 10° to 14° below freezing point.

— THE GOLD MEDAL of the ROYAL SOCIETY has been awarded to Professor Oliver of the Royal Herbarium, Kew, for his botanical investigations and services rendered in the classification of plants.

— CHRYSANTHEMUMS AT SLOUGH.—Mr. Charles Turner has long enjoyed the reputation of doing everything that he undertakes well, and the numerous visitors who have inspected the Royal Nursery during the present month will admit having seen a right royal display of Chrysanthemums. Three thousand plants are flowering there, filling three large houses. Almost every variety in cultivation is represented in a manner that shows its distinct individuality, and the aggregate effect produced by such a large number of admirably grown plants must have been gorgeous when the blooms were fresh. It is striking now, even when many of them are fading.

— IN Messrs. H. Cannell & Sons' Nurseries, Swanley, there are two span-roofed houses, each 100 feet long, filled with WHITE ZONAL PELARGONIUMS, and two of the varieties which are largely represented are of remarkable merit. One of these is the double-flowered *La Cygne*, which was recently certificated by the Royal Horticultural Society. It has neat full blooms, borne in compact trusses, freely produced, and the general habit of the plant is dwarf and sturdy. The other is *Queen of the Belgians*, which is undoubtedly the best single white yet obtained. The blooms are large, of excellent form, pure white, very clear and good, the trusses large and borne well above the foliage, so that they are seen to great advantage. Both will become great favourites with cultivators.

— THE fifty-third ordinary meeting of the ESSEX FIELD CLUB will be held in the great hall of the Loughton Public Hall, Loughton, Essex, on Saturday, November 29th, 1884, at 7 P.M. The following papers, as well as shorter notes, will be read,—1, "A Hint on the Vitality of Seeds," by Joseph Clarke, F.S.A. 2, "First Report on the Denehole Explorations at Hangman's Wood, near Grays, Essex," by T. V. Holmes, F.G.S., and William Cole. The attendance of those interested in the subject of Deneholes and allied relics is particularly requested. The hall will be open at 6.30 P.M. for the convenience of exhibitors. As stated in former circulars, every facility will be afforded to those bringing microscopes and specimens, &c. The hall is only a few minutes' walk from the Loughton railway station, and the usual reduction on return tickets may be claimed at Liverpool Street, Stratford, and Woodford stations.

— RED-SPOTTED POTATOES.—On examining the Potatoes earthed up on the Jensenian plan at Chiswick, many tubers were found to be spotted internally with reddish brown, no symptom of the disease being visible at the surface. A large proportion of certain crops, both in Yorkshire and Norfolk, have this autumn been found to be unsaleable from this cause, in consequence of the impossibility of detecting this disease externally. The Scientific Committee of the Royal Horticultural Society would be glad of any information on this subject, especially as to (1) the amount of crop thus diseased, (2) the character of the soil,



(3) nature and quality of the manure used, (4) whether early or late varieties are most attacked, (5) name of the varieties most affected. The disease appears to be quite distinct from the ordinary "Potato disease," from which it must be carefully distinguished. Communications are requested to be sent to the Rev. G. Henslow, Drayton House, Ealing.

— MR. F. BULL, gardener to C. H. Darby, Esq., Brymbo, Denbigh, sends us some good blooms of Niphetos Roses, also sprays of BOUVARDIA HOGARTH from the stove and the greenhouse to show the difference in the colour of the flowers produced in different temperatures. Those from the greenhouse are of a much richer and brighter shade, but the truss is smaller. A good truss of the double white Bouvardia Alfred Neuner also accompanies these mentioned.

— TEA ROSES IN NOVEMBER.—It should have been stated in the report of the Winchester Show last week that the remarkable Tea Rose there referred to, and for which a certificate of excellence was awarded were exhibited by Mr. Flight. All the blooms except one bunch were gathered from the open garden on the 17th inst.

— THE TOBACCO PLANTATIONS OF SOUTHERN HUNGARY are threatened by a terrible pest—viz., the so-called wireworm, which differs from the ordinary Tobacco worm, inasmuch as it enters the stem of the plant just above the root, and then works its destructive way right up to the flowers. Plants thus attacked yield no Tobacco whatever, as the leaves turn yellow and fall shortly after the worm has attacked the stem. The Tobacco worm merely attacks the root. The large plantations of Maslak, which are celebrated for their excellent produce, have been nearly all destroyed this year by the wireworm, while in other districts the Tobacco worm has done much damage.—(Nature.)

— A CORRESPONDENT writes:—"Without detracting one iota from the merits of the other successful exhibitors of Chrysanthemums mentioned in the Journal, I think the achievements of MR. C. GIBSON, gardener to J. Wormald, Esq., Morden Park, Mitcham, worth recording. We know what a strain it is to most exhibitors to stage one stand of forty-eight good exhibition blooms, distinct. It is more difficult to get a second forty-eight at the same time, and more difficult still to get a third forty-eight, and there are but very few growers could cut a fourth forty-eight—all, we might say, simultaneously. This Mr. Gibson has done, running a very close second for two of the most valuable prizes offered in this country for cut blooms, and winning the other two on the same days—viz., Croydon and Brighton. He is a good cultivator, very unassuming, very pleased of course to win, but one of the best losers I ever met with." [We have admired the exhibits referred to, and congratulate Mr. Gibson on his great and meritorious achievement.]

— OWING to the great pressure on our space several reports of CHRYSANTHEMUM SHOWS which arrived late have had to be considerably reduced, and we can only give them brief mention in the following notes:—

— THE CHELMSFORD EXHIBITION OF CHRYSANTHEMUMS, held on Wednesday, the 19th inst., in the Corn Exchange of that town, proved a great success, a large number of competitors entering and staging good plants and blooms. The groups of Chrysanthemums were especially good, Messrs. Saltmarsh & Son taking the chief prize for a well-arranged and excellent collection. Mr. T. Harris of Chelmsford showed an admirable group of fine-foliage plants, and several other contributors added much to the beauty of this portion of the Show. The cut blooms were generally good, and the competition was very keen, particularly with twelve incurved and six incurved, of which a dozen and fourteen stands respectively were shown. Remarkably fine were the six blooms of Madame C. Audiguier from Mr. H. Lister, gardener to Lord Brooke, Easton Lodge, Dunmow, for which he gained the first prize in a large class; and fine as this variety has been shown this season, Mr. Lister's blooms have scarcely been excelled. Other exhibitors were Messrs. Brazier, Tunbridge, and W. Dance. Fruits were well represented, Apples and Pears being largely shown, Messrs. Gadd and Lister taking the leading prizes.

— THE BRIXTON HILL AND STREATHAM CHRYSANTHEMUM SOCIETY'S EXHIBITION this year was superior to any that had been held before. The competition in both the cut-bloom and plant classes was keen, and a most interesting display was provided. Specimen plants are always good here, and the chief prizes were secured by Mr. Cherry, gardener to Mrs. Gabriel, Streatham; Mr. W. Clarke, gardener to T. Bass, Esq., Roupell Park; and Mr. Weston, gardener to D. Martineau, Esq. Cut blooms

were grand throughout, and for twenty-four Japanese, distinct, there were nine collections staged. The post of honour was secured by Mr. C. J. Salter, gardener to J. Southgate, Esq., Streatham. Mr. Green, gardener to H. Russell, Esq., Clapham Common, was a close second, and Mr. Glide, gardener to J. Wilson, Esq., Upper Tooting, was a very good third. Almost as many collections represented the class for twenty-four cut blooms, incurved, and at the head Mr. Salter was again placed first with grand examples. Stove and greenhouse plants and Orchids, together with fruit and vegetables, helped to make a most interesting display, which required a larger building.

— THE NORTHAMPTON SHOW was held on November 19th and 20th, and surpassed any of its thirteen predecessors both in quality and quantity of exhibits, and the general arrangements gave every satisfaction. The plants were arranged around the sides of the Corn Exchange, while on long tables the cut flowers, Primulas, &c., were arranged. For six large-flowering Chrysanthemums, incurved, Mr. Rollings, gardener to the Rev. A. A. Longhurst, Abingdon Rectory, was an excellent first; his plants were neatly trained and well furnished with healthy foliage and good flowers. Mr. Gwilliam, gardener to Mrs. Sheppard, Billing Road, Northampton, was placed second; and Mr. Rowe, Sheep Street, third, both exhibiting very creditable collections. In other plant classes Messrs. Manning, Lower Mount; L. Spencer, Lower Thrift Street; Mr. R. Sear, Cowper Street; Mr. F. Dawson, gardener to Mr. R. Turner, Cliftonville; and Mr. Oram, gardener to Mrs. Whitworth, Dallington House, were the prizetakers. Cut blooms were very numerous exhibited, and the premier position for twenty-four incurved fell to Mr. Berry, gardener to the Countess of Levin and Melville, Roehampton, who had well-finished flowers. Japanese were good, and formed a most interesting feature. For eighteen distinct, open, there were about a dozen collections staged, first honours being secured by Mr. Berry. In the class for twelve, distinct, Mr. Miller secured the first prize with fine blooms. Vegetables and miscellaneous exhibits added much to the beauty of the Show.

— THE GRAVESEND AND NORTH KENT CHRYSANTHEMUM ASSOCIATION held their eleventh annual Show at the Milton Hall, Gravesend, on November 12th and 13th. It was a great success in every way, the competition in all the classes being remarkably keen. Owing to the fine weather and great attractions of the Show, the attendance far surpassed any previous occasion. One great feature of the Show was the splendid display of cut blooms exhibited by Mr. R. Phillips, gardener to Dr. Baker, The Deodars, Meopham, who repeated his successes of last year by carrying off nearly all the first prizes with magnificent specimens. These were greatly admired, and it is rather a singular coincidence that Mr. Phillips should have taken exactly the same number of prizes (thirteen), on this occasion, as he did at the same Show last year. Mr. Etherington of Manor House, Swanscombe, closely followed the first prizetaker with good even blooms of Japanese and incurved varieties. Another great centre of attraction was the table decorations, and here again Mr. Phillips took first prize; Mr. Richardson, gardener to Sir James Ferguson, being a very good second. There was also an excellent display of fruit and vegetables, and with the former Mr. Phillips was again to the fore, the second prize going to Mr. Richardson. The specimen plants were simply grand in foliage and flower, both in the gardener and amateur classes. The Committee and Mr. Fairey, the Secretary, worked very hard, and they are to be congratulated on carrying out the arrangements in such a satisfactory manner.

— IN a brief note respecting the BIRMINGHAM CHRYSANTHEMUM SHOW in our last issue, Mr. Comfort, Knowle Hall Gardens, received the credit of taking third prize in the large class for forty-eight cut blooms. We learn that Mr. G. Neal, gardener to P. Southby, Esq., Bampton, Oxon, was third, and Mr. Comfort fourth.

— THE SHEFFIELD SHOW was held on November 24th and 25th, in the Cutler's Hall, Sheffield. It is limited to members of the Gardeners' Mutual Improvement Association, consequently, viewed as a Chrysanthemum show, it is in no way equal, either in the quantity or quality of plants and flowers exhibited, to the Show held in Chesterfield. What was lacking in Chrysanthemums was to a great extent, however, made up by the miscellaneous exhibits. Splendid groups of foliage and flowering plants were lent by each of the local nurserymen, conspicuous amongst which were those from Messrs. Fisher, Son, & Sibray, Hands-worth Nurseries; B. Crossland, Richmond; Hirman Shaw, Richmond and S. W. Seagrave, Gleadless. Primulas were remarkably good, and



contributed in large numbers, the principal prizetakers in this section being Mr. T. Marsden, gardener to F. Hobson, Esq., and Mr. W. Stimpson, gardener to — Craven, Esq. In cut blooms of Chrysanthemums, the first prize for twenty-four incurved was secured by Mr. T. Prouting, gardener to Mrs. Howson, with neat but very small blooms. Second, Mr. J. Thomas, gardener to W. C. Leng, Esq., with very similar blooms. For twelve incurved the first and second prizes were taken by the same exhibitors, but in this case Mr. J. Thomas was placed first. The finest blooms in the Show were exhibited by Mr. T. Brewer, gardener to W. Colver, Esq., who obtained the first prize for six and three, and for premier bloom in both incurved and Japanese classes. The specimen plants were generally of very inferior quality, and with the exception of those exhibited by Mr. E. Austin, gardener to J. H. Allcard, Esq., unworthy of comment. During Monday, the first day of the Show, a considerable number of people paid for admission, so that the Committee believed the financial success was assured, consequently we may hope they will in future shows adopt a more open and liberal policy.

—“L.” writes—“Mr. Davis of Camberwell has a new JAPANESE CHRYSANTHEMUM named HERO of MIDLOTHIAN, which appears distinct, and likely to be a useful variety. It is a seedling which, I believe, has flowered this season for the first time, the several blooms it has produced being of good size and substance and excellent colour. The florets are broad and flat, something of the L'Africaine style, but of a much brighter and more pleasing shade of reddish crimson. It certainly seems to be better entitled to the designation ‘Crimson Elaine’ than that variety.”

#### THE LEEK ROSE SOCIETY AND GUMMING ROSES.

I HAVE read a “Puzzled Inquirer’s” questions several times, but I fail to see that these questions have anything to do with the present disagreeable subject. I know nothing of Leek or its Rose Society, and even supposing all “Puzzled Inquirer’s” questions are answered in the affirmative I cannot see that it would make gumming Roses legitimate. The antecedents of the Leek Rose Society have nothing to do with the matter, unless it be so far as this, that if all these doings now charged against the Society and its Hon. Secretary were known to the officials of the National Rose Society it is much to be regretted that the latter did not on that score alone decline to have such a Society affiliated. By affiliation any known offences seem to me condoned, and the affiliated Society had every right to feel that in submitting any point to the parent Society it would receive careful consideration at their hands; and seeing that one rule of the Leek Society was that Roses should be exhibited as “cut from the plant,” what can this mean but that attempts at deception were to be punished? I am not saying that this careful consideration was not given, but I think many Rose exhibitors will, like myself, fail to see the justice of the late decision, judging the case by such documents as have seen the light.

Further, supposing all the doings in question are justly laid at the door of the Leek Society, if they have seen the error of their ways and desire now to act uprightly, it is rather hard to retaliate by raking up the past. The convert is, as a rule, zealous, and how could they better show they were in earnest in their endeavour than by taking action on the first delinquent?—JOSEPH HINTON.

#### SEAWEED DECORATIONS.

AT the Show of Chrysanthemums held in Lindfield was an exhibit which attracted much attention. A table was decorated with seaweeds, corals, &c., and was considered to be specially suitable for yachts and vessels at sea, where flowers cannot be obtained. In the centre of this table was a very elegant glass epergne, filled with the light seaweeds gracefully hanging down. Four dishes were filled with fruits made of corals, shells, and seaweeds. These were enclosed by sprays of seaweed laid round the table. The specimen glasses were filled with light sprays of seaweeds, the salt-cellsars consisting of shells tastefully ornamented. This novel way of using seaweeds, &c., was first introduced (so I am informed) by Mr. M. Smout of Hastings about four years ago. On the table were several shells similar to the one I have sent you. Sprays of the article were being freely sold for buttonholes and ladies’ hats. I think these ornaments would be very useful in large establishments where a change of decorations is wanted occasionally. I should like to know your opinion of the enclosed shell.—A. J. BROWN.

[The shell with the attached seaweeds is charmingly beautiful, and admirably adapted for table decoration. It is surprising these seaweed decorations are not exhibited at the London and Crystal Palace Shows.]

#### GILBERT’S UNIVERSAL SAVOY.

A WINTER vegetable as succulent and delicately flavoured as Green Peas, of easy culture, and perfectly hardy, had long, or rather had always been wanted, till Mr. Gilbert gave us his Chou de Burghley, and I must own that when I first tasted it and felt conviction stealing upon me that in it we undoubtedly had a vegetable quite worthy to rank as

high in general estimation as the best dish of Champion of England Pea that ever was cooked, I was sensible of a doubt of the possibility that so delicious a vegetable would prove really hardy. That doubt has long been set at rest, and I now regard Chou de Burghley as chief of all green vegetables in winter, and of which an abundant supply is quite indispensable. But we are not to depend upon it alone, for in Gilbert’s Universal Savoy we have another winter vegetable equally delicate in flavour, with as compact and firm a heart as any other sort of Savoy. Nothing among vegetables could be more delicious than a couple of it which Mr. Gilbert recently sent me to taste, and I confidently predict that the old race of Savoys will soon be a thing of the past. It is hardly possible to estimate correctly how great a boon this new race of hardy winter vegetables must prove to all gardeners, but especially to those to whom the maintenance of a steady supply of forced vegetables is a difficult, often an impossible matter.—EDWARD LUCKHURST.

#### MRS. PINCE GRAPE.

AT page 460 “J. J.” says, “I do not think the day far distant when it (Mrs. Pince) will take the place of Lady Downe’s.” As a grower of both varieties in question I venture to give my experience. Our Vines are strong, healthy, and about fifteen years old. When I took charge of them six years ago I found the Vines in two large span-roofed vineries were badly infested with what I believe is commonly called the kidney fungus, at any rate there was not a bunch of Grapes fit for use; it was in the middle of June too. The Hamburgs were foxy; the Muscats, Lady Downe’s, and Mrs. Pince, Gros Colman, Madresfield Court, and I forget how many more varieties, were all alike spotted and shanked to the extent indicated.

Being a young hand I hardly knew what to do, but soon came to the conclusion that I would lift and replant all of them—a hard task, too, thought I—and keep up a supply. However, in four years I had gone from one end of the range to the other, and lifted every Vine, replanted them in good stiff loam and brick rubbish while the leaves were on them, and I am proud to say I can now show two houses of as good Vines as anyone could wish to see.

Mrs. Pince is as well coloured as need be, carrying a beautiful bloom on fine well-shaped bunches, but that “the day is not far distant when it will take the place of Lady Downe’s” as a late keeper I very much doubt. May I ask “J. J.” if he has ever tried the plan of keeping a little air on at all seasons for the good of her ladyship’s health? If not, I can assure him that a piece of hexagon netting tacked over his ventilators will enable him to leave them open a little at all times; and if the roots of his Vines are in good condition there will be no difficulty in preventing the so-called scaling, to which this grandest of all late Grapes is so liable.—TITCH.

#### THE INSECT ENEMIES OF OUR GARDEN CROPS.

##### THE POTATO.

THOSE books in which the culture of the Potato is fully described furnish us with a formidable list of its insect enemies, and it is a fact patent to every gardener that the plant itself and its tubers offer attractions to a variety of species, some of which, however, are unseen during some seasons, and others occur in too small numbers usually to occasion material damage. All these foes of the Potato, or nearly all, have passed into comparative insignificance since the appearance of that terrible plague of our crops, the Potato murrain. Careful and repeated observations, made by men of acknowledged skill, attribute this to the spread of a fungus called *Peronospora infestans*, though probably this is not the sole pest, but the leading one amongst several of vegetable nature. For a good while after the first outbreak of this mysterious malady many persons believed and asserted that insects had something to do with it, if they were not its direct cause. The genus *Aphis* was more particularly under reproach. As we shall show hereafter there is no connection between the fungus and the insect suspected. This only can be said, that any severe insect attacks, by their weakening effect upon the plant, might render it likely to become the victim of the former. The Potato has the repute of furnishing the favourite food of the caterpillar of our largest native moth—our largest insect indeed, the death’s head sphinx (*Acherontia Atropos*) also rather singularly, but not unreasonably, called the “bee tiger.” We introduce it here because it has long had the prominent place amongst the insects of the Potato, owing to its size and peculiarities, but this caterpillar is seldom plentiful enough to be harmful. Of course each individual consumes a large number of leaves during its progress from the egg to maturity. Besides the Potato, it feeds upon the common Nightshade of our hedges, now and then on Privet or the Tea Tree (*Lycium barbarum*) and not unfrequently upon one of the Jessamines. One circumstance in its history seems to act as a check upon its increase. What might be styled the proper season for the emergence of the moths is June or July, the eggs then laid produce caterpillars that feed through August and September. But the late Edward Newman discovered that mostly a part of



each brood leaves the chrysalis in October, or even later, and the females amongst them are invariably barren. This insect has rich brown wings, finely mottled and banded in lighter tints. The skull-like markings on the thorax at once distinguish it from every other species, and they have been the origin of much superstitious remark. It differs also from the rest of the sphinx moths in having a very short proboscis or tongue, therefore it cannot obtain honey as they do, which explains one penchant of the species that has excited a good deal of interest. Improbable as it may appear (and hence the supposed fiction was for some time denounced by many naturalists) the death's head moth or bee tiger enters the hives of bees for the sake of regaling itself upon the honey they store. This, however, happens chiefly in South Europe, where the moth is commoner, and the construction of the old-fashioned hives favours these intrusions.

Occasionally the caterpillar of the death's head moth has been found feeding upon the leaves by day, but its wont is to enter the earth after sunrise, or to repose on the surface hidden by the lower leaves, resuming its operation of eating at or about twilight. It is seldom seen while young. The specimens that are now and then obtained by entomologists from farm labourers are generally almost full-grown, these having, perhaps, been discovered during the operation of digging. In some counties the creature is popularly known as a "lokus," science and spelling being both at fault. The uneducated mind may be excused for entertaining apprehensions of this caterpillar, for it is 4, or even 5 inches long when full grown, and bears upon the hinder part of the body a peculiar tubercled horn. In colour it is variable, but mostly yellowish, dotted over with numerous black points, and the sides of the body have each a series of seven blue stripes, which meet upon the back. When annoyed or irritated this caterpillar is said to have the power of producing a sound—quite an exceptional circumstance amongst caterpillars—which has been compared to the snap of an electric spark. The moth also has often been observed to squeak; its sound is like a cry, loud, shrill, and plaintive. How it is produced, or that made by the caterpillar, is rather uncertain. Should it be suspected, from the aspect of a Potato field, that these large caterpillars have attacked the leaves, the rows must be searched on a moonlight night, or by the aid of lamp or lantern, when the insects may be taken and destroyed, if not sent to some entomologist.

In the southern and western suburbs of London I have frequently taken the moth called the small or common swift (*Hepialus lupulinus*) generally about gardens. Its appellation is expressive of its mode of flight, and in consequence of this, or perhaps owing to the attractiveness of the odour, it is a species that at the season when the moths are on the wing, may be discovered adhering by scores to the surface of freshly tarred palings. But I think they are less sensible to the fascinations of light than are many of their brethren, and quick as they fly, it is not difficult to net them when the eye has got used to watch them at dusk on a June evening. The sexes are somewhat different, the female being nearly all brown, the male darker brown, with shades of grey and white spots. The caterpillar of this species feeds upon the roots of plants from the autumn until April or May. There appears to be no good reason for the Latin specific name attaching it to the Hop. It lies hid at the roots of the species of *Lamium* not uncommonly, and in gardens it is frequently found to prefer the Potato to other plants. It is about an inch long when adult, of a dull white, with a brown head, and a hard plate behind the head of the same colour. This is a caterpillar possessed of stronger vitality than the underground feeders belonging to the *Noctua* tribe of moths; doubtless watering with a weak solution of paraffin or lime water, and applying soot or gas lime to the surface, would be of some use where a garden crop of Potatoes seemed to be infested by the species, which is less likely to occur upon field crops, I fancy. The roots of the Potato chiefly, not the tubers, are eaten by it, which makes it more injurious, yet hardly "very destructive," as one author calls this common swift, since, though common, it is seldom found in profusion anywhere.

The caterpillar of the Heart-and-Dart (*Agrotis exclamatoris*) is found upon the Potato both in fields and gardens. Sometimes it will be detected just under the earth feeding upon the stem of the plant or its crown, at other times the tubers are the object of its attack. It would probably be its habit to feed upon the green parts of the Potato during the early part of the summer, and afterwards to go deeper. The late Potatoes would obviously suffer more than those dug in June and July, for this caterpillar continues to feed underground till September, or even October. Then the chrysalis state is entered, which lasts through the winter, hence by turning the ground well over at that season the insects are not usually brought to the surface, and many wild birds will devour them, as also will poultry if they have oppor-

tunity. The brownish fleshy caterpillar, much like that of the Turnip grub (*A. Segetum*) also eats the Turnip and Swede, slices of Potato stuck in the earth being used as traps by gardeners when these are affected. Probably its attacks upon this plant are often ascribed to other enemies of the tubers, which are numerous and of varied habit. And in the genus *Agrotis* there are several species beside the above which have subterranean caterpillars, whose tastes lead them to devour sundry roots of our gardens, and the Potato is occasionally selected by them.—  
ENTOMOLOGIST.

#### PRUNING ROSES IN AUTUMN.

In many instances inexperienced growers whose Roses have made shoots 4 feet and 5 feet in length during the summer and autumn are tempted to cut them back with the view of making them look tidy during the winter. Others have an impression that when the wood has been formed and matured the sooner it is pruned the better; but all pruning in autumn is a mistake, and should never be done. Its injurious effects may not be seen immediately, but in the majority of cases they will become disagreeably visible before the summer. We have rarely known long uncut well-ripened Rose shoots injured by the severity of any ordinary winter, but when they were cut in autumn we have frequently seen them die back a considerable way from the cut part in passing through a winter of no uncommon severity, while intense frosts and bad weather killed many of them. Again, it is well known that the buds at the tops of Rose shoots always start into growth first in spring, and when the weather is mild in February the young shoots on the tops of the branches may become some inches in length; but the keen winds experienced as a rule in March destroy these to such an extent that all chance of their becoming useful ends. It is after this that the great advantage of being able to cut back the growths until sound plump buds are reached gladdens the cultivator; but with autumn-pruned plants no benefits of this kind can be experienced, as they are cut in until only a few buds remain, which may be induced to start prematurely in spring, when they are killed. If not quite killed these early growths are almost certain to be checked, and fail to become so strong or bloom so freely as later growths.

We would rather see our Rose buds quite dormant about the beginning of March than the young shoots several inches in length in April and May would be free and vigorous, and this can only be properly managed by entirely avoiding autumn pruning. Some growths may be so long and straggling now that to allow them to remain so might injure the roots of the plant through them being twisted by the wind, and in such cases firm staking and tying is best, or if cutting must be done the shoots should only be shortened back without going so deeply into the wood as to call it pruning.—M. M.

#### SALVIA GESNERÆFLORA.

EVERY autumn for I cannot remember how many years past I have had the pleasure of potting up from the open ground immense pyramids of this fine *Salvia*. My lot has fallen in a place where not only a full display of flowering plants are required, but where scarlet is expected to be the prevailing colour. Now, it is not an easy matter to set a conservatory ablaze with scarlet during the winter and early spring months, but the plants which above all others are capable of producing it are *Salvias*. Scarlet and white are the most effective colours for winter. Both by daylight or gaslight they are alike striking, and if the flowers can be had in elegant sprays they are doubly useful for many purposes of decoration and in giving relief to the formal masses of *Camellias*, *Azaleas*, &c. For affording floriferous sprays of these colours my staple plants have long been *Deutzias* and *Salvias*.

*Salvia fulgens* is now in full beauty, and will continue until the end of December. *S. splendens* will continue until February, and by that time the handsome pillars of *S. gesneræflora* will be in their zenith of beauty, lasting until April. But while all of the trio are useful, the one last named is the greatest and the best.

Very commonly are these plants grown in pots throughout the summer, but by that mode of culture it is almost impossible to bring out their full beauty. By an occasional want of water or an insufficient amount of food the foliage loses its rich green tint, and the plants are deprived of half their attractions. By planting out in deep rich ground in May and affording occasional supplies of liquid manure, every leaf is preserved of a full deep green, and the spikes are produced twice the size of those from plants which have been grown in pots.

By striking the cuttings in March, growing carefully on until May, shifting in larger pots as required, and subsequently planting-out, I have had no difficulty in growing plants 7 feet in height and 3 feet through near the ground, and tapering—as they will do without any pinching—to a point. Such plants from February to April have few equals for conservatory and corridor decoration, and their cut sprays are ever in request.



If this simple mode of culture was generally adopted this fine plant would be seen everywhere where large plants of bright flowers can be grown, but unfortunately it is rarely met with, and then only in a half-starved state.

Many gardeners do not know the plant, and not a few confound it with *S. fulgens*. It is, however, altogether more robust than the last-

sure and convenient method of transmission—two dozen bulbs. He has drawn my attention to them, and as mine have also arrived, I conclude the customary first consignment direct from Japan must have reached London. I have been getting some for many years, and never remember to have seen sounder, heavier, or finer *L. auratum* bulbs. How to treat them at once is a primary consideration. The method I have found most successful in inducing them to emit roots is to plunge in cocoa-nut



Fig. 83.—*SALVIA GESNERÆFLORA*.

named species, having larger cordate-ovate leaves, with an acuminate point, *a*; the leaves of *S. fulgens* being much narrower, elongate-ovate, *b*. The flowers grow in whorled panicles of a brilliant light scarlet colour, and are much larger than those of *S. fulgens*. *Salvia gesneræflora* was introduced from Central America in 1840.

This brief record of practice is the best reply I can give to the correspondents who are seeking information on this exceedingly useful and easily cultivated plant.—EX-EXHIBITOR.

TREATMENT OF IMPORTED *LILIUM AURATUM*.—A friend of mine who gave his order some time ago has just received per parcel post—a very

fibre, and when roots begin to show pot up, but not before. Any good rich compost, with or without peat, succeeds with me. Too much moisture now is to be avoided.—W. J. M., *Clonmel*.

#### JUDGING TOMATOES.

I DO not wish to argue the question with Mr. Iggulden whether or not "Tomatoes are chiefly cultivated for culinary purposes," because it is not particularly relevant to the question at issue. I would, however, just say that perhaps a visit to Crosse & Blackwell's and other large sauce manufactories might tend to modify his opinion. In respect to the relative flavour of outdoor and indoor Tomatoes I can only say that with me this year the former were the more preferable. In reply to Mr.



Iggulden's question whether "when judging culinary Apples I would take the exhibitor's word as to the value of any culinary Apple with which I was not acquainted," I would answer No. In this respect I would prefer to exercise my own judgment. I should, therefore, feel inclined to pass them over, as he suggests, in favour of some equally good-looking and well-known sorts; and I would do precisely similar in judging Tomatoes, because, like culinary Apples, I find that sometimes the worst flavoured when raw are the best when cooked. At the same time I see no special objection to our dessert tables being embellished with the more beautiful and best flavoured varieties of Tomatoes, nor that the collections of fruit at our exhibitions should not be enlivened with the same varieties; while the larger and best culinary varieties I would, as hitherto, place in the collections of vegetables. By this means Mr. Iggulden's excellent suggestion would not only be acted upon, but I believe every dyspeptic subject, of which there are not a few, would set a high value on his efforts to popularise this beautiful and wholesome fruit. I have less scruples in writing this now, as I have just been informed by a gentleman recently returned from Canada, that there every person eats Tomatoes with the same zest and frequency as we do Apples or Oranges in this country.—T. CHALLIS.

## CHRYSANTHEMUM SHOWS.

YEovil, November 18th.

THIS, for a first attempt, must be chronicled as a decided success, being in fact an agreeable surprise to all interested. The idea of holding a show was first conceived by Mr. Tite of Fairview, Yeovil, and this gentleman planned the schedule, provided the prizes, and incurred the various incidental expenses entirely at his own risk. Several well-wishers lent him material assistance in arranging the Exhibition, but to Mr. Tite belongs the credit of what in every respect proved a most interesting and successful experiment. Next season it is proposed to offer very liberal prizes, more especially for cut blooms, and this, coupled with the convenient or central position of Yeovil, should result in the attraction of one of the best all-round displays in the west of England.

There were no trained plants staged, neither is this to be regretted, but there were a considerable number of fairly well grown conservatory plants. The best represented sorts were Fair Maid of Guernsey, Hiver Fleuri, Dr. Masters, Golden Eagle, Ethel, Guernsey Nugget, White Globe, Mrs. Rundle, and Julie Lagravère, and the most successful exhibitors were Mr. Crossman, gardener to J. Bruton, Esq.; Mr. W. Pollard, gardener to H. B. Batten, Esq.; Mr. R. Gillingham, gardener to R. Phelps, Esq.; Mr. L. Russel, gardener to Major Aldworth; Mr. T. Hannan, gardener to J. E. Whitby, Esq.; and J. Bowles, gardener to J. R. P. Godden, Esq. There were several classes provided for miscellaneous plants, and in some cases the exhibits were highly meritorious. Table plants were well shown by Messrs. W. Appleby, gardener to T. W. D. Bide, Esq.; and W. Pollard, the latter having some remarkably well-flowered Gloxinias; Solanums by Messrs. W. Pollard and J. H. Cop, gardener to J. S. W. Erle Drax, Esq.; Primulas by T. Hannan, and G. Gillingham; and Cyclamens by Mr. W. Pollard. A considerable number of healthy fine-foliage and flowering plants were lent by Mr. R. B. Davis, nurseryman, Yeovil, and other gentlemen kindly sent plants, all of which contributed materially to the general effect.

Cut blooms were staged in great numbers, and in most cases the winning stands were fresh and good. Mr. W. Thomas, gardener to W. Marshall, Esq., Taunton, was the most successful exhibitor in the various classes, his blooms of such incurved varieties as Miss M. Morgan, Snowball (Empress of India), Princess of Wales, Bendigo, Jardin des Plantes, and Princess Imperial being particularly good, as also were the blooms of Japanese Oracle, Meg Merrilees, Daimio, Yellow Dragon, Madame C. Audiguier, Comte de Germiny, Rubrum Striatum, Fair Maid of Guernsey, Album Plenum, and Madame Berthie Rendatler. Other prizewinners in these classes were Messrs. J. Davey, gardener to J. Carver, Esq.; S. Tottle; A. Collard, gardener to T. Starkey, Esq.; W. Gallop, gardener to H. N. Middleton, Esq.; J. Mundell, gardener to R. Thornton, Esq., Dorchester; T. D. Davis, Sherborne, and J. Dibben. A considerable number of fairly good cut blooms were staged, not for competition, by Mr. W. G. Pragnell, Sherborne Castle, and two stands of blooms were sent by Mr. J. Wright, of the Middle Temple Gardens, London. The latter included a yellow sport from Salterii, Boule d'Or, Comte de Germiny, Mons. Lemoine, Roseum Superbum, Mons. Desbrieux, Meg Merrilees, Empress of India, Golden Empress of India, and Princess Imperial.

There was quite a grand display of fruit, notably Grapes and Apples. In the class for two bunches of any black Grape Mr. E. Biggs, gardener to General Henning, C.B., Dorchester, was an easy first with exceptionally fine examples of Black Alicante, and this exhibitor was also highly commended for two very fine bunches of Mrs. Pince. The second prize was won by Mr. G. Daley, gardener to T. T. Walton, Esq., Wincanton, with well-finished Black Alicante, and ten other exhibitors had creditable exhibits. White Grapes were not so good. Mr. Crossman was first and Mr. W. Gallop second, both having fairly good Muscat of Alexandria, the third prize going to Mr. H. Kelley, gardener to G. T. Bullock, Esq., for Foster's Seedling. There were thirty lots of three varieties of dessert Apples, and among these were many very highly coloured and well selected examples of the best known sorts. Mr. J. Davey was first with perfect examples of Cox's Orange Pippin, Mother Apple, and Ribston Pippin; and Mr. A. Tucker, gardener to Captain Winter, was a good second with excellent fruit of Claygate Pearman, King of Pippins, and Ribston Pippin. Many good dishes of Pears were shown, Mr. Tucker being first with very fine Beurré Clairgeau. Mr. Parsons second, with Beurré Diel, also very fine. The stewing Pears were remarkably large. Mr. W. Parsons was first and Mr. Tucker second, both showing Uvedale's St. Germain. Mr. Pragnell staged twenty good dishes of Apples not for competition, and Messrs. John Scott and Co., Merriott Nurseries, also staged upwards of 150 varieties of Apples, some of the best of which were Alfriston, Royal Somerset, Reinette de Canaia, Merriott Pippin, Tom Putt, Dorset Red Streak, Annie Elizabeth, Golden

Winter Pearmain, Piles' Russet, New Hawthornden, Beauty of Kent, and Cox's Orange Pippin.

There were classes provided for salading and Tomatoes, and in both cases the competition was very keen. With the former Mr. C. Bowers, gardener to T. Holford, Esq., was a good first, and Mr. Crossman second, Mr. J. Bowles being highly commended. There were twenty exhibitors of Tomatoes, Mr. J. Davey with a good dish of Dedham Favourite, Mr. J. H. Copps being second with Hathaway's Excelsior, also very fine. Mushrooms were well shown by Messrs. R. Thornton and J. Diment, gardener to R. B. Peren, Esq. Mr. Pragnell also exhibited a very fine group of vegetables not for competition. They were arranged on a large mound at one end of the hall, and this attractive display included perfect examples of Veitch's Cauliflowers, large Spanish Cardoons, Nantes and Intermediate Carrots, Maltese Parsnips, Pragnell's Exhibition Beet, Lion Leeks, Sherborne Improved Spanish Onions, and various other vegetables, all in his well-known form.

MANCHESTER.—NOVEMBER 18TH AND 19TH.

UNDER the auspices of the Manchester Botanical and Horticultural Society the above Show was held in the Town Hall, when a much better display was provided than upon any other previous occasion. This may be accounted for in various ways, but that which seems most likely is the growing popularity of the Chrysanthemum, so that, although Manchester could not boast of such a display as was made the two following days at Birmingham, yet the promoters have every reason to be proud of the result of their efforts, and we have no doubt that public appreciation was liberal enough to make the balance on the right side when the Exhibition closed. Besides the full classes of Chrysanthemums, there were others provided for winter-flowering and forced plants, which augmented and well supplemented the main feature, while the various attractive groups staged by non-competitors added greatly to the charms of the display. The Chrysanthemums in pots had been well grown for the most part, as they were dwarf, and although the flowers were not numerous, yet they were of good size and finish, on which account the numbers of flowers were ample to constitute in many instances really excellent plants. Below is detailed the most important classes and the successful competitors.

*Cut Blooms.*—For twenty-four blooms, large-flowered, distinct, in which there were three competitors, but the first award was given to Mr. G. G. Kertin, gardener to John Allen, Esq., Altrincham, whose flowers were well finished and set up as follows:—Back row.—Hero of Stoke Newington, Golden Empress, Nil Desperandum, Empress of India, Mr. Cullingford, Lord Alcester, Lord Wolseley, and Lady H. St. Clair. Middle row.—Guernsey Nugget, Lady Harding, Mr. Brunlees, Baron Beust, Princess of Teck, Barbara, Beauty, and John Salter. Front row.—Eve, Mr. Harding, Beverley, Venus, Mrs. Heale, Pink Perfection, Madame Madeline Tezier, and Mabel Ward; the blooms of this group, and indeed of the Exhibition, were Mrs. Heale, Lord Alcester, and Golden Empress. Mr. H. Rose, gardener to D. McClure, Esq., Heaton Nursery, was second, and Messrs. W. Clibran & Sons, Altrincham, third. Mr. Rose's collection was good, the following kinds being especially so:—White Beverley, Mrs. Haliburton, and Jardin des Plantes. In the corresponding class for twelve blooms Messrs. W. Clibran & Sons were placed first with a good stand, while the second and third positions were gained relatively by Mr. P. Mottershead, gardener to H. S. Woodcock, Esq., Wigan, and Mr. C. Nickson, gardener to J. C. Platt, Esq., Cheadle, near Stockport. The best flowers of the leading collection were:—Back row.—Queen of England and Golden Empress. Middle row.—Lord Wolseley, Golden Beverley. Front row.—Barbara, Mrs. Heale, and Mr. W. E. Gladstone. Twenty-four blooms, Anemone, Pompon, and Japanese varieties, in which Mr. H. Rose was placed first with a good collection, although not quite consistent with the schedule:—Back row.—Guernsey Nugget, Madame Audiguier (Jap.), Queen of England, Oracle (Jap.), Fair Maid of Guernsey (Jap.), Baronne de Prailly (Jap.), Madame Moulise (Jap.), and Expedition de Toulon (Jap.). Middle row.—M. Juan Cruz (Jap.), Bend Or (Jap.), Diamond (Jap.), Sultan (Jap.), R. Ballantyne, Madlle. Delaux (Jap.), Cry Kang (Jap.), and Soleil de Levant (Jap.). Front row.—Elaine (Jap.), Rose Marguerite (Jap.), White Eve, Lady Marguerite (Anem.), Jardin des Plantes, Prince of Anemones (Anem.), Garnet (Jap.), and Ariadne (Pom.). Mr. C. Jones, gardener to Mrs. Shaw, Heaton Bolton, and Mr. G. Mottershead, were second and third in the order named.

*Chrysanthemums in Pots.*—Nine large-flowered, distinct, headed by Mr. Thomas Cash, gardener to C. S. Agnew, Esq., Prestwich, his plants being well to the front, even, carrying large flowers. Back row.—Empress of India, Pink Venus, and Elaine. Second row.—Prince of Wales, Mrs. Bunn, very fine; and Dr. Sharpe. Front row.—Princess of Teck, Hero of Stoke Newington, very good; and Chevalier Domage. Following in the order named were Mr. J. Kitchen, gardener to William Holland, Esq., Mr. Broughton, and Mr. R. Johnson, gardener to Thomas Slatter, Esq., Whitefield, two other collections besides being staged. In the corresponding class for four plants the same competitors were first and second respectively, and Mr. W. Burns, gardener to James Fletcher, Esq., Stoneclough, third. Mr. Cash's collection in this class consisted of Queen of England, Pink Venus, Ranunculus, and Empress of India. Four Pompons brought out six competitors, headed by Mr. J. McDonald, gardener to M. S. Bliss, Esq., Broughton Park, with very excellent plants of St. Thais, Golden, White, and Lilac Cedo Nulli. Second and third respectively Mr. H. Bennett, gardener to Thomas Dickens, Esq., Higher Broughton, and M. A. Bliss, Esq. In the class for six Japanese varieties the first honours were awarded to Mr. T. Cash, whose plants were grandly flowered, dwarf and well foliaged, consisting of La Charmeuse, Fair Maid of Guernsey, Meg Merrilees, L'Isle des Plaisirs, La Nympe, and Cossack. Second Mr. C. Pritchard, gardener to M. L. Yates, Esq., Didsbury. Third Mr. R. Johnson. Eight plants, not disbudded, first Mr. H. Bennett, with showy well-grown plants, copiously flowered, the best being La Nympe, Mulberry, and Rosinante.

*Miscellaneous Exhibits.*—For ten Primulas Mr. W. Radcliffe, Hollybank, Whitefield, was first, and—Hazzopullo, Esq., Higher Broughton, second, both lots being very good and close. Mr. Cash gained another first for six splendid pots of Roman Hyacinths, Messrs. Jones & Son of Shrewsbury following with very good plants also. For three hand bouquets Mr. James Mason, florist, Manchester, was a long way ahead with superb specimens, manipulated from a large resource of all the best flowers in season. Messrs. J. Jones & Sons, Shrewsbury, were first for the best arranged vase for the



dinner table with a tastefully executed piece of work. Amongst the numerous groups of plants which were not for competition the list must be headed with Mr. G. G. Kertin's bank of Chrysanthemums in pots, arranged effectively, representing good culture and much painstaking; the Society worthily awarded a special prize. Mr. John Hooley of Stockport staged a very handsome collection of plants in pots, consisting of *Ericas*, double Primulas, Zonal Pelargoniums, Bouvardias, &c. Messrs. G. & W. Yates, Market Place, Manchester, also had a fine batch of choice decorative plants, Chrysanthemums, Bouvardias, *Cypripedium insigne*, *Epiphyllums*, Ferns, Palms, *Erica hyemalis*, &c. Messrs. Dickson, Brown & Tait Manchester, staged a fine group of Solanums, surrounded with splendidly flowered *Erica hyemalis*, margined with *Cyclamens*. Messrs. R. Smith & Co., Worcester, and Messrs. W. Caldwell & Son, Knutsford, made a fine display of Apples, the excellence of which is guaranteed by the firms exhibiting. Great praise is due to Mr. William Mild, gardener to T. W. Tatton, Esq., J.P., Northenden, for the rich display of Apples, forty varieties being shown in dishes of seven, the quality of the fruit being all that could be desired, which is more than could be expected within six miles of the murky atmosphere of Manchester.

## CAMBRIDGE.—NOVEMBER 18TH.

THE Chrysanthemum Show of the Cambridgeshire Horticultural Society was held in the Guildhall. The Society has not held this Show for three or four years, and consequently, as many of the plants and flowers were not grown for exhibition, the display was not so good as it might have been, though the result was better than had been expected. It was on the whole satisfactory, and some very fine blooms were exhibited, especially by Mr. Downie of Ely, who was first for twelve and six Japanese blooms. Mr. Dobbs took first prize for twelve large-flowered Chrysanthemums, Mr. Aphorpe for six and three of the same class. Mr. Chater was first for three Japanese varieties. For Pompon Chrysanthemums Mr. Pearce was first for both twelve and six sprays of flowers. Specimens of the large-flowering Chrysanthemums were exhibited by Messrs. Hudson & Son and Mr. George Willers, who took first prizes for six and three respectively. In the Pompon class Messrs. Hudson & Son were first for twelve, six, and three specimens. Apples were so good as to make a principal feature, but no prizes appear to have been offered. Mr. Hutchinson, gardener to Mrs. Peed, was first for Grapes, both black and white, not Muscat. For White Muscats Mr. G. D. White, gardener to Capt. Stanley, was first. Very fine Tomatoes were exhibited by Capt. Stanley (Mr. G. White, gardener). This gentleman also exhibited a group of excellent Poinsettias, to which an extra prize was awarded. An extra prize was also awarded for a splendid stand of Black Hamburg Grapes exhibited by Mrs. Peed (Mr. Hutchinson, gardener). To Mr. Downie of Ely belongs the credit of having the best exhibit of Chrysanthemum flowers. Of their kind his were beyond all others the most successfully grown. This Show suggests the desirability that every Society should insist upon stands of a certain size and shape. Some of the stands were small for the flowers they held, and others, in one instance at least, far too large. Uniformity in this respect would greatly improve the effect. It is much to be regretted that some exhibitors spoil their stands by using ugly scolloped papers beneath the flowers, and we may suggest that plain papers should always be used. We may add that all flowers should be named. During the time the Show was open, only two hours, it was well patronised.

## WIMBLEDON.

THE annual Exhibition of Chrysanthemums and other flowers, fruits, and vegetables, took place on Wednesday last, November 19th, in the spacious Drill Hall, Wimbledon. The Exhibition has hitherto been held at the Lecture Hall of the Institute in Upper Wimbledon, but the increasing popularity of the Society, under the guidance of the energetic Secretary, Mr. H. A. Rolt, and the exertions of a hard-working Committee, the Society has outgrown that place. The exhibits on the last occasion being so crowded, the Committee very wisely resolved to remove to more roomy quarters. The result has fully justified the decision, the large Drill Hall measuring 80 by 45 feet being filled, the number of the exhibits and the excellent taste displayed in the arrangements making, next to Kingston, the most imposing exhibition that has been held in the metropolitan district, reflecting much credit on the staging committee, Messrs. Lyne, Stratton, &c. Additional interest is centred in the competition for cut blooms at Wimbledon, it being looked at as a sort of try-sting ground where the chief exhibitors from the neighbouring societies of Putney, Kingston, Richmond, Croydon, &c., meet for a final after the bustle of the previous week's exertions. A very friendly spirit prevails amongst the exhibitors, previous form being often upset through being a little late in the season, those with the freshest blooms win.

The competitive groups were arranged around the outside of the Hall, the class for a miscellaneous group arranged for effect bringing five competitors. Mr. W. Smith, gardener to J. F. Schwann, Esq., Parkside, Wimbledon, was awarded first prize for a very bright and effective group of Palms, Crotons, and Dracenas, intermixed with Calanthes, Poinsettias, &c. Mr. W. Wilkinson, gardener to Mrs. Schussler, Cannizaro House, Wimbledon, was second; and Mr. Davis, gardener to J. Chapel, Esq., East Hill House, Wimbledon, third, Mr. Laws and Mr. Bridger also showing well in this class. In the corresponding class for a group of Chrysanthemums in pots, Mr. W. Smith was again a good first with a fresh lot of plants producing flowers of excellent quality. Mr. Carter, gardener to H. J. Parry, Esq., Heathside, was awarded the second prize, and the Rev. A. N. Malan, Eagle House, third.

*Cut Blooms.*—The leading class was for twenty-four cut blooms, twelve Japanese and twelve incurved. This brought out six competitors, and all showing well. Mr. Woodgate, gardener to Lord Wolverton, Coombe Warren, was well to the front with a fine stand of large fresh blooms, his incurved consisting of the following varieties:—*Empress of India*, *Hero of Stoke Newington* (very fine), *Golden Empress*, *John Salter*, *Empress Eugénie*, *Cherub*, *Mr. Bunn*, *Barbara*, *Mrs. Shipman*, *Beverley*, *Angelina*, and *Nonpareil*. The Japanese varieties were *Baronne de Prailly*, *Boule d'Or*, *Meg Merrilees*, *Duchess of Albany* (Jackson), *Criterion*, *Album Plenum*, *F. A. Davis*, *Thunberg*, *Balmorean*, *Oracle*, *Agrements de la Nature*, and *Mdlle. Lacroix*. Mr. Gibson, gardener to J. Wormold, Esq., Morden Park, was second with a good stand of blooms, and Mr. H. Alderman, gardener to G. Hadfield, Esq.

Morden Hall, third. In the class for twelve incurved blooms Mr. Woodgate was again a good first with a well-finished stand of flowers, the varieties consisting of *Lord Alcester*, *John Salter*, *Princess of Wales*, *Golden Empress*, *Beauty*, *Empress of India*, *Lady Slade*, *Princess Teck*, *Cherub*, *Mrs. Shipman*, *Beverley*, and *Nonpareil*. Mr. Gibson was again second, and Mr. W. Smith third. There were also six entries in this class. The display of Japanese blooms was an attractive feature. In the class for twelve cut blooms there were ten competitors, all showing well. The coveted position was again secured by Mr. Woodgate, who quite outdistanced the others in all his classes, the remaining exhibitors being so close together that it was only after a lengthened scrutiny by the Judges their position could be determined. The varieties included in the first prize lot was similar to those in the preceding class, *Boule d'Or*, *F. A. Davis*, *Meg Merrilees*, and *Album Plenum* being very fine. Mr. Alfred Alderman, gardener to C. Czarnikow, Esq., Mitcham Court, was awarded the second with fresh blooms, and Mr. Gibson a very close third. In the class for six incurved, Mr. Newell, gardener to C. Saunders, Esq., Fairlawn, was first with a good stand of well-finished flowers. Mr. Bentley, gardener to Sir Thos. Gabriel, second, and Mr. Bennett, gardener to — Rhodewell, Esq., Feildheim, third. In the corresponding class for six Japanese Mr. A. Alderman was awarded first, Mr. Bentley second, and Mr. Bennett third. There were two maiden classes for those who had never taken a prize for Chrysanthemum blooms, which brought out some good exhibits. The first prize in the class for six incurved was taken by Mr. Newall with a good stand of well finished blooms. Mr. Buss, gardener to A. S. Price, Esq., Ewell, was awarded second, and Mr. W. Lazell, gardener to R. Harland, Esq., Merton, third. The same exhibitors took the prizes in the class for six Japanese in the order named, all showing well. For a special prize for three blooms of Chrysanthemum G. Stevens, Mr. Gibson was first and Mr. Smith second. The amateurs' division was very meritorious, showing the additional interest taken by them in the Society. For a group of Chrysanthemum plants arranged for effect, H. Luff, Esq., Wimbledon, was awarded the first prize, and Mr. W. Northover the second. For cut blooms, large flowers, A. Nagle, Esq., Surbiton, was first, Mr. H. A. Rolt second, and Dr. Walker, Wimbledon, third. In the class for twelve Japanese A. Nagle, Esq., was a good first; Mr. Carter, Wandsworth, second; and J. J. Caswell, Esq., Wimbledon, third. In the other classes for amateurs the above exhibitors were the chief prizetakers. For six plants suitable for table decoration, Mr. Buss was first with clean even plants, Mr. Wm. Smith second, and Mr. Bentley third. The prizes for Primulas were awarded to Messrs. Davis, Wilkinson, and Newall for red, and to Messrs. Bridger and Davis for white.

The Grapes exhibited in competition were not numerous but good. For two bunches of black Grapes Mr. W. Smith was awarded first for two good bunches of Alicantes, and Mr. Holmes, gardener to F. Walters, Esq., Clapham Common, second for the same variety. For two bunches of white Grapes Mr. Laws, gardener to R. S. Dean, Esq., The Priory, Wimbledon, was first with Muscat of Alexandria, and Mr. Smith second. For three dishes of Apples Mr. Hurn was first, Mr. Childs, Claygate, second, and Mr. Lazell third. The prizes for Pears were taken by the same exhibitors. The miscellaneous groups and other exhibits not for competition formed an attractive feature, and added much towards the adornment of the hall. On the left of the orchestra Mr. Lynes, gardener to — Schlusser, Esq., Belvidere, Wimbledon, had arranged an effective group of the choicest foliage and flowering plants, including Orchids and Poinsettias, and backed up with well-grown standard and other specimen Pompons. Messrs. D. S. Thomson & Sons had an excellent group of well-grown Palms, Dracenas, &c., on the other side; various lots of cut blooms were contributed by Messrs. Lyne, Gibson, Smith, &c., and Mr. H. Alderman sent an excellent box of well-grown Cucumbers of a first-class Telegraph variety, for which he was awarded a first-class cultural certificate, also some samples of Potatoes. Mr. Bentley sent some well-grown specimen plants of incurved Chrysanthemums, and Mr. Hurn a group of natural-grown plants. Mr. G. Stevens contributed a box of cut blooms of seedling Chrysanthemums, consisting of single-flowering Pompons, Anemones, and Hybrid Pompons. The best was a dark unnamed Anemone Pompon, and a Hybrid Pompon named Sulphur Gem, of a good shade of colour, very distinct, and likely to be very useful for decorative purposes.—C. ORCHARD, Coombe Warren, Kingston-on-Thames.

## ASCOT, SUNNINGHILL, AND DISTRICT.—NOVEMBER 19TH.

THE first Show of the above Society, comprising residents within a radius of five miles of Ascot, was held at the Grand Stand, Ascot racecourse, on the above date, the result being a success in every way. Considering the first attempt at organising the Society was made within two months of the exhibition day, no extra preparation had been possible, and this speaks volumes for the generally good cultivation practised in the district. The ball-room, 100 feet long by 30 feet wide, in which the principal exhibits were displayed, presented a most attractive appearance, the groups of Chrysanthemums and other plants arranged round the sides, with cut blooms, fruit, &c., on tables down the centre, beautifully berried Solanums and other small plants suitable for table decoration being freely intermixed. For the best group of Chrysanthemums to be shown as grown, not to exceed a space 12 feet by 6 feet, quality and general effect to be the leading features, nine competitors entered, each showing well, foliage and flowers being alike good. The first prize was awarded to Mr. Lane, gardener to Miss J. D. Smith, King's Ride, Ascot, who had a bright and well-arranged group; second Mr. J. Hughes, gardener to H. J. de Paravicini, Esq.; third Mr. Wells, gardener to R. Ravenhill, Esq., Fern Hill, Winkfield, the latter with beautifully grown plants, but rather lacking in variety. Five extra prizes were awarded other exhibitors in this class. For the best six plants Mr. Wells was first with naturally grown specimens, and for three standards Mr. Lane was the only exhibitor, but he well merited the first prize awarded, his plants being of medium size, profusely flowered, with dark green healthy foliage. The varieties were Peter the Great, Mrs. G. Rundle, and George Glenny.

Cut blooms, with the exception of the leading stands, were poor. In the open class for eighteen incurved blooms in not less than twelve varieties Mr. C. Page, gardener to A. Southard, Esq., Fern Lodge, Bracknell, was a good first, staging fine examples of *John Salter*, *Lady Hardinge*, *Cherub* (very good), *Princess of Wales*, *Barbara*, *Princess Teck*, and *Nil Desperandum* amongst others. Second Mr. Elliot, Braywick. Third Mr. Tomlin, gardener to T. Ashby, Esq., Sunninghill. For twelve incurved, distinct, first Mr. Lane; second Mr. Campbell, gardener to Sir E. Sullivan; third Mr. Sney.



gardener to G. N. Taylor, Esq. Five exhibitors competed in the class for six incurved of one variety. Mr. Richards, gardener to the Rev. H. Kynnersley, Ascot, coming first with Jardin des Plantes; second Mr. Lane with Prince Alfred, rather past their best; third Mr. Campbell.

There was a better display of Japanese blooms. In the largest class for eighteen blooms Mr. C. Page was again a long way ahead of the other competitors, having superb flowers of Madame C. Audiguier, Thunberg, Hiver Fleuri, The Sultan, Fair Maid of Guernsey, Japonais, and Roseum Superbum; second Mr. Elliot; third Mr. Skarrott. Twelve Japanese—First Mr. Lane; second Mr. Martin. Some fine blooms of Madame Audiguier were staged by Mr. Tomlin in the class for six of one variety, Mr. Lane being second with Soleilde Levant. Large-flowered Anemone blooms were well shown by Mr. C. Page, other exhibits in this class being poor.

Four competitors put up groups of miscellaneous plants. Mr. Lane's arrangement was the best, and consisted of a central Cocos Weddelliana, with highly coloured Crotons, Dracanas, and small flowering plants freely intermixed, the groundwork and edging being of Maidenhair Fern.

Fruits were staged in limited quantities, but these included some good examples. Mr. Wells easily secured the premier position in the class for two bunches of black Grapes, with very fine Cooper's Black. The same exhibitor was also first for four dishes of kitchen and dessert Apples.

Amongst non-competitive exhibits high praise must be accorded to Messrs. Standish & Co. for a fine group of admirably arranged plants, while Col. Mallock, Bagshot, put up four stands of fine Chrysanthemum blooms, principally of Japanese varieties. Messrs. Sutton & Sons, Reading, staged seventy dishes of handsome Potatoes.

The courteous and energetic Secretary, Mr. Wix, and his practical Committee must be congratulated on the success of their first attempt, which augurs well for the future.

#### BIRMINGHAM.—NOVEMBER 19TH AND 20TH.

THE Show in connection with the above Society was held in the Birmingham Town Hall, the display being magnificent, and far ahead of anything ever before brought together at this season of the year in the midlands. The plants of Chrysanthemums shown in pots might have been better as regards size and substance of bloom, but this was compensated by the number of flowers, and the very healthy and vigorous condition of the plants. The numerous collections of other plants and cut flowers were most interesting and highly attractive, in some instances peculiarly so, such as the grand old specimen of Erica hyemalis shown in a non-competing collection by Mr. W. Jones, the Secretary of the Society, and to which a special prize was well awarded; also the splendidly grown plant of Callicarpa purpurea, a plant known and much cultivated in Sweet's time, and when grown as staged by Mr. G. Brasier it never fails to elicit admiration. There was also a charming pan of Pratia (Lobelia) littoralis exhibited with many other showy plants, by Mr. Hans Niemann, nurseryman, Barbara Road, Edgbaston. It was crowded with pinkish purple berries, and was much admired by those who saw it. Chinese Primroses were well and largely shown, for in addition to classes provided for them special prizes were offered which drew several collections, the whole series constituting a very important feature of the Show. Fruit was good and abundant, the quality of the Grapes in many instances being first-class, and the prizes were keenly contested. Apples and Pears were excellent, the former being most numerous, so of the classes being well filled, and those who failed to secure honour had no reason to be ashamed of their exhibits, and we may especially name a very fine collection of twelve dishes shown by Mr. H. Livey, The Gardens, Wellesbourne House, Warwick. We trust the Committee were satisfied with the financial result, as they honestly deserve success in bringing such a magnificent display together.

**Plants in Pots.**—The principal collection was nine dissimilar varieties, for which the first prize was £5, which was easily secured by Mr. Wm. Doughty, gardener to H. H. Hill, Esq., Edgbaston, with capital plants well grown and flowered. Back row: Guernsey Nugget, Lady Hardinge, and Mr. G. Glenny. Middle row: Golden Empress, Mrs. Haliburton, and Nil Desperandum. Front row: Empress of India, Mrs. G. Rundle, and Pink Venus; followed by Mr. J. Crook, Edgbaston, and Mr. G. Brasier, gardener to T. Martineau, Esq., Edgbaston, in the order named. In the class for six dissimilar varieties Mr. Brasier was well first with Jardin des Plantes, John Salter, Mrs. G. Glenny, Prince Alfred, Lady Hardinge, and Mrs. G. Rundle; and Mr. T. Day, gardener to H. Elkington, Esq., Edgbaston, second. Three dissimilar varieties: First, Mr. T. Crook, with excellent plants of Princess Teck, Lady Slade, and Empress of India; while Mr. G. Brasier, and G. Payton, Esq., Edgbaston, shared relative honours. Six distinct Pompons.—Mr. T. Day took the lead, also in the next class for three Pompons. The collections included fine plants of the following varieties crowded with bloom, and not rigidly trained:—Mad. Marthe, Rose Trevenna, Nell Gwynne, White, Lilac and Yellow Cedo Nulli, and Cendrillon. In the smaller class he was followed by Mr. Crisp, gardener to A. Keen, Esq., Edgbaston. In the class for one Japanese, Mr. Brasier was first with a handsome specimen of Bouquet Fait; Mr. W. Doughty second with General Bainbridge, and Mr. J. Crook third with the same variety. Far a bank of naturally grown Chrysanthemums arranged for effect, space not to exceed 80 square feet, the Society offered special prizes, the first being taken by Mr. W. Dyer, gardener to J. Marigold, Esq., Edgbaston, for an excellent collection. Some fine blooms were noticeable, and there were numerous plants representing nearly all the different classes. Some of the incurved varieties were particularly praiseworthy. Mr. J. C. Nickley, Smethwick, and Mr. S. Snow, gardener to W. E. Peek, Esq., were second and third respectively.

**Cut Blooms.**—Much interest centred in the principal class for forty-eight blooms, twenty-four incurved and an equal number of Japanese, for which the first prize was £10. Four collections were staged, all of which were meritorious, and some contained magnificent blooms. Mr. J. Jellico, gardener to F. H. Gossage, Esq., Woolton, Liverpool, whose collection was really the feature of the Exhibition, was, after careful consideration, placed first. The varieties were as follows:—Incurved, back row: Alfred Salter, Princess of Wales, Sir S. Carey, Empress of India, Prince Alfred, Golden Empress, Queen of England, and Jeanne d'Arc. Middle row: Emile Dale, Cherub, Hero of Stoke Newington, Jardin des Plantes, Princess Teck, Mr. Howe, Lady Hardinge, and Barbara. Front row: Mrs. Shipman, Beauty, Refulgence, Eve, Princess Beatrice, Mrs. Heale, Mr. Cullingford, and Mabel

Ward. Japanese, back row: Fair Maid of Guernsey, Boule d'Or, Triomphe de la Rue des Châtelats, Baronne de Prailly, Criterion, Mad. C. Audiguier, Japonais, and Meg Merrilees. Middle row: M. Desbrieux, Balmoreau, Elaine, Peter the Great, R. Ballantine, Ethel, J. Delaux, and M. Ardene. Front row: Comte de Germiny, Ceres, H. Jacotot, La Nympe, Flamme de Punch, Thunberg, Dr. Macary, and Triomphe du Nord. The second prize of £7 was awarded to Mr. A. Barker, gardener to Sir H. Allsopp, Bart., Worcester, for an excellent collection, but some of the blooms were past their best. All but perfect blooms of the following were, however, staged:—Empress of India, Lord Alcester, Mrs. Heale, Peter the Great, and M. Ardene. Third and fourth respectively, Mr. G. Neal, gardener to P. Southby, Esq., Hampton, and Mr. W. Comfort, gardener to G. A. Everitt, Esq., Knowle. In the next class for twenty-four blooms, twelve incurved and twelve Japanese, Mr. Jellico again took the lead, while Messrs. Barker and Comfort followed in the order named. The same high character shown in the premier collection was also marked in Mr. Jellico's varieties, which were as follows:—Back row, Incurved: Alfred Salter, Empress of India, Golden Empress, and Jeanne d'Arc, again remarkably fine. Middle row: Princess of Wales, Jardin des Plantes, Sir A. Carey, and Barbara. Front row: Princess of Teck, Hero of Stoke Newington, Eve, and Princess Beatrice, Japanese.—Back row: Japonais, Fair Maid of Guernsey, Soleil de Levant, (grand), and Criterion. Middle row: Elaine, Comte de Germiny, Madame C. Audiguier, and Nil Desperandum. Front row: J. Delaux, Boule d'Or, Triomphe de la Rue des Châtelats, and M. Ardene. Mr. Jellico was again first for eighteen incurved varieties, staging high-class blooms, which could scarcely be surpassed. We may particularise Mrs. Shipman, Mrs. Heale, Barbara, Princess Beatrice, Jeanne d'Arc, and Refulgence. Mr. W. Comfort took the second, and Mr. W. Dyer the third place. Yet again first honours awaited Mr. Jellico in the class for twelve distinct Japanese, with the following varieties, all of which were good:—Back row: Fair Maid of Guernsey, Japonais, Madame C. Audiguier, and Peter the Great. Middle row: Criterion, M. Ardene, Boule d'Or, and Elaine. Front row: Triomphe de la Rue des Châtelats, Meg Merrilees, Magnum Bonum, and H. Jacotot; Mr. A. Barker second; Mr. Comfort third. Twelve Anemone-flowered, not less than six varieties:—First Mr. Barker, followed by Mr. Jellico and Mr. Comfort. The first collections were very good. There were six entries in the class for twelve incurved varieties grown within three miles of Stephenson's Place, but the first was easily taken by Mr. W. Dyer with a praiseworthy collection, including the leading kinds.

**Various Plants and Flowers.**—For twelve Chinese Primulas, six red and six white, Messrs. Pope & Son, nurserymen, King's Norton, were first, the same exhibitors taking the same position for six plants. All were very fine. Six double Chinese Primulas, in which Messrs. Pope & Son again took the lead, followed by Mr. Freeman, gardener to Z. Walker, Esq. The first collection was extremely fine. Twelve Cyclamens.—First Mr. E. Cooper, gardener to Right Hon. J. Chamberlain, the plants being splendidly grown and of an excellent strain. Classes for gentlemen's gardeners and amateurs.—Twelve Chinese Primulas.—First Mr. G. Caldicott, gardener to Wm. Matthews, Esq., Edgbaston; and Mr. S. Snow, gardener to E. Perks, Esq., Solihull, Birmingham, was first in the corresponding class for six plants. Special prizes were also given for Primulas, which were taken by Messrs. Dyer, Caldicott, White, and Faulkner. All the exhibits staged in first-class state, the size, colour, and habit being all that could be desired. For nine plants in or out of bloom, excluding Chrysanthemums and Primulas.—First Mr. G. Brasier with a very fine lot, including Callicarpa purpurea, previously mentioned; Plumbago rosea, splendidly flowered; Eucharis amazonica, Croton Veitchii, Dracæna magnifica, &c., followed by Mr. W. Doughty. For six similar plants Mr. W. Dyer was first, staging an excellent specimen of Croton majesticus; Messrs. E. Cooper and T. Day second and third relatively. Three Poinsettias, not less than five heads to each pot.—First Mr. Dyer; while Mr. G. Brasier took the first for three pots of Mignouette.

**Fruit.**—Six dishes, distinct.—First Mr. Barker, with a good collection. Mr. E. Gilman, gardener to the Earl of Shrewsbury, was second, and Mr. J. Bennett, gardener to Hon. C. A. Wynne, Corwen, third. For the best three bunches of black Grapes Mr. Barker again took the lead with Black Alicante, followed by Mr. H. Thompson, gardener to W. Bassano, Esq., Old Hill, with Meredith's Alicante, and Mr. H. Fraser, gardener to W. A. H. Martin, Esq., Ledbury. The best two bunches of Muscat were shown by Mr. Gilman, who staged splendidly finished examples of Muscat of Alexandria; second and third Mr. A. Barker and Mr. J. Muncaster, gardener to W. H. Wynn, Esq., Selby Oak. Two bunches of white Grapes, Muscat excluded.—First Mr. J. Freeman, with grandly coloured Duchess of Buccleuch, followed by Mr. C. Ruffil, gardener to H. Lovatt, Esq., Wolverhampton, with fine bunches of Trebbiano. For the best bunch, black, Mr. Thornton was first with a fine specimen of Meredith's Alicante. For one Pine, first, Mr. J. Beunett, with a magnificent Smooth Cayenne. Twelve dishes of Apples, six dessert and six culinary, for which there were many competitors; but the first award fell to Mr. W. Edwards, gardener to H. Higgins, Esq., Thinghill, with splendid dishes of the following:—Dessert: Cox's Orange Pippin, Ribston Pippin, Fearn's Pippin, and others without names. Culinary: Blenheim Pippin, Belle de Bois, Warner's King, Peasgood's Nonesuch, Annie Elizabeth, and Alfriston. Mr. W. Green, Tenbury, and Mr. C. Slade, Alcester, followed in the order named. Twelve dishes of Pears, distinct.—Mr. A. Barker took the lead with excellent dishes of the following with others:—Prince Consort, Beurré Diel, Glou Morceau, Easter Beurré, Doyenné du Comice, and Winter Nelis, closely followed by Mr. Fraser, while Mr. W. Green of Ledbury was a good third. For a dish of Mushrooms there was keen competition. The first were very excellent, staged by Mr. J. Crook, Edgbaston.

**Miscellaneous exhibits.**—Foremost for brilliancy of display was Messrs. Cannell & Sons' stand of Zonal Pelargoniums and single Chrysanthemums; the latter created both surprise and admiration, but the Pelargoniums evidently shared highest honours. Two of the best we have seen were Queen of the Belgians and La Cygne, both pure white, the former single and the latter double-flowered, of grand form and substance. Messrs. Pope & Sons and T. Hewitt & Co., made a fine display of Zonal Pelargoniums in pots, as well as Ferns, &c. Messrs. R. Vertegans, Chad Valley Nurseries, also staged fine plants of a very showy character; also Mr. Hans Niemand, Edgbaston, had a most effectively arranged group, close by which was Mr.



W. Jones' collection of flowering and foliage plants, in which the *Erica hyemalis* previously mentioned was conspicuous. Messrs. Perkins of Coventry showed single Chrysanthemums, and a choice assortment of made-up wreaths and crosses, exhibiting alike artistic manipulation and a wealth of the most beautiful flowers. Messrs. Blake & Mackenzie of Liverpool also had examples of their most valuable parcel-post boxes.

#### BRISTOL.—NOVEMBER 19TH AND 20TH.

THIS is one of the oldest exhibitions and still one of the best in the country, though this is more due to the energy and good management of the Hon. Secretary, Mr. G. Webley, and the hard-working Committee, than to any great encouragement on the part of the inhabitants of Bristol, Clifton, and neighbourhood. Although nominally a Chrysanthemum show, various other subjects are equally as well provided for and represented, and it is in this respect where the superiority is maintained. Numerous exhibitions held near London could safely be said to excel the Bristol Show so far as cut blooms are concerned, but most of them we may confidently assert would contrast very unfavourably in the display of specimen plants of various kinds as well as fruit and vegetables.

Trained specimens of large-flowered sorts were, as usual, shown in goodly numbers, and that, too, by quite a fresh set of growers. Mr. C. Silcox, gardener to W. Vowles, Esq., secured the silver cup offered for six specimens, these consisting of Fingal, Mrs. Dixon, Barbara, Alma, Mrs. Rundle, and Jardin des Plantes, all remarkably healthy and well flowered, carrying on an average about one hundred blooms. Mr. H. Hinking, gardener to R. Cripps, Esq., was a close second, his best plants being of the Rundle family and John Salter; and the third prize was well won by Mr. J. Lee, gardener to T. M. Miller, Esq. The last-named was first with three specimens, Mr. Silcox being second, and Mr. H. Hinking third. Mr. Hinking had the best three standard-trained plants, Mr. E. T. Hill being second, and Mr. W. Bannister, gardener to H. St. Vincent Ames, Esq., third, all exhibiting creditable plants of well-known sorts. The prizewinners with a single pyramid were Messrs. Silcox first; J. Loosemoore, gardener to W. Cooper, Esq., second; and J. Lee third. With four trained Japanese, which, however, are not well adapted to this style, Mr. Loosemoore was first, Mr. J. Lee second, and Mr. D. Davis third, and these exhibitors were also successful with a single specimen. Mr. W. H. Lintern, gardener to W. Butler, Esq., had the prize for six trained Anemone-flowered sorts, these consisting of Rosinthe, Calliope, Marabout, Antonius, Cedo Nulli, and Mrs. Wyness, all in very good condition; Mr. J. Lee was second, and Mr. Lintern was again first for four specimens. There was also a class provided for naturally grown plants, and with these Mr. E. T. Hill was first, and Mr. E. S. Cole, gardener to W. Pethick, Esq., second. For the first time prizes were offered for groups of Chrysanthemums, and three fairly good lots were arranged. Mr. E. Miller was first, Mr. E. S. Cole second, and T. M. Miller third. Mr. Silcox was first with six conservatory plants, and Mr. Taggett second.

Miscellaneous plants occupied a considerable space, and comprised many grand and valuable specimens. Mr. Rye was first with six ornamental-foliaged plants, these consisting of immense and very healthy specimens of *Croton undulatus*, *C. pictus*, *C. variegatus*, *Latania borbonica*, *Alocasia metallica*, and *Anthurium crystallinum*. Mr. F. Edwards, gardener to J. Lysaght, Esq., was a good second, and Mr. A. Hancock, gardener to A. W. Summers, Esq., third, both staging creditably. Mr. Rye was also first with four specimens, these consisting of grand plants of *Cycas revoluta*, *Areca sapida*, *Croton interruptus*, and *C. Weismannii*. Mr. E. Miller, gardener to F. Taggart, Esq., was a good second, his collection including an immense specimen of *Latania borbonica*. Mr. Miller was first with a new or rare plant, and also with a flowering plant, the latter being a grand specimen of *Eucharis amazonica*, which bore upwards of seventy flower scapes, and about 230 very fine blooms. Ferns were extensively shown, and included several fine specimens of *Adiantums*, *Gymnogrammas*, and *Davallias*. Mr. W. Bannister was a good first with six plants, and Mr. Miller a close second, and Mr. Rye was first for four Ferns. The best groups of mixed plants for effect was arranged by Messrs. Garaway & Co., Durdham Down Nursery, and fully deserved all the praise bestowed upon it. The groundwork was composed principally of Maidenhair Ferns, and among these were dotted many well-grown *Crotons*, *Dracenas*, *Palms*, *Ericas*, and other plants, with a background of *Palms* and a *Pandanus*. Mr. J. Lee was second. *Primulas* were well shown by Messrs. Bannister, Cole, and Castle; *Poinsettias* by Mr. Miller and Miss Charles; ornamental-fruiting plants by Messrs. W. H. Lintern, A. Lintern, and T. M. Miller; *Bouvardias* by Messrs. J. H. Vallance, gardener to J. C. Wall, Esq.; G. Marsh, gardener to M. Dunlop, Esq.; and W. K. Wait; and *Zonal Pelargoniums* by Mr. Taggett, the exhibits being very creditable, and the prizes awarded in the order in which the names are given in each instance.

Cut blooms of Chrysanthemums were not particularly good, this being owing to the lateness of the fixture. The best twenty-four incurved varieties was staged by Mr. J. Baylis, and of these the most noteworthy were Golden Empress of India, Empress of India, Princess Imperial, Barbara, Mrs. G. Glenney, and Mr. Brunlees. Mr. T. Hobbs was second, his best blooms being Hero of Stoke Newington, Princess of Wales, Angelina, and Isabella Bott. Mr. J. Hobbs was a creditable third. Mr. E. S. Cole was first with twelve incurved, distinct, and had Golden Empress of India, Empress of India, Princess of Teck, Mrs. Shipman, Mrs. Naish, Barbara, Antonelli, and Hero of Stoke Newington in good condition. Mr. J. Waite was second, and Mr. M. Cole, gardener to R. B. Cater, Esq., third. Mr. Baylis was first with six blooms, these including good Princess of Wales, Mrs. Heale, Mrs. Cunningham (Empress of India). Mr. T. Hobbs was second, and Mr. J. Hobbs third. Mr. E. S. Cole was first with twelve Anemone-flowered, and among these the best were Lady Margaret and Fleur de Marie. The class for twelve blooms in two colours was decidedly a good one. Mr. E. S. Cole was first with Golden Empress of India and Barbara in good condition, Mr. Baylis following with very slightly inferior blooms of Princess of Wales and Barbara, and Mr. J. Hobbs was a good third. With twelve Japanese varieties Mr. T. Hobbs was first, having, among others, fine blooms of Madame C. Audiguier, Grandiflorum, Baronne de Prailly, Comte de Germiny, Mons. Tarin, and Madame Berthie Rendatler. Mr. E. S. Cole was a good second, and was also first with twelve blooms in not less than six varieties; and of these the best were Thunberg, Red Dragon, Bronze Dragon, and Sarnia.

Mr. Baylis was second in this class. A considerable number of cut blooms were staged by Messrs. Garaway & Co., but not for competition. These included good examples of Mons. Lemoine, Thunberg, Triomphe de la Rue des Chatelets, Mons. Astorg, F. A. Davies (J. Delaux), Luteum Striatum, Mons. Brunet, Marguerite Marrouch, Apollo, and other Japanese varieties, besides all the best of the incurved sorts. By way of a commentary on the extraordinary mild and dry autumn, Messrs. Garaway staged several stands of double and single Dahlias, and never, probably, before this season were Chrysanthemums and Dahlias placed in juxtaposition. Hand bouquets were well shown by Messrs. M. Hookings, E. S. Cole, J. Goddard (gardener to R. H. Symes, Esq.), and E. Miller, and vases for dinner-table decoration by Messrs. E. S. Cole, M. Hookings, and E. T. Hill, great taste being displayed in the arrangement of the very choice flowers employed. The baskets and vases filled with the foliage and berries of wild plants were, as they always are at Bristol, singularly beautiful. The first prize for these and the Knightian bronze medal of the Royal Horticultural Society was awarded to Mr. E. S. Cole, Mr. E. T. Hill being second, and Mr. Virgo third.

Fruit was particularly well shown, the Grapes being especially numerous and good. For four bunches in two varieties, Mr. Vallance was first with well-finished examples of Black Alicante and Lady Downe's; Mr. Nash, gardener to the Duke of Beaufort, being a close second, and Mr. J. Ellicott a good third, and there were six other fairly good lots shown. Mr. F. Edwards was first with two bunches of Lady Downe's, Mr. Vallance second, and Mr. W. Nash third, all having well finished bunches. Mr. Nash was first with two large but not particularly well coloured bunches of Black Alicante; Mr. W. Taylor, gardener to Alderman Chaffin, being second with small but very well finished bunches, and Mr. Vallance a good third, and there were seven other exhibits in this class. Muscat of Alexandria was fairly well shown by several growers. Mr. Ellicott was first, and Mr. M. Marshall, gardener to M. Whitwell, Esq., second. Pears were not so fine and plentiful as usual. The first prize for six dishes, and which also carried with it the silver Knightian medal of the Royal Horticultural Society, was awarded to Mr. E. Cox, who had fine fruit of Beurré Bachelier, Beurré Diel, Josephine de Malines, Glou Morceau, Easter Beurré, and Bergamotte d'Esperen. Mr. W. Rye was a good second, and Mr. E. Hall third. With four dishes Mr. J. Marshall was first, having very good fruit of Easter Beurré, Beurré Diel, Alexandre Lambre, and Durondeau. Mr. Rye was again second, and E. Hall third. In the single dish class Mr. Hall was first with very fine fruit of Glou Morceau; Mr. Apling, gardener to W. Baker, Esq., second with equally fine Beurré Diel; and Mr. J. Lee was third with Alexandre Lambre, over-ripe, but still very delicious. The competition in all the Apple classes was very close, and probably some of the sorts were never seen in better condition. With six dessert sorts Mr. J. H. Vallance was first, having very fine Cornish Gilliflower, Kentish Pippin, Cox's Orange Pippin, King of the Pippins, Blenheim Pippin, and Ribston Pippin. Mr. Bannister was a close second, and Mr. J. H. Virgo third. Mr. Vallance was also first with four sorts, Mr. Virgo being second, and Mr. Bannister third. Cox's Orange Pippin was the favourite variety in the single dish class, and the prizewinners were Messrs. E. S. Cole, C. Francis, and T. Bush. Culinary Apples were very fine and highly coloured. Mr. W. M. Baker was first with six varieties, having excellent dishes of Malster, Beauty of Kent, Royal Russet, Hanwell Souring, Blenheim Pippin, and Alfriston. Mr. E. Francis was second, and E. Hall third. With a single dish Mr. W. M. Baker was first with very fine Beauty of Kent; Mr. Bush second with very good Kentish Fillbasket, and Mr. Vallance third with Blenheim Pippin. Several fairly good collections of fruit were shown, Mr. Nash being first with fairly good Alicante and Muscat of Alexandria Grapes, Medlars, a Melon, Beurré Diel Pears, and Apples.

Vegetables were particularly good and numerous. The best collection was staged by Mr. W. M. Baker, Gloucester, who had good Asparagus, young Carrots, Wheeler's Solid Red Celery, Veitch's Autumn Giant Cauliflowers, Wheeler's Extra Fine Sprouts, Giant Zittau Onions, Snowflake Potatoes, Golden Ball Turnips, and Student Parsnips, all in excellent condition. Mr. Bannister was a good second, and Mr. E. T. Hill, third. Mr. E. Miller had the best brace of Cucumbers, and was followed by Mr. W. Cooper, the third prize going to Mr. M. Cole.

#### HULL.—NOVEMBER 20TH AND 21ST.

WHEN we consider the fact that no preparations whatever were made before September of the present year for holding a Chrysanthemum Show in Hull, we are bound to express our astonishment that such a liberal and well-arranged schedule could be provided, and such a great and generally good show produced. Notwithstanding the size of the Public Rooms in which the Exhibition was held, the Committee were almost overwhelmed with exhibits, and judging by the inrush at the opening of the Show, we suspect they would also be overwhelmed with visitors before its close. As a first Show we must record it the best we have seen, and with a continuance of the good and spirited management we fail to see any obstacle to prevent the eastern port of Hull becoming as famed for Chrysanthemum shows as is the western port of Liverpool. The Society is fortunate in having an admirable Executive Committee, with Mr. George Bohn, C.E., as Chairman, and Mr. Falconer Jameson and Mr. W. Hawksworth as active Honorary Secretaries. We also observe an imposing list of life patrons, or subscribers of five guineas, which have not only given the Society a good start, but must contribute to its stability.

The schedule contained thirty-three classes, which brought out sixty-four exhibitors and 240 entries, and, judging from the appearance of the rooms, few could have withdrawn, for every inch of space seemed occupied.

*Cut Blooms.*—All the principal classes for these were open, but a few were very properly reserved for amateurs. The chief interest naturally centred in the competition for the £10 prize in the class of forty-eight blooms, twenty-four incurved and twenty-four Japanese varieties, which was well won by Mr. E. Green, gardener to J. Woolwright, Esq., Mossley Hill, Liverpool, whose flowers must rank among the finest that have been staged this year. The Japanese varieties were particularly full, fresh, and bright, and the incurved solid, well-coloured, broad-petalled, and of good size. The varieties were, of incurved, back row: Alfred Salter, John Salter, Empress of India, Prince Alfred, Queen of England, Princess of Wales, Golden Empress, and, as may be imagined by its position, a



magnificent example of Lady Slade. Second row: Lord Wolseley, Hero of Stoke Newington, Sir Stafford Carey, Princess of Teck, Venus, Jardin des Plantes, Lady Hardinge, and Mrs. Shipman. Front row: Blonde Beauty, Barbara, Mrs. Heale, Beauty, Cherub, Princess Beatrice, Mrs. Haliburton, Eve. Japanese, back row: Japonais, very fine; Fair Maid of Guernsey; Madame C. Audiguier, Golden Dragon, Triomphe de la Rue des Chatelets, Soliel Levant, Baronne de Prailly, and Criterion. Second row: Peter the Great, Rnd Gauntlet, splendid; Apollo, M. Ardene, Meg Merilees, F. A. Davis (J. Delaux), Comte de Germiny, and La Nymphe. Front row: Pere Delaux, Sultan, Hiver Fleuri, Oracle, Thunberg, Magnum Bonum, and Striatum. There were very few failing flowers in those stands, which were highly creditable to the cultivator. The second prize was with great reluctance withheld, as the blooms named Alfred Salter and Queen of England were in the unanimous opinion of the Judges of the latter variety. Their distinctness could not be claimed because one bloom was fresh and the other stale, for both of them were fading, and neither of them could stand the test of comparison with any one of the many other Alfred Salters in the Show. Had the blooms in question been passed as distinct a formal protest would have been entered which could not have been resisted; but as they were in the opinion of the officials staged by inadvertence, a money grant was recommended for the forty-seven varieties, which were generally large and fine, but some of them loose and quite devoid of freshness. The exhibitor would have been placed second but for the mishap in question. The third prize in this class was won by Mr. Coulling, gardener to J. Ruston, Esq., M.P., Lincoln, with fresh blooms, but lacking in weight.

In the class of twenty-four blooms, twelve incurved and twelve Japanese varieties, there was excellent competition, Mr. Green again securing the chief prize of £5 with examples similar to those in the preceding class, followed by Mr. Mitchell, gardener to W. J. Warren, Esq., Bracebridge, Lincoln; Mr. Bulmer, gardener to David Wilson, Esq., Cottingham; and R. Falconer Jameson, Esq., Hessle, in the order named. Mr. Green was clearly ahead in the class for twelve incurved blooms with a splendid stand containing Queen of England, Golden Empress, Empress of India, Alfred Salter, John Salter, Princess of Wales, Venus, Lord Wolseley, Princess Beatrice, Barbara, Mrs. Haliburton, and Cherub; Mr. Bulmer being second, and Mr. J. Browsho, Beverley, third. In the class of twelve Japanese Messrs. Green, Bulmer, and Mitchell were the respective winners, all staging well. Mr. Morton, Darlington, was first with six Anemone-flowered varieties, his excellent stand including some of the Japanese forms; Mr. R. Falconer Jameson being an exceedingly close second, and Mr. F. W. Jameson a similarly close third. For six reflexed blooms the prizes were awarded respectively to Messrs. Mitchell, R. F. Jameson, and F. W. Jameson, all having good stands. The same exhibitors were successful in the class of six blooms, "any variety," which ought, according to the intentions of the Committee, to have been "any varieties," as six were staged in each case. The prizes given by Mr. E. P. Dixon, seedsman, &c., for six incurved and six Japanese varieties were won by Mr. Bulmer, Mr. F. W. and Mr. R. F. Jameson in the order named for creditable examples.

**PLANTS.**—In the open classes the greatest and best competition was for the prizes offered for groups of Chrysanthemums interspersed with foliage plants for effect. The first prize of £5 was won by Mr. Bulmer with an exceedingly tasteful arrangement, the central plant being a remarkably healthy Cocos Weddelliana. Mr. Cottam, Cottingham, was second; and Mr. Strickland, gardener to Lieut. Col. Saner, third; extra prizes being awarded to Messrs. Harland and Read. Messrs. Bulmer, Smith, and Wilkinson appeared to take most or all the prizes in the specimen plant classes; and while a few of the examples staged were good, we venture to predict there will be better next year. The finest plants in the Show were twelve huge specimens, with which an amateur—Mr. T. Smith, Murton, York—won Messrs. Laverack & Goddard's prize, value £10. They were what are known as naturally grown—that is, the stems not bent in training, and the exhibitor may be proud of having produced them, for without being unduly spread out they ranged from 4 feet to 6 feet in diameter.

We are unable to refer to the other amateur classes, and can only say that special prizes were recommended for a fine group of plants staged by Mr. McMahon, the talented Curator of the Botanic Gardens, and to Mr. Martin for cut blooms of Pompons. We could not get near the table decorations owing to the density of the crowd. The Show was opened by the Mayor and Corporation, and was an undoubted success. It was attended by 4000 persons, and a handsome financial balance on the right side of the ledger is, we are glad to hear, expected.

#### CHESTERFIELD,—NOVEMBER 21ST AND 22ND.

THE third annual Show of the Chesterfield Chrysanthemum Society was held in the Assembly Room, Market Hall, Chesterfield. The room is a spacious one and well lighted, and is admirably suited for the purpose. The arrangements of the exhibits was very tastefully effected, and the general effect, especially in the evening after the room was well lighted, very bright and cheerful. The two sides of the room and one end were appropriated to the groups of Chrysanthemums in pots for competition, those on one side being incurved and reflexed varieties, whilst the opposite side was filled with Japanese varieties. A good opportunity was thus afforded of comparing their relative merits for general decorative purposes, and as there exhibited the palm must go to the first named.

The Society has not until this year given any money prizes, but, instead, has given certificates to the winners. This year, however, the Society resolved to give money prizes in an open class for twenty-four incurved cut blooms, not less than twelve varieties, in the hope of inducing some good growers from other districts to compete and to improve the standard of their exhibits. This class brought seven competitors, one being from Liverpool, one from Sheffield, and the remainder from local growers. The first prize in this class, as also the prize for the premier incurved bloom in the Show, was awarded to Mr. W. K. Woodcock, gardener to Mrs. M. Firth, Oakbrook, Sheffield, whose stand of twenty-four was much admired. The back row was composed of Empress of India, Golden Empress, Queen of England, and Golden Queen, two blooms of each. Second row.—White Queen (two), John Salter, Mr. Howe, Nil Desperandum, Lady Hardinge, Beverley, and Mr.

Bunn. Front row—Cherub, White Venus (two), Prince of Wales, Angelina, White Eve (very fine), Prince Alfred, and Jardin des Plantes. The prize for the premier bloom was awarded to a grand bloom of Empress of India in this stand. The second and third prizes in this class were taken respectively by Mr. W. Leighton, gardener to J. K. Swallow, Esq., and J. H. Clements, gardener to Ald. T. P. Wood, with very good stands.

In all the other classes, save only the one above referred to, no money prizes were given, but certificates as in the two previous years.

In the local class for twenty-four blooms (gentlemen's gardeners) Mr. J. H. Clements was placed first with very good blooms, and he was also placed first with twelve Japanese, very good flowers, his varieties being Madame C. Audiguier (two), Lady Selborne (two), Fair Maid of Guernsey (two), Soliel de Levant (two), Mons. Lemoine (two), and Bouquet Fait (two). For twenty-four Japanese (twelve varieties) Mr. W. Leighton was first; J. Surguy, gardener to E. Mason, Esq., second. Mr. Leighton's stand was a very fine one and attracted much attention. His pairs were—La Frère Requier, Criterion, M. Marrouch, Astorg, Margot, M. Ardene, Peter the Great, Fair Maid of Guernsey, Cossack, M. Lemoine, and Reverie, two blooms of each. For twelve incurved (six varieties) Mr. J. Nelson, gardener to W. Britt, Esq., was first with fine flowers which might have been much improved in the hands of an experienced dresser. This want of proper dressing and setting up was noticeable in most of the exhibits, and an objectionable feature was the prevailing plan of exhibiting each bloom upon a large and in some cases elaborately cut and decorated collar of white paper. There was also a class for cut blooms devoted to amateurs, in which some neat but small blooms were shown. The principal prizetakers were Messrs. W. S. Clayton J. Baker, W. Slack, and E. Turner.

There was a fine display of large-flowering vars. in pots both incurved and Japanese, the finest lot in the Show being a group of eight plants, incurved and reflexed varieties, shown by Mr. J. H. Clements. These were grown as bushes about 3 feet high with fine foliage and carrying each twenty to thirty blooms, nearly all of them good enough for the exhibition table. The varieties were Lady Hardinge, Dr. Sharp, White Christine, Nil Desperandum, Jardin des Plantes, Golden Empress, Boadicea, and Barbara. The second prize was taken by Mr. G. Parkes, gardener to C. Markham, Esq., with beautifully fresh and bright plants considerably smaller than those from Mr. Clements. The prize for the premier plant incurved was awarded to Mr. Clements for Barbara. For the premier Japanese, Mr. G. Parkes with Jane Salter.

Some fine stands of cut flowers, not for competition, were shown by Mr. T. Gosling and Mr. T. Hallam. Mr. Thomas brought a number of large stands of cut flowers, mostly small blooms, not for competition, from Chatsworth. There was a small show of Primulas, moderately good plants, and a very fine display of fruit, especially of Grapes, which were shown by several exhibitors in grand condition. Two exhibits of Gros Colman from Mr. G. Staples, gardener to Rev. B. Hallows, Glasswell Hall, and Mr. C. Morris, gardener to Mrs. Smith Milnes, Dunston Hall, were superb, and have, I think, scarcely ever been surpassed. A very fine tray of fruit, twelve varieties, was exhibited by Mr. J. Surguy, which did him much credit. Messrs. T. Fletcher & Son, nurserymen, Chesterfield, were large exhibitors and materially assisted the Show. They showed Chrysanthemums, both plants and cut flowers; also ornamental table plants and some very beautiful wreaths and crosses of natural flowers, consisting principally of White Japanese Chrysanthemums, Bouvardias, and Maidenhair Fern. The orchestra was handsomely decorated with Ferns and foliage plants from Mr. W. Britt and Mr. F. Swanwick, the latter gentleman contributing a very large and fine specimen of Tree Fern, Cyathea princeps.

The indefatigable Hon. Secretary, Mr. John Hall (to whom and the President, Ald. T. P. Wood, the Society is deeply indebted), states that although no profit would be realised the receipts would be equal to the expenditure.

#### BASINGSTOKE.—NOVEMBER 25TH AND 26TH.

THE first autumn Exhibition of the Basingstoke Horticultural Society was held in the Volunteer Drill Hall on the dates named, and considering the lateness of the fixture and the earliness of Chrysanthemums this year the Show must be pronounced a gratifying success. A better hall for the purpose we have never seen, for besides being spacious it is as light almost as a conservatory; and it was well filled. In some of the classes the competitors were numerous, and very careful discrimination was necessary in adjudicating the prizes. Only a closely condensed report can be given of the Show.

Six groups of Chrysanthemums were arranged for the four prizes offered, the leading position being well won by Mr. Holdaway, gardener to Captain May, with plants ranging from 2 to 6 feet in height, bearing good blooms and excellent foliage. The great majority of them had been cut down—a practice almost indispensable for the purpose in question—each supporting about three blooms of exhibition quality. The pots were hidden by a bank of moss, and the arrangement was decidedly effective. Mr. Dawncey, gardener to J. Bramston-Stone, Esq., Birchfield; Mr. Champion, gardener to W. H. Blatch, Esq.; and Mr. Osmond, gardener to Major R. P. Warren, were awarded the remaining prizes in the order named for groups closely following each other in the order of merit. Specimen plants were weak, and are passed without comment.

Cut blooms were well represented, Mr. Neville, gardener to F. W. Flight, Esq., Twyford, Winchester, winning the chief position in the class of twenty-four varieties with good and fresh examples. Mr. Drover, nurseryman, Fareham, was second, leading Mr. Bowerman, gardener to C. N. Bovill, Esq., Hackwood Park, by four points out of a possible 144, Mr. Wills being placed fourth with the largest blooms of all, but a fortnight too old. The most notable bloom in the Show was a grand example of Beauty staged by Mr. Drover, who exhibited excellent stands not for competition, which were highly commended by the Judges. In the class of twelve incurved blooms the prizes fell to Messrs. Drover, Bowerman, and Flight, very close in merit, six collections being staged; and in the corresponding class for Japanese varieties (seven collections) to Messrs. Drover, Flight, and Bowerman. The smaller local classes must perforce be passed.

In table plants the competition was severe, the prizes falling to Messrs. Dawncey, Kneller, and Bowerman, the first-named exhibitor taking the chief prizes for Primulas, and the two latter for Poinsettias. Nothing in



the Show was more creditable to any of the exhibitors than the stands of Chrysanthemums and foliage; and of hardy shrubs, Ferns, and Grasses, staged by Miss Flight, who was the premier exhibitor in both classes, the tasteful association of the fruit of *Iris foetidissima*, *Arbutus*, Privet, Briars, with the flowers of *Laurustinus* and *Jasminum nudiflorum* being especially commendable. Splendid specimens of *Eucharis* were exhibited by Messrs. Bowerman and Weaver (gardener to W. W. Beach, Esq., M.P.), who were awarded equal prizes for them.

The prizes for three bunches of black Grapes were won by Messrs. F. Kneiler (gardener to W. Harris, Esq., Steventon Manor), Weaver, and Best (gardener to Chaloner W. Chute, Esq.) for highly creditable examples; and for white Grapes by Messrs. Bowerman, Weaver, and Kneller with excellent Muscats. Apples were of good average merit, and that is all we can say about them. Vegetables were very good indeed, the prizes going to Messrs. Kneller (Malshanger), Bowerman, and Dawncey in the order named. A beautiful group of plants arranged by Mr. Beach's gardener was highly recommended for a special prize, and a mark of commendation was granted for Christmas Roses exhibited by W. P. Stark, Esq. Very worthy of notice in the Show was a collection of ornamental flower pots and various other articles made from the waste slag of iron-smelting furnaces exhibited by Mr. Hilton of Southampton. As an example of artistically utilising waste matter we have seen nothing to surpass this peculiar ware, which is quite unique. This is a mere outline of the bright and well-arranged Show of a Society of which Mr. Holdaway is the able and courteous Secretary.

### PLANTING SMALL FRUIT BUSHES.

Those who may wish to transplant Gooseberry, Currant, and Raspberry bushes from one part of the garden to another, buy in fresh lots and make new plantations, may begin at once and get the work finished as soon as the weather will allow. November is one of the best of all months for shifting fruit bushes, or it may be performed in the early part of December. When planting has to be done we always determine its extent in the autumn, and when we can finish the work by this time we feel comfortable on the subject, as we know the bushes will be all right in the spring, and do well the following summer and onwards. At this season we can always be quite certain that the buds are perfectly at rest, and this is a great advantage. From January onwards, should the weather be mild, the buds may begin swelling and grow before the fact is known; then a rush is made to get the planting done before they become green, but it is too late, as no deciduous fruit bush can be transplanted after growth has commenced without being checked and injured to an extent which will not be recovered from for one or more seasons. It is the absolute certainty of escaping this which renders autumn or early winter planting so desirable.

It is astonishing the amount of ill usage a Gooseberry or Currant bush will bear when the buds are perfectly at rest, but when once they begin growing it is the reverse. When dormant in autumn the small bushes may be lifted, the soil shaken entirely from the roots, and the plants sent hundreds of miles on a week's journey without failure, but in spring they cannot be shifted with the utmost success, even including a large ball of soil to the roots. Let us settle, then, that autumn is the right time to plant, and let us plant so long as the weather is suitable in autumn. Annual planting is superfluous, and never allowing them to remain undisturbed for more than two years or so is just as bad. We like to determine where our fruit bushes will be now and for the next ten or a dozen years, and prepare the ground accordingly. All soil for fruit bushes cannot be too well prepared. It should be from 18 inches to 2 feet deep at least, free from large stones, and rich. Deeply trenching is an operation which may be done with advantage on bush fruit ground before planting. Light, sandy, shallow soil is not so good as medium heavy soil, although clay is no gain; but whether the ground be good or bad, it will always be benefited by being trenched and enriched before planting it with fruit bushes which are intended to remain in it for many years.

In ground rich on the surface but poor underneath we would trench all the surface down, bring up the poor subsoil and dig plenty of manure in after trenching. Where the soil is poor throughout a quantity of rough manure would be trenched to the bottom, and when trenching was finished more substantial soil would be dug into the surface. Some may think that rich ground will produce too much wood and too little fruit, but fine bushes and large juicy fruit will never be produced on poor soil. And then it must be remembered that when once the bushes are planted nothing more can be done in the way of manuring under the trees.

Where all the bushes are to be put together the whole of the quarter should be prepared from end to end, but where the plants are only put in here and there, such as is often done with Currants and Gooseberries, in putting them at stated intervals along the sides of walks, a station should be formed for each bush. This may be done by trenching a piece about 2 yards square or so, manuring it well and planting in the centre. As a rule it is seldom necessary to put new soil in for bush fruits, as none of them are so difficult to grow that they cannot be cultivated successfully in every garden soil. In getting new bushes from nurseries it is quite impossible to secure them with much earth attached to the roots, and, as I have said before, this is of no importance in the autumn; still no bush loses anything by being lifted with a ball of soil attached to the roots, and where they are only being taken from one part of the garden to another a ball of earth may as well be taken with each. In planting this, and in all cases, the hole for its reception should always be made larger by some inches all round than will admit the roots freely, and no attempt should be made to cram them into a small space.

Deep planting has no advantages, but firm planting is very beneficial. Planting them deeply to keep the wind from moving them is not to be re-

commended, and staking should be resorted to in preference. Pure manure being placed against the roots will not insure substantial growth. Wet puddly soil is ruinous, and must be avoided. The distance to plant must depend on the size of the bushes, but no plant which is intended to grow free should be put nearer its neighbour than will admit of this; 3 feet, 4 feet, and 5 feet apart are distances we plant Gooseberries and Currants. Raspberries are mostly put in rows from 8 inches to 1 foot apart in the rows, and 5 feet asunder. Old Gooseberry and Currant bushes which have become crowded or exhausted the ground, may be shifted with little or no loss at this time, and if carefully done they will improve afterwards, but as a rule it is cheaper in the end to deal with healthy young bushes.—

A KITCHEN GARDENER.

### ROYAL METEOROLOGICAL SOCIETY.

THE first monthly meeting of this Society for the present session was held on Wednesday evening, the 19th inst., at the Institution of Civil Engineers, 25, Great George Street, Westminster, S.W., Mr. R. H. Scott, F.R.S., President, in the chair. R. Aitken; N. E. Ballou, M.D., Ph.D.; F. C. Bayard, LL.M.; G. W. Brennan, A.M.Inst.C.E.; H. T. Burls; A. Chadwick, M.D., M.R.C.S.; R. Cooke; P. H. Emerson, B.A., M.R.C.S.; S. Johnson, M.B., C.M., L.R.C.P., F.R.A.S.; G. J. Lee, R. M. Mercer, L. P. Muirhead, J. D. W. Vaughan, and J. B. Wilson were elected Fellows of the Society:—

The following papers were read:—

1. "A New Method of Reading the Direction of the Wind on Exposed Heights and from a Distance, by H. Leupold," F.R.Met. Soc. The author has devised a very ingenious and simple electrical anemograph, which records both the direction and velocity of the wind on an ordinary Morse printing telegraph paper.

2. "Description of a Component Anemograph," by A. N. Pearson, F.R.Met. Soc.

3. "On the Injury by Lightning (April 28th, 1884) to the Monument to the first Duke of Sutherland at Lilleshall, Shropshire," by C. C. Walker.

4. "On the Mechanical Characteristics of Lightning Strokes," by Col. the Hon. Arthur Parnell. The main objects of this paper are:—First, To attempt to show that lightning is not a sort of electric fluid that descends from the clouds, injures buildings and persons in its course, and dissipates itself in the earth, but that it is a luminous manifestation of the explosion caused by two equal forces springing towards each other simultaneously from the earth and the under surface of the inducing cloud, and coalescing or dying out nearly midway between the two plates of the electrical condenser formed by the earth and the cloud. Secondly, To demonstrate that of these two forces it is the earth-spring or upward force alone that injures buildings, persons, or other objects on the earth's surface, and that constitutes tangibly what is rightly known as a lightning stroke. The author gives the details of 278 instances, the records of which are intended to demonstrate with more or less precision the existence of an upward direction in the force of the stroke.



### HARDY FRUIT GARDEN.

*Soil.*—Sweet fertile loam is the soil above all others that is recommended for fruit trees, and the form in which it is most liked is that of top spits with the turf from an upland pasture. It can be so had by a few favoured persons, the remainder having to provide the best substitute for it they can. It may lighten the efforts of many in this important matter to explain that loam consists of about half clay and a mixture of silicious sand, vegetable matter, and sometimes carbonate of lime. It cannot, therefore, be difficult to prepare a compost sufficiently like loam to answer well for fruit trees. One of the best substitutes we ever used was pond mud mixed with lime, and so thoroughly sweetened by frequent turnings and exposure to the air that it would be shovelled up almost like a heap of ashes. A compost, of which we are seldom without a large heap, consists of weeds, turf trimmings, road scrapings and sidings, and all the ordinary garden refuse, with stable dung, coal ashes, lime, and wood ashes, is turned several times so that the ingredients are thoroughly mixed. It is then ready for use at any time, and is either used alone or mixed with ordinary garden soil for new stations for fruit trees, or to renovate soil exhausted of fertility about the roots of established trees. We consider our compost preferable even to the ideal turfy upland loam, because, in addition to all the elements of fertility necessary to successful fruit culture, it has thorough mechanical division, and never can settle down into a compact heavy inert mass. Turf sods, on the contrary, do frequently so settle down as the herbage, crowns, and roots of the grass decay, and be it remembered that it is precisely this decaying vegetable matter which often imparts a fictitious fertility to the soil in which it grew; and when the nutriment which it affords to the tree roots is exhausted, then the soil is comparatively worthless, and the tree soon gives signs of incipient debility. When turf sods are used for stations they require no preparation whatever, and should be carted from the pasture, chopped to pieces, and used at once, so that the tree roots may have the full benefit of the decaying plants. Quite one-third part of coal ashes should be mixed with the chopped turf to render the soil porous



when the turf is decayed, so that nutriment in the form of house sewage or other liquid manure may be poured upon it and the requisite degree of fertility to keep the trees healthy and fruitful be sustained. Regard soil as a medium for conveying food to the trees, and then you will remember to keep it stored with nutriment, which the greedy roots are constantly withdrawing from it during the season of growth, and which must be as constantly replaced by fresh supplies.

*General Work.*—Pruning, dressing, and training of trees must now be done. Thin crowded spurs and branches. Remember that light and air must enter freely among every part of the branch-growth to keep it healthy and fruitful. Retain no sickly or useless fruit trees, but on the other hand destroy none hastily. It is always worth while considering whether a healthy established tree of an inferior sort may not be turned to account by grafting good sorts upon it. So-called pyramids received from the nursery with a couple of feet of bare stem at the bottom should be headed back to induce branches to break freely from the bottom, which they invariably do when the planting is well done. Do not prune Nut or Filbert trees till the catkins or male flowers are fully developed and give out pollen freely. It is owing to premature pruning that barren Nut trees are so common. Pearson's Prolific has again yielded a heavy crop of its fine nuts. For poor thin soils we know no more profitable crop than it affords. The tree is singularly robust and vigorous, requiring no manure or preparation of stations, thriving with surprising vigour where Red Filbert barely exists, coming early into bearing, and continuing fruitful under ordinary care. They should be planted 10 feet apart, or 538 to an imperial acre.

#### FRUIT FORCING.

*PEACHES AND NECTARINES.*—*Early House.*—If ripe fruit is wanted in May and all cleansing has been brought to a close, it will be necessary to close the house, though it is preferably done about a fortnight before fire heat is applied. Old trees that have been carefully managed and forced for a number of years are more easily started than younger trees, but in either case it is better to bring on the trees slowly in the early stages, so as to insure a strong blossom, and on this account an early start is of great advantage, as it admits of gentle excitement until the buds show signs of swelling without having recourse to much fire heat, and when owing to unfavourable weather the heating of the pipes is thought advisable, they should be allowed to become cool before night. If the roots are confined, as is now generally the case, to inside borders where early forcing is practised, the borders should be examined and supplied with tepid water until every particle of the soil is properly moistened down to the drainage, when a good ridge of fermenting Oak leaves and short stable manure may be introduced with advantage to the trees, which, as a means of securing a moist genial temperature, will be in every way superior to that obtained from hot-water pipes. Syringe the trees twice a day with tepid water, and turn on a little heat in the morning so as to allow of ventilation on all favourable occasions to sweeten the atmosphere, as trees that are forced with open ventilators always break stronger than others that are brought on in a close house in which the buds never become dry. The temperature at starting should range at 40° to 45° at night, and 50° to 55° in the daytime, with a rise of 5° to 10° from sun heat until the buds are moving, when a slight increase on fine days will be advisable. Where the roots have the run of outside borders the latter should be protected with some kind of non-conducting material to throw off cold rain and snow and keep the surface roots in activity. Nothing is gained by starving the roots while the branches are growing.

*Succession Houses.*—Take advantage of all weather unfavourable for outdoor operations for getting pruning and cleansing brought to a close, and see that the roots of trees under fixed roofs do not suffer for want of water, otherwise the buds are likely to fall when the forcing time arrives, a season will be lost, and root-pruning need to be resorted to to bring the trees again into a bearing state. If the trees have been infested with brown scale they should be washed with soft soap and water, 8 ozs. of the former to a gallon of the latter, and with a brush, so as to dislodge the insects, being careful not to injure the buds; and an application of this kind repeated is mostly effectual and is better than dressing with a composition that leaves a thick deposit, which closes the pores and often disfigures the fruit when it is washed off by the syringe. When all is finished a free circulation of air should be allowed to pass through the houses until the time arrives for starting the trees, and where practicable they should be kept clear of plants that are subject to insects or liable to injury by a few degrees of frost.

*Young Trees.*—Those that have become too strong should be lifted, relaying the roots in new loam free from animal manure, training the trees upon the extension principle, and allowing them to grow into a fruitful state, whilst old ones that lack vigour may be strengthened by the removal of the surface soil, and watering with diluted liquid manure prior to replacing it with new compost of rich calcareous loam, and having intermixed 20 per cent. each of burned refuse and bonemeal, making it firm over the roots.

*CUCUMBERS.*—In consequence of the cold weather, sharp firing has been resorted to in order to maintain a moderately high temperature; but during cold weather, when there is any difficulty in producing and maintaining the desired temperature, covering the lights at night with mats will obviate the necessity for heating the pipes to an injuriously high temperature, saving a considerable amount of fuel, and at the same time obtaining a more genial and equable temperature. The plants whilst producing and swelling their fruits like liberal treatment, hence copious and frequent supplies of water or liquid manure in a tepid state should be given, for by this time the soil will be filled with active hungry roots. In this case there is little danger of giving too much water, provided

always that the drainage is perfect and the bottom heat kept at 75° to 85°. When the needed set of fruit is effected remove all the male flowers from the plants, and be careful not to overcrop. The night temperature should range from 60° to 65° during severe weather and on mild nights 65° to 70°, and a day temperature of from 70° to 75°, advancing 5° to 10° from sun heat.

#### PLANT HOUSES.

*Tydæas.*—Now that the days are dark and sunless these plants will need every attention, or their foliage will become injured and the plants much disfigured. To preserve the plants dwarf and compact they should be kept as close to the glass as possible. The temperature at night should be maintained as near 60° as possible, and the atmosphere of the house in which they are grown must be moderately dry. If kept in a close, moist atmosphere, the foliage is very likely to suffer from damp, or if much moisture is allowed to hang about them the foliage will be browned and unsightly. These plants should be watered carefully at their roots, at the same time being careful that they do not suffer by an insufficient supply. Weak stimulants should be supplied every time they need water. After the earliest plants have flowered, if they are varieties that form underground stems, they should be supplied with water and stimulants until the growth ripens naturally.

*Gesneras.*—Plants intended for late flowering must be treated the same as recommended for Tydæas; in fact, both can be grown from the present time under exactly the same conditions. Those in flower, or fast approaching that stage, must, if they are arranged in the stove amongst a mixed collection of plants, have some position selected for them where they will not be syringed when this operation is done for the good of other plants. In no stage of growth should water be allowed to fall upon their foliage or it will be injured. Select for them the driest position the house affords, for if arranged in too much moisture the foliage will damp, and the beauty of the plants will be destroyed. After flowering treat as advised for Tydæas until the tubers are developed and thoroughly matured.

*Epiphyllums.*—It is the practice in many gardens to keep these plants from flowering as long as possible, until the autumn-flowering plants are getting past their best, and flowers begin to be somewhat scarce. They may still be safely kept in any cool house where frost can be excluded, if care and judgment is exercised in supplying them with water. The soil must not be saturated with water or the roots will perish; on the other hand, the soil should never be allowed to become dust-dry. This is a common practice, and cannot be too strongly condemned, for sufficient water should always be given to keep their stems plump and fresh. When required to bloom, if introduced into a night temperature of 50° to 55°, with a rise of 5° by day, they will quickly unfold their bright gorgeous flowers. Plants grown on small stems have a very effective and beautiful appearance when arranged amongst *Adiantum cuneatum*, using the latter as a groundwork, while the *Epiphyllums* rise just above them. In staging these plants they should always be elevated above surrounding plants, or they will fail to display their full beauty. These are grand basket plants, and when well flowered are very handsome if suspended from the roof of any house.

*Libonias.*—The great secret in growing these beautiful dwarf flowering plants is the thorough maturation of the wood, otherwise the plants flower but poorly, and are of but little decorative value. This has been a capital season for them, and the wood is firm, and the plants are showing abundance of flower buds. Bushy plants in 5-inch pots well flowered are invaluable for the conservatory or any other structure kept gay with flowering plants. Our plants have been kept as cool as possible up to the present time, and will be retarded for some time longer in the greenhouse. A good place for them is a shelf close to the glass. If any of these plants are wanted in flower select the earliest, and they will come forward quickly if introduced into an intermediate temperature. Water carefully, and supply weak stimulants every alternate time they require water, or apply a little artificial manure to the surface of the soil.

*Serieographis Ghiesbreghtiana.*—The wood of this favourite old greenhouse plant has been well ripened this year, and our plants are showing an unusual number of blooms. They are naturally early, as the result of the hot summer and very mild autumn we have had, and may be retarded for some weeks longer before they come into flower, when they will be found more useful than just now. These plants may be safely retarded in any structure where the temperature at night does not fall below 40°. Our plants occupy a vinery from which the foliage has been removed, where the ventilators have been kept open day and night when the weather would allow of this being done. They are in the most perfect health with fine dark glossy foliage, the result of supplying them with soot water when they needed water at their roots. There is no finer plant in cultivation for conservatory decoration when well grown than this one, and if the foliage is retained a good colour its light sprays of scarlet flowers are displayed to perfection. These plants should be very carefully watered while in a low temperature.



#### DRONES.

MANY people are of the opinion that drones are simply created to be killed, and are of no use except to eat the honey, a notion that



I would like to see dispelled. Of all insects I know none is more useful than the bee. Many serve a double, and in fact many purposes, some of which we can see the beginning and the end, but with the bee it is different, so manifold are the purposes it serves. We see it enter a flower for the ostensible purpose of robbing it of its nectar, but while it is so doing it is perhaps unconscionable that it is at the same time fertilising and cross-fertilising fruit blossoms and flowers, which will in a time give pleasure and profit to many. I leave it to an abler pen than mine to fully describe the many uses of the bee and its produce; but I must try to impress the enemies of the drone with its usefulness. Everybody who keeps bees knows that but few drones accompany either first or second swarms, while the old stock has many. It has been thought by some that the lazy drone, as he is termed, is too great a glutton to leave a well-filled larder and migrate with the swarm to an empty house. I look upon this in quite a different light. My opinion is that, as is often the case when a swarm issues, there are not enough bees left to hatch the brood, which but for the presence of the drones would die. These drones, though taking no part in the internal economy of the hive, increase the heat and moisture so essential to the brood in an immature state.

Both books and people teach that drones are killed at a certain period, but this though partially true is misleading. If the weather becomes wet and cold after the young queens have been served, and sometimes before it, drones are often killed or put out the hive; but if the weather continues fine and the bees are collecting much honey, such as they do in a season like this has been at the Heather, the drones are allowed to live. Their presence not only assists to hatch the brood through the heat generated, but materially assists in comb-formation, now more required than ever, as the honey is more plentiful and the nights colder than they were in July. Thus we see not only a double but a treble purpose and use in the drone, which is liable to be lost sight of by many.—LANARKSHIRE BEE-KEEPER.

### FOUL BROOD.

#### ITS CURE BY FASTING WITHOUT THE USE OF DRUGS OR CHEMICALS.

[A paper read by Mr. D. A. Jones before the North American Bee Keepers' Association, in Convention at Rochester, New York, October 29th, 1884.]

THERE has been so much said of late on this subject that it would seem to be pretty well worn out, but there are yet many apiaries suffering from the malady where a simple and effective treatment would be gladly tried if known. I have experimented considerably, and found that the disease can be cured without any difficulty, without any medicine, and without any danger of spreading the disease, when properly managed, without any possibility of its ever returning.

Perhaps I may be allowed to describe the disease as I have found it in Canada. In speaking of foul brood I would first distinguish it from all other diseases, such as chilled brood, over-heated or scalded brood, neglected brood, starved brood, dead brood caused by shipping bees, and another kind of dead brood which resembles foul brood in some respects, and is doubtless what some call a mild type of foul brood. It would make this article too long to describe minutely the appearance of the various kinds of dead brood above referred to, and the various causes of its appearance. I also do not wish to interfere with any other person's system of curing foul brood, but simply to give my own, which has proved successful with myself and scores of others, in the hope that those who have tried various remedies unsuccessfully may be encouraged to try once more, and with no further expense, and with but little trouble, rid their apiaries of this foul disease. I do not believe, with some, that there is only one method of cure (and that their own). I know, by experience that it can be cured in various ways, and I intend to continue my experiments with the aim of still further simplifying, if possible, the method of cure.

Some imagine that foul brood may be discovered by the foul smell arising from the diseased colonies. This is true as far as it goes, but if one waits until then there is a probability that very many if not all the colonies in his apiary have become diseased. Before such a condition had resulted the disease would have been running for a long time in some one or two colonies, from which, especially in spring or fall when robbing is carried on more or less, the surrounding hives would surely be contaminated and become themselves centres of infection. A single drop of honey taken from a diseased hive, if given to the larvæ of a healthy hive, is sufficient to start the work of what, unarrested, is inevitable destruction. When the disease becomes very bad much of the brood dies before it is capped over, and never is capped after it once dies. I have frequently seen colonies that had become so diseased that a very large portion of the brood had died just before it was capped, and some of the larvæ before it had got its full growth.

In examining the larva just before and after it dies, I find that a dark

spot first appears about its centre, and increases in size very rapidly. Shortly after its appearance short thread-like veins extend from this centre towards both extremities of the larva and appear to plant two new spots, from which more veins soon radiate. The veins and spots then gradually enlarge until the entire larva is uniformly affected. The skin of the larva also commences to wrinkle and shrivel up on the top side, the larva flattens down and gradually recedes to the back of the cell, and finally becomes the brown putrid mass which distinguishes foul brood so markedly from all the above-mentioned maladies.

This brown ropy matter has a sticky and tenacious, almost elastic, consistency, and if a pin head be inserted in it and drawn slowly out it will stretch like indiarubber and jerk back into the cell again. The bees make efforts to remove it, but after a few trials give it up in disgust, and philosophically endure what even they find too incorrigibly obdurate to cure. Allowed to remain this viscid substance in time dries up at the bottom of the cell and would not be noticed except by a close observer.

Diseased larvæ that are capped over are indicated by a sinking of the capping compared with the fuller appearance on the capping of healthy larvæ. A small puncture is also made by the bees in the capping in size from a pinpoint to a pinhead. This seems to satisfy them that there is nothing to expect, and the cell is left to itself. If the apiarist opens such cells carefully and finds the contents as above, he may be sure he has foul brood, but if the larva retains its shape and size, and the skins seem perfect, even though somewhat shrivelled, that is not foul brood. These punctures are sometimes made in merely dead brood capping, their non-emergence at the proper time being doubtless noticed by the bees and thus investigated. Wherever foul brood exists in a colony during the brooding season the brown ropy matter in the cells may be found.

I could describe several methods of cure, but the following I think will be ample, and as it is very simple and easily performed it comes within the reach of everybody. If the bees have any brood I do not destroy that brood. I remove all the bees that can be spared from the hive, leaving only sufficient to take care of the brood while it is hatching, taking the queen with the bees. I endeavour to have them all filled with honey before removing. They are then shaken in a box with a wire screen lid, and placed in a box in a dark and cool cellar. The box should be turned down on its side; the bees will cluster on the other side which will then be uppermost, and the wire screen forming a side for the time being will allow of free ventilation. They should be left thus from three to six days according to the temperature and condition of the bees, which may be determined by watching, and when a few bees fall down and begin to crawl in a weak stupid manner, and those still clustering appear to have shrunk, they may then be removed, placed in a hive and supplied with comb or foundation the same as a swarm. A little honey or syrup should be given them, when they will soon be out foraging again for themselves. I have not been able to see any difference between swarms so fasted until the foul honey in the abdomen has been consumed, and an ordinary swarm of similar size. Both seem to go to work with the determination that characterises their race.

Some still say this fasting plan is a failure, but where that has been said it cannot have been properly tried. As soon as the brood which was left in the foul-brood hive with some bees as directed, is hatched out, they should be treated like the others, the combs rendered into wax, and the hive and frames boiled for a few minutes in hot water. The wax in the form of foundation may be inserted in the same frames and be ready in the purified hive to receive with perfect safety the former inmates as soon as their purification is complete. The honey in the foul-brood combs if extracted and boiled for ten minutes, can be fed to bees without any fear of bad results. Boiling will only kill the germs of the disease. I have subjected foul-brood combs to a temperature of 35° below zero and allowed them to freeze all winter, then placed one of them in a healthy nucleus, and as soon as it was filled with brood and commenced to hatch I have found at first examination a very large number of larvæ affected with foul brood. Frost will therefore not kill the disease.

I search out every case of foul brood in this part of Canada, and have never failed to effect a cure at the first attempt. In fact, there are a great many in Canada now who no longer dread foul brood as they used to, knowing they can cure any colony with one or two hours' labour.

We have had some good and valuable hints on foul brood in the journals, and some sheer nonsense. Fine-spun scientific theories are sometimes good, but solid facts from extensive practical experience is what suits me best.

So soon as I shall be able to find time it is my intention to write up more fully a complete and exhaustive article treating on the disease, its origin, and its cure, and by illustrations I hope to make it perfectly plain and clear, so that the disease may not be looked upon as at present by many as an incurable one.



## SPURIOUS HONEY.

As it is customary with most, if not all, honey-producers in America to label all tins, jars, and all packages of honey with the name of the apiary, the proprietor, and his address, "A Yankee Reader" will feel greatly obliged if "A Lanarkshire Bee-keeper" will kindly give the name and address or whatever there may be on such tins of the so-called "Orange Blossom Honey" (see page 361) which he affirms is a poisonous compound of glucose highly flavoured and coloured.

"A Lanarkshire Bee-keeper" is very unkind and unjust in his remarks, as he at one stroke stamps all Yankees as frauds, humbugs, and swindlers. Such honourable men as L. L. Langstroth, the veteran Huber of America, who gave "A Lanarkshire Bee-keeper" the bar-frame for his Stewarton hive, Professor A. J. Cook, A. I. Root, L. S. Newman, G. M. Doolittle, Hethrington, Muth, Grimm, Grimby, Given, Hutchinson, D. A. Jones, and a host of others through the length and breadth of the land are not so mean as to offer an adulterated article and palm it off as "Orange Blossom Honey" or any other honey.

If "A Lanarkshire Bee-keeper" cannot furnish such names or address that will give a clue to the guilty party, I shall conclude it is as much a Scotch or English as a Yankee fraud. "A Lanarkshire Bee-keeper" evidently knows what "Orange Blossom Honey" is. As he says that it is sold in tins as such, there need be no difficulty in distinguishing between it and the genuine. Now if he has genuine "Orange Blossom Honey" (and such an article there is) it is a Yankee production never found on the moors of Lanarkshire, and very different from Heather honey or any other; but "A Lanarkshire Bee-keeper" presumes Heather honey is the only genuine honey. It possibly is in Scotland. In America you can have genuine samples and quantities of Orange Blossom Honey, Basswood, White and Red Clover, Mountain Sage, Horsemint, Canadian Thistle, &c., &c. Now as all these and several other grades of pure honey (as genuine as the beef and Wheat and flour so many Scotch and English eat, imported from America) can be purchased here at 3½d. and 4d. per pound, who would trouble to make a compound of glucose, &c., and to offer it as any one sample of this, that, or the other honey? Now I happen to know a producer and dealer, whose name is mentioned above, who has shipped several hundred pounds weight of honey to England, and a more honourable and just man is not known in Lanarkshire in Scotland, or England.

Now if "A Lanarkshire Bee-keeper" would only acquaint himself with the Yankee bee-keepers in their advanced methods of apiculture and read their bee journals, their volumes of bee lore, essays, and papers read at State conventions by great and experienced men, instead of setting the whole fraternity of British bee-keepers against them, he and all readers of the Journal would greatly benefit by such action. Knowledge is power, and America is the largest honey-producing country in the world, and every bee-keeper in the United Kingdom should know the source of England's supplies of honey, both home produce and imported, as well as meat, corn, fruit, and the thousand and one things she must import.—T.

## TRADE CATALOGUES RECEIVED.

Arthur Jeffkins & Co., Westerham, Kent.—*General Catalogue.*

Wrench & Sons, Ipswich, and 57, Holborn Viaduct, London.—*Illustrations of Conservatories.*

Richard Dean, Ranelagh Road, Ealing.—*Catalogue of Potatoes.*



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Books** (*Farquhar & Co.*).—You will find Mr. D. Thomson's "Handy Book of the Flower Garden," published by Messrs. Blackwood & Sons, a full and reliable work. As a small treatise "Flower Gardening for the Many," published at this office, post free 4½d., is useful.

**Properties of Grapes** (*T. G.*).—We do not know that the varieties named possess any especial qualities differing from ordinary Grapes. The juice of sweet Grapes consists of a considerable quantity of Grape sugar, a peculiar matter of the nature of yeast, and a small portion of extractive, tannic acid, bitartrate of potassa, tartrate of lime, common salt, and sulphate of potassa, the whole suspended or dissolved in a large quantity of

water. Sour Grapes contain in addition a peculiar acid isomeric with the tartaric, called paratartaric acid. Grape juice, therefore, embraces all the ingredients essential to the production of the vinous fermentation, and requires only the influence of the atmosphere and a proper temperature to convert it into wine.

**Heating Greenhouse** (*J. A. S., Bury St. Edmunds*).—A gas-heating conservatory boiler has been advertised for some weeks past in the Journal, and with pipes from this boiler properly arranged a small conservatory can be well and safely heated. If you send a plan of the house or state the length of piping needed to the advertiser your letter will have attention and the cost of the apparatus obtained.

**Gros Colman Grapes** (*A Lady Gardener*).—We fear you cannot do anything now to improve the flavour of the fruit. If you had given "plenty of fire heat" sooner, so as to have had the Grapes well ripened by the end of September, they would in all probability have been of much better quality. This Grape is often inferior when grown under cool treatment and ripened late in the season, but grown in a house in which Muscats ripen well Gros Colman is usually of good quality.

**Heating Greenhouse** (*H. K.*).—Three rows of 4-inch pipes would suffice for your purpose. Fawkes' small work on heating would probably be of service to you. It can be had from this office, post free, for 1s. 1d.

**Rhea** (*P. G. F.*).—Some information respecting this plant was communicated to the Society of Arts a short time since by Dr. J. F. Watson, and no doubt you could obtain the particulars required by application to the Secretary, Mr. H. Trueman Wood, 18, John Street, Adelphi, London.

**Insects on Brussels Sprouts** (*Hattewell*).—Aphides have been unusually prevalent this year on Brussels Sprouts, Savoys, Cabbages, and most other plants of this family, in consequence, no doubt, of the remarkably dry season. The frost will destroy the insects, which are not likely to do any further injury.

**Anemones Growing** (*Idem*).—It is quite natural for Anemones to grow at this season of the year when the tubers have been left in the ground. These growing plants are rarely seriously injured in winter, and almost invariably flower well in spring. Your plants in window boxes will be quite safe, and those in pots will succeed in a cold frame, ventilated abundantly during all favourable weather; but would in all probability be better planted out in clumps, not dividing the plants separately.

**Tomato Plants Decaying** (*H. G. B.*).—Undoubtedly your plants are diseased, but we are without sufficient data to enable us to account for their unsatisfactory condition. Are they exhausted by heavy cropping? Are the roots active and carefully attended to in watering? Have the plants been allowed to grow freely, and then had much of the growth cut off at once in pruning? Has liquid manure been given in excess? Any mistakes of the nature indicated, or a combination of any of them, would contribute to the collapse of the plants. The temperature of the house, too, may have been too low occasionally, and you will not err by raising it 5°, a little more rather than less if the atmosphere is moist.

**Concreting Vine Border** (*D. E.*).—As the soil rests on gravel we should not think of concreting the border. There is no necessity whatever for doing so. The roots may be kept near the surface by mulching the border heavily in summer to keep the soil moist near the surface. The roots will remain where the food is if it is a condition to be appropriated, which it is not if the soil be dry. They will only go into the gravel if they cannot find the moisture they need in the better soil above it. Cut down the young Vines now to the extent desired, and plant when they commence growing in the spring, in the meantime keeping them cool and the soil moderately moist, as allowing the roots to become quite dry is injurious.

**Insects on Cytisus** (*I. E.*).—The spray sent is seriously infested with mealy bug that already appears to have done much injury, and it will be well if the plant is not beyond recovery. Cut off all such portions as you have sent and burn them, then forcibly syringe the others with strong warm soap-suds, in each gallon of which half a wineglassful of petroleum has been mixed by violent agitation, also continuing the agitation all the time the solution is being used. It will be advisable to spread a mat or something on the border, or an inch of dry sawdust to prevent the soil being saturated; for it must be understood that a mere sprinkling will be of no use, but the mixture must be used unsparingly and with all the force that can be applied to the syringe. Give a thorough syringing with pure water an hour afterwards, and do not allow the sun to shine on the plant until the foliage is dry.

**Syringing Fruit Trees** (*Idem*).—We do not remember receiving an inquiry from you on this subject. It is an excellent plan to syringe trees in houses with a solution of Gishurst compound, nicotine soap, tobacco water, or other approved insecticide just before growth commences, and again before the flowers expand. The trees are then usually clean until after the fruit is set, and after that they may be kept so by the free and systematic use of pure water. We never fumigate houses in which fruit is grown for the sufficient reason that it is not necessary to do so, the trees being kept clean by the use of the syringe. Some persons do not appear as if they could use this valuable article and true gardener's friend effectively. They squirt about in an indiscriminate manner, and think they have done their duty; but that is not syringing. Our remarks are now general and founded on the fact that we have had more difficulty in teaching inexperienced young men to syringe well than to make them expert in the use of any other implement. Judging by the splendid crops of fruit, and the clean trees in Mr. Rivers' orchard houses at Sawbridgeworth, there is no practical difficulty on the point to which you direct our attention. If there is scale or mealy bug on your trees syringe them with the petroleum mixture at once.

**Physalis Alkekengi** (*Dr. Brodie*).—The fruit appears to be that of the species named above, which is known in the United States as the Strawberry Tomato, and is eaten both cooked and raw. Several other species of *Physalis* yield edible fruits, which are chiefly valued for their diuretic properties.

**Japanese Chrysanthemums** (*A Young Beginner*).—You cannot do better than note the varieties that you will find in the reports of the shows during the next few weeks as having been staged in the winning stands. The following, however, are good:—Elaine, James Salter, Fair Maid of



Guernsey, Fulgore, Gloire de Toulouse, Cry Kang, Fulton, Bouquet Fait, M. Ardene, Peter the Great, Madame Lemoine, Meg Merrilees, Red Dragon, Bronze Dragon, Madame C. Audiguier, Comtesse de Beauregard, Madame Berthie Rendatler, Grandiflora, Sarnia, Garnet, Criterion, La Nymple, Fleur Parfait, Nuit d'Hiver, Ethel, L'île de Plaisir, Abdel Kader, Jane Salter, L'Incomparable, Bismarck, Mdle. Moulise, The Daimio, The Mikado, M. Delaux, The Sultan, M. Crousse, Boule d'Or, Père Delaux, and Lady Selborne. Sulphate of ammonia is a powerful stimulant, and valuable for Chrysanthemums when given in the right quantity at the right time. Mr. Davis is a safe adviser, and you may follow his instructions.

**Tuberose Culture (Town Gardener).**—As the growths die the supply of water must be gradually lessened until the soil is comparatively dry, and they may be kept in this state until potting time. When the bulbs are being potted, which, in order to extend the flowering period, should be done at intervals of a fortnight from February to the middle or end of June, all the little bulblets and eyes should be rubbed off, and any suckers that may afterwards spring from the bulb be immediately removed, so as to concentrate the sap stored up in the bulbs to the production of flower spikes. The Tuberose delights in a rich sandy loam with a sprinkling of leaf mould, and should be grown in 3-inch pots, burying three parts of the bulb, from which the old fibrous roots have been previously cut, in the soil. The pots should then be plunged to the rim in a Melon or Cucumber frame to start the tubers into growth, and subsequently the plants should be grown on near the glass to insure a sturdy growth. The soil should be kept rather dry until the flower stem appears, and when this is about 6 or 9 inches high, the plants being sufficiently moist at the roots, should be shifted into 6-inch pots, employing all loam. After this water should be withheld from the roots for a few days until they have taken to the new soil, and as the pots become filled with roots diluted liquid manure should be given. The plants should be syringed twice a day, if in a high temperature, to keep them free from the attacks of red spider, to which they are subject; but when the flowers begin to expand, syringing, which would cause the flowers to fade, should be discontinued, and the plants kept in an airy greenhouse or conservatory.

**Climbing Roses (Idem).**—The following are good varieties, and useful for training to walls or pillars:—Gloire de Dijon, Climbing Devonensis, Maréchal Niel, William Allen Richardson, Cheshunt Hybrid, Belle Lyonnaise, and Lamarque.

**Names of Plants (M. H. S.).**—The red berry is *Euonymus europæus*, and the white one *Symphoricarpos racemosus*. (Mrs. Webster).—*Athyrium Filix-femina* var. *depauperatum*. (H. T.).—Your Orchid is apparently a small variety of *Odontoglossum gloriosum*; it certainly is not *O. Alexandræ*. (Subscriber).—The plant is not an *Acacia*, but is named *Gleditschia sinensis*, and can be propagated by seeds sown in spring after they have been immersed in warm water for several hours, or by grafting it upon stocks of other species, such as *G. triacanthos*. (J. P.).—We do not undertake to name varieties of florists' flowers.

#### COVENT GARDEN MARKET.—NOVEMBER 26TH.

BUSINESS very quiet, large supplies of Nova Scotia and Canada Apples reaching us at low prices, and all classes of goods in heavy supply. Kent Cobs dull. A large cargo of St. Michael Pines to hand.

##### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. ..	½ sieve	2 6 to 3 6	Oranges .. ..	100	8 0 to 12 0
Chestnuts .. ..	bushel	16 0	Peaches .. ..	per doz.	3 0
Cobs, Kent ..	per 100 lbs.	65 0	Pears, kitchen ..	dozen	0 0
Currents, Red ..	½ sieve	0 0	„ dessert ..	dozen	1 0
„ Black .. ..	½ sieve	0 0	Pine Apples English ..	lb.	4 0
Figs .. ..	dozen	0 0	Plums .. ..	½ sieve	0 0
Grapes .. ..	lb.	0 6	Strawberries ..	lb.	0 0
Lemons .. ..	case	15 0	St. Michael Pines ..	each	7 0

##### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes ..	dozen	2 0 to 4 0	Lettuce .. ..	dozen	1 0 to 1 6
Beans, Kidney ..	lb.	0 3	Mushrooms ..	punnet	0 0
Beet, Red .. ..	dozen	1 0	Mustard and Cress ..	punnet	0 2
Broccoli .. ..	dozen	0 9	Onions .. ..	bunch	0 3
Brussels Sprouts ..	½ sieve	2 6	Parsley .. ..	dozen bunches	2 0
Cabbage .. ..	dozen	0 0	Parsnips .. ..	dozen	1 0
Capsicums .. ..	100	1 6	Potatoes .. ..	cwt.	4 0
Carrots .. ..	bunch	0 3	„ Kidney .. ..	cwt.	4 0
Cauliflowers ..	dozen	2 0	Rhubarb .. ..	bundle	0 4
Celery .. ..	bundle	1 6	Salsafy .. ..	bundle	1 0
Coleworts .. ..	dcz. bunches	2 0	Scorzonera .. ..	bundle	1 6
Cucumbers .. ..	each	0 2	Shallots .. ..	lb.	0 3
Endive .. ..	dozen	1 0	Spinach .. ..	bushel	2 0
Herbs .. ..	bunch	0 2	Tomatoes .. ..	lb.	0 6
Leeks .. ..	bunch	0 3	Turnips .. ..	bunch	0 4



HOME FARM

#### IMPORTANT LITTLE THINGS.

##### HEDGES.

THAT sure sign of slovenly farming, badly kept hedges, probably led to the substitution of wire fencing for them; and when the fencing is well done with iron standards and posts it has much to commend it to our favour, but wire strained to

wooden posts is a perennial source of trouble and should be avoided if possible. A quickset hedge of Whitethorn is the most common and best form of hedge we know. Now is the time for planting new hedges, and upon the manner in which this is done will depend the subsequent condition of the hedge. We never had a better hedge than one planted in heavy loam with a clay subsoil which was previously trenched two spits deep. The plants were some 30 inches in height, of clean, stout, sturdy growth, with plenty of healthy roots. A shallow trench was opened, care being taken to have it wide enough for the roots to be spread out at full length, a line stretched along the middle of it, and the Quick was planted against the line a foot apart, especial care being given to spreading out the roots in the trench and covering them well with soil, pressing it firmly upon the roots by treading. With the exception of keeping down weeds the hedge was left untouched until after the growth of the second year from the time of planting was fully matured, and then the plants were cut down to 6 inches from the ground. In the following year each plant produced several shoots or stems of great vigour, which were let grow unchecked till autumn, and then both the sides and top were clipped, and thus was the foundation laid of a hedge which subsequently became so compact that no animal could force a way through it. The ordinary method of planting only 3 or 4 inches apart was avoided as being decidedly faulty, the growth from plants a foot apart being proportionately more vigorous and healthy, and the lateral growth quickly forming an impenetrable barrier admirably calculated to keep out trespassers and to keep in live stock.

The Sussex method of excavating a ditch—throwing up the whole of the soil on one side only and planting the hedge on the top of it, is worthy of adoption in shallow or wet soils, affording as it does at once greater depth of soil and thorough drainage. Standard fruit trees are sometimes planted at intervals in these hedges, and we have seen such trees of both Plum and Apple heavily laden with fruit; but as the fruit trees gain size the hedge suffers, and the best plan then is to stretch a few lines of galvanised cable wire along it, or gaps will occur and the hedge will be worthless. Wonderful things are some of these old Sussex ditches. We have a lively recollection of a long hunt after some missing cattle on a hot summer's day, and at length finding them in a ditch comfortably ensconced beneath an overgrowth of Brambles out of the way of the flies.

It is decidedly wrong to plant hedges of Quick outside belts of trees. For a time all goes well, but as the trees become large the spreading branches overshadow the hedge so much that the growth becomes weakly and much of the Quick dies. Replanting is then useless, the young plants having no chance in the unequal contest with the greedy roots of the trees, which lay hold of the freshly stirred soil in a single season of growth and soon starve the Quick. Holly is the best undergrowth for such a position. We have occasionally seen thickets of it in perfect shade close up to the stems of old Beech trees, with the evergreen foliage glistening with health and the growth so dense as not easily to be got through. This is all the more remarkable from the fact of the Beech being a surface-rooting tree, the roots becoming so closely interlaced that it would appear impossible for other roots to exist among them.

##### FENCES AND GATES.

Upon the home farm under our care we have several miles of hedges and fences and some fifty gates. Thirteen years ago we had several kinds of fencing put up by way of trial. Solid iron wire was strained to and fastened against wooden posts, and galvanised twisted cable wire had iron posts and standards. The latter is intact without flaw or fault of any kind, the elastic cable yielding readily to pressure and flying back again without damage; but the former so easily becomes bent or stretched by cattle running or rubbing against it that the strainer has had to be applied to it repeatedly. Many of the wires have also been broken, and on one length the whole of the wooden posts decayed and have been replaced once with new ones. Oak posts with the sapwood cut off and steeped in creosote are durable, but when posts cut from young trees are used there is so much sapwood retained that they soon perish, the weak point being just out of the ground above the creosote. A useful and familiar form of rough fencing is that used by the railway companies (fig. 84), consisting of four or five rails with the ends made to slip into holes morticed in posts, each set of rails and posts forming a panel or length of 9 feet, with a stay in the middle to which the rails are nailed, but no other nails are required. It is known in the timber trade as field fencing, and may be purchased at a low rate, but there is plenty of odds and ends of timber on the home farm which may be cut up for the purpose.

(To be continued.)



WORK ON THE HOME FARM.

*Hand Labour.*—Our seed corn for autumn sowing was purchased from a reliable source, and so early threshing while we were still very busy was avoided, and we have now been able to proceed with the threshing at our leisure. So far we have ample reason for satisfaction with results, the crop of straw being much above the average, and the grain both in quality and quantity being excellent. Red Square-head Wheat was grown, and notwithstanding the fact of the greater part of the crop being beaten down quite flat before the grain was fully developed, we have a yield of 5½ quarters per acre, and the weight per bushel is 65 lbs. Black Oats give 6 quarters per acre, and the weight per bushel is 41 lbs. These satisfactory results are in a considerable degree attributable to the use of the artificial manures recommended by Professor Jamieson, to which we have repeatedly called attention. The quantity used per acre was half cwt. nitrate of potash, 1½ cwt. nitrate of soda, half cwt. steamed bone flour, half cwt. superphosphate, half cwt. coprolite. We strongly advise our readers to adopt our practice of obtaining each kind of manure separately from a respectable firm, and to have them mixed at the farm under the quantity required for each field is entered in the manure book, and due care is taken that there is no mistake made when it is used. Workmen are so apt to blunder in such matters that we invariably see the bags distributed upon the land in readiness for sowing, and so insure exactness. We strongly recommend these manures, because the knowledge of their value has been obtained at a considerable outlay and by a long course of careful experiments; because they impart to the soil the requisite fertility for the production of an abundant grain crop; because they

millions of plants per acre are necessary, and the quantities in the table appended represent 25,063,238 germinating seeds:—

Quantity per Acre. In lbs.	Variety.	Number of Germinating Seeds.
4	Meadow Foxtail ( <i>Alopecurus pratensis</i> ) .. ..	1,961,076
8	Cocksfoot ( <i>Dactylis glomerata</i> ) .. ..	3,634,552
8	Timothy ( <i>Phleum pratense</i> ) .. ..	3,585,973
6	Meadow Fescue ( <i>Festuca pratensis</i> ) .. ..	1,571,112
2	Tall Fescue ( <i>Festuca elatior</i> ) .. ..	501,600
2½	Crested Dogtail ( <i>Cynosurus cristatus</i> ) .. ..	2,000,015
1	Rough Meadow Grass ( <i>Poa trivialis</i> ) .. ..	2,255,922
1	Wood Meadow Grass ( <i>Poa nemoralis</i> ) .. ..	1,627,948
2	Hard Fescue ( <i>Festuca duriuscula</i> ) .. ..	1,102,234
2	Sheep's Fescue ( <i>Festuca ovina</i> ) .. ..	1,102,234
6½	Fiorin ( <i>Agrostis stolonifera</i> ) .. ..	2,105,632
2	Cowgrass ( <i>Trifolium pratense perenne</i> ) .. ..	600,000
1½	White Dutch Clover ( <i>Trifolium repens</i> ) .. ..	984,769
1½	Alsike ( <i>Trifolium hybridum</i> ) .. ..	1,030,176
0½	Yarrow ( <i>Achillea millefolium</i> ), ex. scarce .. ..	1,050,000
38 lbs.		25,063,238

OUR LETTER BOX.

*Dairy Management and Food for Cows (O. Coombe).*—In reply to your questions, "What is the best book or guide for the management of a dairy? the best food for the cows? to give the largest quantity of

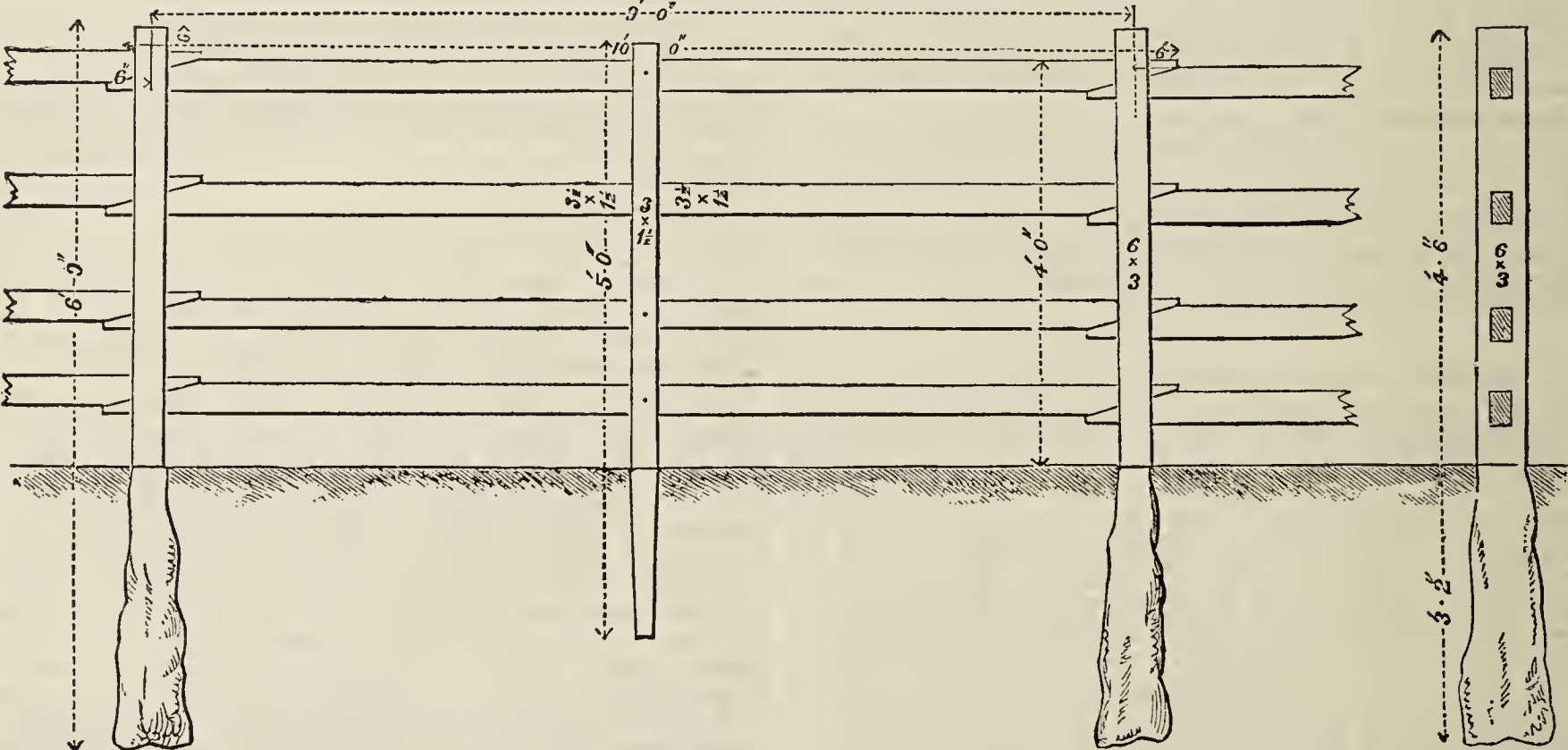


Fig. 84.—FIELD FENCING.

are as pure and free from adulteration as it is possible to obtain manure; and because they cost very much less than the special mixtures with which the market is flooded. This is a matter worthy the attention of all farmers, and we shall again and yet again call attention to it. The time for easy-going men is past, and among all the remedial measures for hard times, none certainly are more praiseworthy than those which embody true economy with sound practice and brisk energetic action.

THE GRASSES OF THE FARM.

MESSRS. F. & A. DICKSON & SONS have sent us their clearly printed, illustrated, concise, and useful manual on the important subject indicated, in which the various Grasses and their uses are briefly yet adequately described. From page 20 we cite the following sensible remarks on seeds:—"Poor seeds cannot be cheap. Dirty seeds are dear if they cost but a penny a pound. Land is impartial—it gives life to all that is put into it. It has no power to reject the bad and encourage the good. If weeds are sown with Clovers weeds will form part of the crop. It is a careful supervision, both for economy and certainty. When the manures are mixed, the mixture is put into bags—a hundredweight in each bag—grievous mistake to think that money is saved by buying what are frequently but delusively called 'cheap seeds.'" And further, as inquiries have reached us of late relative to seeds for permanent pastures, we give the formula of the firm in question as based on the tables of Mr. Faunce De Laune, but much cheaper. Mr. De Laune contends that twenty-five

milk, &c.?" we can only refer you to the information given in this Journal on the 11th, 18th, and 25th of April, 1878, under the heading, "Management of a Butter-making Dairy."

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1884.  November.		Baromet- er at 32 and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		
			Dry.	Wet.			Max.	Min.	In sun.	On grass.	
		Inches.	deg.	deg.		deg.	deg.	deg.	deg.	In.	
Snneday .....	16	30.352	38.7	36.9	N.	44.0	41.4	32.0	42.2	24.1	—
Monday .....	17	30.298	38.4	36.1	N.	43.4	44.4	33.8	63.1	26.7	—
Tuesday .....	18	30.324	40.4	38.7	N.W.	42.8	45.3	34.3	64.6	27.9	0.044
Wednesday ..	19	30.482	38.8	37.6	N.	42.6	45.6	35.9	70.0	31.7	0.010
Thursday ....	20	30.218	38.2	36.6	W.	42.4	45.6	35.7	56.3	31.0	0.055
Friday .....	21	29.777	40.6	39.0	N.	42.2	44.4	34.2	48.0	28.3	—
Satnrday ....	22	30.152	36.4	35.3	N.	41.4	42.8	32.2	64.3	25.7	—
		30.228	33.8	37.2		42.7	44.2	34.0	58.4	28.2	0.109

REMARKS.

16th.—Fair throughout, but no sun. 17th.—Fair; spots of rain in evening.  
18th.—Fine morning; cloudy afternoon, slight rain 3 to 5 P.M.  
19th.—Fine bright day, with slight rain at night.  
20th.—Fine morning; drizzle afterwards.  
21st.—Generally dull, and rather windy. 22nd.—Fair throughout, with some bright sun.  
Another fine week, with a mere sprinkle of rain. Temperature rather lower.—G. J. SYMONS.





## COMING EVENTS

4	TH	
5	F	
6	S	
7	SUN	2ND SUNDAY IN ADVENT.
8	M	
9	TU	Royal Horticultural Society Fruit and Floral Committees at 11 A.M.
10	W	

### CANKER IN FRUIT TREES.

**C**ANKER in fruit trees is considered by most cultivators as caused by unhealthy root-action. For many years I have each season had something to do with the renovation of fruit trees, and in many cases had to deal with canker in its worst form; but wherever lifting the roots from unhealthy quarters was practised, the wounds well cleaned with the knife, and a good coating of clay and lime painted into the wounds, the trees recovered and did well. By inducing the roots to grow upwards into wholesome mulching disease disappeared, and the wounds healed. I can point to many cases where such manipulating was practised, and the trees are now healthy. This experience dates back from the present time to the earlier days of my gardening life while an under gardener in the south and west of England, and I will refer to a few cases, which is better than theorising. I cannot at any time point to a case where I could have blamed insect agency as being the direct cause of canker, but I have very often seen the disease accelerated (after it was established) by insects harbouring all over the wounds, American blight being the most formidable enemy to contend with.

Many years ago I had charge of a fine stock of Apple and Pear trees. Many of the former—especially the finer varieties of dessert fruits—were cankered very much. They had been skilfully planted in excellent soil, but in course of time the roots had found their way to the inert soil underneath. Numbers of the trees were lifted and replanted on a firm bottom of plaster rubbish, which put an end to canker. They rooted upwards into the mulching and succeeded admirably. Others which had diseased roots were cleared of them, neatly cut with the knife, and a hard bottom of the same material as the above placed under the roots. This seemed to suit them, the trees and fruit having changed for the better. A number of large Apricots which were much diseased recovered, and the wounds healed.

Passing over a number of cases which could all throw light on canker arising from diseased or sluggish action of the roots, I will refer to trees which have been under treatment at a later date at Impney Park in Worcestershire, where I accepted a temporary appointment to form a new park, gardens, and grounds. The first duty I found was to take a note of the vast quantities of shrubs and trees which were already on the place. These were placed together in a kind of nursery ground, being left to the mercy of sheep or whatever quadruped might fancy food or shelter among them. Tied in bundles and heeled in were numbers of fruit trees, but crowded among rank vegetation. These evidently had been selected with much care and in proportion to the wants of the place, being mostly Cherries, Pears, and Apples on tall stems, which are very suitable where sheep are to feed under them, or where the ground is to be cropped with vegetables. From the position in which they had remained, the nibbling of the bark by sheep and other injuries, the trees were in a sad plight, most of them with little life.

Had they been my own I should have burnt them, but under the circumstances I began to clear off the suckers, dead wood, and diseased bark to prepare them for recovery if possible. After their being in rather uncomfortable quarters for a year or more a place was chosen on which they were to be planted—a sloping bank of marl, which it was said had never produced any herbage or corn worth the name. Stakes were driven into the then trenched soil, large very shallow holes were formed, in which were placed turf and lime rubbish. The trees were planted above this in well-prepared soil, carefully mulched, and the ground between the trees was planted with Potatoes.

A new difficulty arose. The mulching, which seemed excellent decayed manure, had been (so I was told) gathered off streets where salt dropped freely when carted to the stores or for transit. The trees struggled hard for life, but none died. The following season they made a clean healthy growth, the cankered bark healed, and the trees assumed a clean and fruitful appearance. The fruit trees in the gardens and elsewhere which I mulched with what I thought the best manure I had ever seen all suffered alike, Raspberries and a number of bush fruits having nearly died. They all recovered after the soil had been drenched by the winter's rains, and I think on the whole were none the worse for their punishment by the manure which had been brought to the place the year before I saw it. The Vines and trees for glass structures which were ordered before my arrival were mulched with the manure referred to, but extra drenchings of water, removal of the soil, and replanting the stock saved them. After these battles with canker and disease I was, as I had been for many years, certain that healthy root-action in fruit trees was sure to ward off and cure canker.

In the county of Worcester fruit trees are very abundant and succeed admirably with the most ordinary attention, yet it would be difficult to find in any other county in England so many cankered and half-dead trees. This applies, however, more to the farming districts where Nature is allowed her own course, and so trees perish and are not renewed. But, on the other hand, we can go to market and private gardens and see such fine quality as would create wonderment in northerners who had not seen high quality Apples, Pears, and Plums. Two years ago I made many removals of fruit trees because of canker. Some which were never worth replanting and receiving the usual attention have carried good crops this year, and all traces of canker are gone.

In speaking of canker I do not overlook the pernicious practice of close cutting in the top growth, which in due time ends in canker if the trees are growing vigorously. If trees are to be kept dwarf—and in few places all the trees cannot be of large size—cut in the bottom roots, and the tops will change from wood to flower buds.—W. TEMPLE, *Carrou-house*.

### DESTROYING INSECTS.

WHAT an enormous amount of labour the insect tribe causes to gardeners! Scale, bug, aphides, thrips, red spider, ants, wasps—what a list of troubles the very names call up! Extermination is the only remedy, but how may hard-pressed gardeners can effect this? In most cases it is an impossibility. The next best thing to getting rid of them altogether is to keep them so well under as to minimise their powers of destruction, and no better time than the present is to be found for that work in the case of those insects which thrive at the expense of our house plants. Plants at this season are in a condition to stand a much more vigorous attack on insects than at any other season—at least in most cases this is so; and the insects themselves do not increase so rapidly as they do in the warmer months. I do not think that we ought to overlook either red spider or thrips in the course of our autumn and winter campaign, for these are perhaps as numerous as at any other season, though the signs of their presence may be less conspicuous. At any rate these should



not be left out of account. I also imagine if all symptoms of aphis-colonisation is rigidly suppressed throughout the winter we have not the same trouble in the summer months in looking after them.

As to the best means of killing the various insects, I do not know anything better for destroying aphides and thrips than the old-fashioned plan of suffocating them with the fumes of tobacco. There is no danger to plants when fumigation is carefully performed if we except such cases as Ferns when producing their young fronds. Successful fumigation consists in having good tobacco paper or cloth as a first step, then a good heating material, charcoal being very suitable; but I have often used glowing coal cinders and also burning sticks. The danger to be expected is from their bursting into flame, but that will only be caused by carelessness in the attendant. It takes a little experience to damp the tobacco paper just enough and no more in order to produce a dense smoke. I am much averse to filling houses too thickly with smoke; it is much better to perform the process more frequently.

Hot water and soap is a most efficient means of insect destruction. It has, however, this disadvantage, that the number of plants on which we can employ it with effect and without harm to the plants themselves are very few. Camellias, Ixoras, Lapagerias, Stephanotis, and Crotons are plants which can be syringed with impunity. The way to go about this process is to have a copper filled with boiling water. Dissolve a few pounds of softsoap in a little of the water, and to each pailful of water add some of the dissolved soap. If the syringe with which the water is applied is so worked as to break the water into numerous small jets the water may be employed quite hot, as in its passage from the syringe to the plant it is slightly cooled. Few insects are left after a syringing with hot water applied as above. But there are a few plants which we dare to treat so.

Petroleum dissolved in soap and water is a very effective and cheap insecticide, but it requires great care in its use, and inexperienced hands occasionally make sad mistakes with it. I think it a very good plan to dip plants that can be so treated in some prepared solution, afterwards going over them carefully and cleaning all dirt off with a sponge. It may be noted that a temperature of 90° at the least should be allowed for the most tender plants; many may do with the solution from 110° to 120°. The barbarous practice of scrubbing leaves with brushes in order to remove scale is nowadays quite unnecessary. A good insecticide should remove everything with the pressure of a sponge, and if it does not do that it is of no use. Sponging is a very good means of clearing foliage of both dirt and insects, and as I have already said I like to cleanse plants that have been dipped with a sponge. The extra trouble is always well repaid.

Like others I have had my troubles with red spider, and have long ago come to the conclusion that sponging is the most certain and in the end the most expeditious way of getting rid of this most destructive pest. I always sulphur the pipes of vineries as a preventive, but a much better one is to keep the Vines in a healthy condition. Red spider finds a weak place in our armour with marvellous rapidity, and the most certain means of getting rid of the enemy is to find out our weak place and strengthen it. Water is generally wanting in sufficient quantity, but an insufficient supply of manurial agents will as often as not be found at the bottom of the mischief. Well-fed plants are never so subject to attacks of red spider as are those which are starved.

The main thing at present, however, is to make an endeavour to destroy every insect inimical to the well-being of plants, and there is not much time to lose if the work is to be done at all thoroughly; and no faith in any solution by whatever name it may be called will compensate for an intelligent and painstaking examination of every plant.—B.

CHRYSANTHEMUM QUERIES.—“Is there a better reflexed Chrysanthemum than *La Neige*?” A friend asked me this question to-day, and I felt

unable to answer to my satisfaction. Permit me to ask it in your columns. Mrs. Forsyth I have very fine, but owing to the looseness of the overlapping florets I do not look upon it as a good type of reflexed Chrysanthemums. This applies in a greater degree to the whites among the early-flowering, such as *Sœur Melanie*, *La Viège*, &c. Lady Selborne, the new sport from James Salter, is by general consent classed among the Japanese. Again, I should like to know if there is a variety of Elaine that never shows a centre? My Elaines, and so far as I noticed those in the collections around, well or ill grown shows a centre. I have, however, been shown an exhibition bloom sent from a London amateur of immense size and without any centre. I could not ascertain if this was the result of forcing in so far as the centre was concerned. Several Chrysanthemums have vertical florets—how should they be classed?—W. J. MURPHY, *Clonmel*.

### SHRUB-GROUPING.

PRESCIENCE of development in the form, size, and colours of shrubs is only to be acquired by close and continuous observation. I use the term “colours” advisedly, for many shrubs change with the seasons so much as to present a totally different appearance, each change being more or less attractive in its season; and it is by watching such changes that we gain valuable knowledge to guide us in the work of tasteful grouping, and how to plant so as to produce harmonious combinations, pleasing contrast, picturesque effects. Who does not admire the Virginian Creeper in the full glory of its crimson autumnal colouring? Plant near it a Pampas Grass, and do not the silvery plumes seem brighter and the crimson foliage richer by force of contrast? Prepare a station of deep rich soil for a Pampas Grass to insure its development into a stately specimen with noble spikes some 12 feet high just now; bring near it the common Holly, laden as it is now with the scarlet berries clustering so thickly among the glossy green leaves; and *Arbutus Unedo*, which is also most attractive this autumn with an abundant crop of its large crimson berries and numerous clusters of its waxen flowers. If possible plant the Holly and *Arbutus* thinly upon a slope above and sweeping round in a semicircle behind the Pampas Grass. Higher up have the soft green tapering forms of *Thuja Lobbi* mingled with a white-stemmed Birch or two. On a lower slope in front of the Pampas Grass make a large bed of the Irish Heath (*Menziesia polifolia*), which is now one mass of purple flowers, and you have a picture most lovely, not a mere fanciful conception, for I am painting from Nature and really giving a description of the more prominent features of a scene that has been growing in beauty for several years. In front of the *Menziesia* bed is a sheet of water charmingly studded with the fragrant white flowers of *Aponogeton distachyon*. Then, too, there are glimpses of scarlet Japanese Maple near the Pampas Grass, a low spreading cushion of the deep green *Gaultheria procumbens*, the rich crimson leaves of *Azalea pontica*, and the varied leaf tints of the *Andromedas*, all contributing incidence of colour to our picture.

In treating of shrubs one cannot altogether avoid some mention of trees, for they are so intimately associated in ornamental planting that few large groups are perfect without them. Laburnums, wild Crab, and Mountain Ash are literally dwarf trees, but no shrubbery should be without them. An attractive clump last summer contained fine specimens of each of them, with a large *Weigela rosea* and a young *Pinus insignis*; in another a white-stemmed Birch with long pendent branches, a *Picea nobilis* remarkable for the contrast of the glaucous hue of the young foliage with the dark green of the older leaves and the elegant air of the tree, a *Thuja Lobbi*, three or four Mountain Ash, with a low growth of Japanese Maples, *Berberis*, Heather, and Bracken; in the background a Beech and some Larches gave finish and setting to the group. Or to take a less conspicuous group, we turn to one rich in shrubs for all seasons. In front came Japanese Maples, *Kalmia glauca*, *Erica carnea*, *Potentilla fruticosa*, *Yucca gloriosa*, and *Fuchsia Riccartoni*; in the centre *Spiræa Douglasii*, *S. ariæfolia*, *Forsythia viridisima*, a group of early-flowering *Rhododendrons* consisting of *R. Nobleanum coccineum*, *R. caucasicum pictum*, *R. Russellianum superbum*, *R. Blanch Superb*, and *R. Broughtonianum*, a *Deutzia crenata flore-pleno*; and behind a Siberian Crab, a mop-headed *Acacia* (*Robinia inermis umbraculifera*), an *Arbutus* and a Holly. This is a very attractive group, and all the shrubs in it may be highly recommended. Another good group has in front a *Daphne pontica* 10 feet in diameter, *Diplopappus chrysophyllus*, a variegated *Osmanthus*, a *Mahonia aquifolia*, *Rhododendrons* Grand Arab, Minnie, and John Waterer; behind come *Spiræa californica*, *Desfontainia spinosa*, *Syringa* (*Philadelphus*) *grandiflora*, *Spartium junceum*, a Laburnum, Pink Thorn, Mountain Ash, *Magnolia Lenné*, and *Eucalyptus coccifera*. A much bolder group contains fine specimens of Pampas Grass, *Ilex tortuosum*, *Ilex Golden Queen*, *Arbutus Unedo*, wild Crab, and



Eucalyptus globulus full 20 feet high. A less conspicuous but charming group has *Azalea amœna*, *Rhododendron ferrugineum*, *Skimmia japonica*, *Hypericum patulum*, *Erica australis*, *E. codonoides*, *E. mediterranea*, *Gaultheria acutifolia*, *Colletia horrida*, *Berberis japonica*, *Azalea pontica*, *Pernettya angustifolia*, *Berberis Darwinii*, *Kalmia latifolia*, *Ledum latifolium*, *Berberis Wallichiana*, *B. dulcis*, the variegated *Symphoricarpus*, *Eucalyptus amygdalina*, *Cotoneaster Simmonsii*, a Mountain Ash laden with the growth of a Honeysuckle, *Ribes sanguineum*, *Rhus Cotinus*, *R. laciniata*, *Hydrangea paniculata grandiflora*, and *Viburnum Tinus lucidum*.

In planting it must not be forgotten that all shrubs will not answer alike in the same soil. The lovely section included under the general designation of American shrubs, of which the principal genera are *Rhododendrons* and *Azaleas*, will not answer in soil containing much lime. On the other hand, while they all thrive in peat it is by no means to be regarded as indispensable for them. A poor thin soil free from lime is a rich one for them. It has only to be drained and trenched, and then all the American shrubs may be planted in it with the assurance that they will thrive in the fullest sense of the word. I have also found certain other shrubs to answer in our poor soil, while others will struggle for mere existence. For example, *Buddlea globosa*, all the *Spiræas* and *Berberises* are positively rampant in it; but the *Ribes*, *Lilacs*, *Rhus*, *Phillyreas*, and *Privets* will barely exist. Strange to say, the *Tulip Tree* has so far made a remarkable growth in it. *Siberian Crab* requires stations, yet there are here some of the finest specimens of wild *Crab* I have ever seen, and they have all had a heavy crop of fruit this year, one grand old specimen having from a dozen to twenty bushels of its yellow-and-crimson fruit was a remarkable sight. Of *Coniferae* *Wellingtonias* cannot be said to answer in any but a very deep fertile soil. In one part of a valley here there is an alluvial deposit some 8 feet deep, admirably suitable for the *Wellingtonia*; but upon the hillside it soon assumes a thin impoverished appearance, which affords a clear indication how unsuitable such a position is for it. *Abies Douglasii* also requires deep rich soil, but *Pinus insignis*, *Cupressus Lawsoniana*, *Thuja Lobbi*, *Picea nobilis*, *P. Nordmanniana*, and *Araucaria* all answer admirably in poor soil. *Pinus insignis* and *Thuja Lobbi* are especially valuable for the quick growth and bold effect which both produce in a few years.—EDWARD LUCKHURST.

#### PARSLEY.

ONE of those everyday vegetables which are always in request, I do not think Parsley receives the attention it deserves, and for which it well repays. Very inferior strains are very common, and the coarser-growing the strain the less profitable are the plants. In a fine strain every leaf is available, and we can always use the outer and oldest leaves first, allowing the younger ones to develop into large leaves in their turn before having necessity to gather them. In coarse-leaved plants the outer leaves are practically worthless, and the young central growths have to be taken as they appear in order to meet the demand. I send examples of three very distinct and good strains. The darkest leaf represents a Stock, every plant of which is like a miniature *Todea*. The Fern-leaved variety is useful for kitchen use, and is very pretty and ornamental, while the largest light green leaf is from an ordinarily good strain. The only way to secure the strains true is to preserve the best plant only of each variety for seeding purposes. It is wonderful how rapidly deterioration of quality follows indiscriminate seeding.

Next to having a good strain is the cultural treatment of the plants. Our soil is a bad one for Parsley, numbers of plants dying in early summer if left to themselves. Strange to say, however, by transplanting the young seedlings this dying-off disease is completely stopped. Our system of culture is to sow seed in February or the beginning of March. About the end of May the plants are dibbled out a foot to 18 inches apart. Parsley must have rich and highly cultivated ground to do really well. It will be found a good plan on dry soils to mulch pretty heavily with horse droppings. We only make the one sowing in the year, and by gathering only the oldest of the leaves the plants are never injured so severely as to cause them to throw up small leaves. In order to keep a supply during the spring and early summer months a few of the plants are better for being cut over in early spring, and more a little later, and either mulched with manure, or given a dressing of artificial manure. Under this treatment a crop of fresh green foliage is thrown up and the tendency to go to seed given a sufficient check to keep the plants producing until the young spring-sown plants are ready. Where hard winters are common it is a very good plan to lift a supply of plants and pot them in September, housing them in cool Peach houses or other similar structures in November. It is very noteworthy, however, that Parsley grown on the single-plant system as above advocated, and gathered in the manner advised, are practically hardy enough to stand most of our winters with impunity. Fern leaves, a little dry straw, and in some cases handlights, are all useful as means of preserving the foliage from injury by frost.—R. P. B.

[All three samples are extremely good, one having a large densel

curled bright green leaf; the second is slightly smaller, but very dense and compact, and of an exceedingly dark green shade; while the third has the leaf cut in narrow linear divisions of a similarly dark colour.]

#### RHEXIA VIRGINICA.

OUR figure represents one of a small family of plants indigenous to the vast continent of North America. Though a small family there is something very interesting about them to the lover of choice hardy herbaceous plants. *Rhexia virginica* was introduced to our gardens as far back as 1759; the plants of this species require care and skill to cultivate them successfully. *Rhexias* are but little known and less cultivated, and are seldom met with. There are only four or five species enumerated in some of the best works we have, but they are a race of plants of great beauty with numerous bright rosy flowers, and ought not to remain longer in the background.

Their requirements can be met by imitating their native habitats—sandy bogs. If they are accommodated with sandy peat and moisture



Fig. 85.—*Rhexia virginica*.

success may be expected. They make fine plants on the moist rockery, and they will also succeed with care in a cool peat border, but they must be supplied with water when required. It requires time to get them established, and, except for increase, the plants should not be disturbed. They are increased by division when growth has commenced in spring. They are summer-blooming plants of great beauty, and ought to be much more cultivated than they are at the present. When well grown and in good condition they would prove telling plants for exhibition purposes in collections of hardy herbaceous plants.—N.

#### NOTES ON GRAPES.

GROS MAROC.—Noting Mr. Iggulden's remarks on this Grape I wish to state that I have one Vine four years old on its own roots, which last year carried 28 lbs. of Grapes on two rods. This year I have thirty bunches—too many, I know, to finish as I should wish. These are fair-sized bunches, and I certainly expect them to weigh 40 lbs. This Vine is in the worst position possible, but does well. It is planted at the north-west end of a span house, the coldest corner; yet this is the easiest Grape we have. Very little thinning of the berries is needed, for the stalks lengthen as the berries swell. The bunches look very small in their early stages, and this accounts for my heavy crop, as I did not expect them to be half their present size. As I had cut them at the end of November last year I cannot say they will keep, but I shall try it this time. Growing with the Alicante it presents a very decided contrast both in foliage (which is now



yellow) and in bunch. Gros Maroc has a very prettily formed bunch not given to shouling like the Alicante. The flavour here is not so good as Alicante, but soils have more to do with flavour than we are generally aware. Where Grapes are grown roughly or by unskilled labour this will be useful. I shall cut one old rod away, having a good young cane run up this summer, and look for good results. This being a large-berried Grape, and colouring freely, will displace the Black Hamburgh for autumn or late work. It ought to keep well, as it has a moderate tough skin.

**FOSTER'S SEEDLING**—This is worthless for market purpose, fetching a very low price, even when well grown. It will furnish a very heavy crop, but as they do not keep, or at least improve by keeping, they must be cut. Buckland Sweetwater is far ahead, as the berries come so much larger.

**GOLDEN QUEEN**.—Grown in a Muscat heat this does well, producing good berries and crop; but what I have now hanging are, as Mr. T. Record describes, of a dirty cloudy colour. In my case, however, it does not get beyond the outer skin. The flavour is very good indeed, though the skin is thick. It has been tasted by many persons, and all unite in saying it is a very superior Grape. For an early autumn noble-looking Grape this ranks high, as it is so rich-looking.

**MRS PINCE**.—I do not grow this, but about here it must not be mentioned with Lady Downe's. Certainly Mrs. Pince is larger in bunch, but the colour is always deficient, and it is one of the first, if not the first, to shrivel in the berries.

**LADY DOWNE'S** as now hanging looks well. The bunches are very regular, as we have had to cut out but a few so-called scalded berries.

**GROS GUILLAUME** grows very strongly here, having bunches 20 to 24 inches long, seven bunches on a Vine, which I expect to average 6 lbs. per bunch.—**STEPHEN CASTLE**.

### LOAM.

No garden where plants have to be cultivated in pots can be properly managed unless suitable loam in sufficient quantity is available. In gardens about towns good loam is generally a scarce and valuable commodity, and we have known gardens attached to large estates where it was a difficult matter to get a good supply. Those, however, who object to their gardeners having a necessary supply of loam should not expect many of the productions to be brought to the highest degree of perfection, as in the cultivation of many plants nothing will compensate for the absence of loam. Vine borders of a substantial and lasting character cannot be formed without it, and there are many plants grown in pots which are more benefited by fibrous loam than anything else, and all concerned should endeavour to secure a certain amount at least of the best loam obtainable. Only getting a wheelbarrowload or a cartload occasionally is a poor plan, and the best of all ways is to try to secure enough at one time to last all the year.

What we term loam is the top part of grass land, generally called turf, and this may be cut of various thickness according to the quality of the land. On good old pasture the turves may sometimes be cut as much as 6 inches in thickness, but where the surface is comparatively new and fibreless a thickness of 2 inches or so will generally be suitable. The thicker ones may be cut about 10 inches square, and the thin ones a few inches longer, but the same as the others in width. A quantity should be taken direct to the potting-shed, and there be stacked in a neat mound. More may be put under cover somewhere else, and the remainder may be put in the open air. In the latter case especially the mound should take the form of a stack 4 feet or 5 feet in width, and about the same in height; and the top should be worked up to a sharp ridge that rain may be thrown off. In all cases the turves should be put up with the grass side downwards, as this will soon cause the grass to decay, kill all weeds, and convert all the green material into manure. It is sometimes recommended to put a layer of manure between layers of turves, but we do not like this plan, as sometimes the loam may be wanted without the manure, and it is not easy to separate them. It is always easy to mix the two according to the condition required at potting-time.

Some do not cut the loam until after frost, when they think all the worms and insects will have gone below; but we have never noticed the advantage sufficiently to make us particular in following out the practice. About a month ago we cut upwards of forty cartloads upon a hillside in the deer park, as it was dry then, and it was all put up in small mounds, grass side down, to be carted home as the weather and other work will allow. We do not approve of working amongst loam when it is wet, and all the operations connected with it should be done in dry weather. About towns some good loam may often be obtained where preparations are beginning to build new houses, and then it may be taken in and stored at all seasons; but come from where it may, all employers may rest assured that their gardeners are working under the greatest disadvantage if they are compelled to dispense with loam.—**A KITCHEN GARDENER**.

### ORCHID NOTES.

**SPOT ON CYPRIPEDIUM SPICERIANUM**.—This beautiful Cypripedium is very liable to become spotted and blotched on its foliage. Some plants that recently came under my notice were very badly disfigured, which twelve months ago were in the most perfect health. The appearance of the plants prompted me to inquire the cause, which was considered to be due to a superabundance of water on the foliage. Further, that imported

plants of this variety would not bear constant watering over the foliage after becoming established and subject to artificial treatment to the same extent as seedlings raised at home. Judging from the vigorous healthy clean foliage of the seedlings there was certainly some grounds for the above opinion. After duly considering this subject and the treatment the plants have received, my experience leads me to the opposite conclusion, not as regards seedlings, for I have had no experience with them, but with imported plants. When the plants were first imported it was stated that they were found growing upon rocks, and that water run over the rocks sufficient to keep the soil or moss in which they were growing constantly wet. The impression gained at the time was that very little soil really existed about the roots of the plants, and that they clung firmly to the rocks. These remarks were our chief guide in the cultivation of this plant. First provision was made by having the pots in which they were to be grown nearly filled with drainage, so that a small quantity of soil only should be given for the roots to grow in. The compost employed at first was sphagnum moss and charcoal in small pieces, and the plants were watered over the foliage frequently, in fact every time water was applied, and the moss was kept thoroughly wet. The plants were well elevated above the rim of the pots, to give them every chance of rooting outside the pot, and clinging to it if they wished. They grew well, and the following season were given larger pots, and upon turning them out, not only had the roots commenced clinging to the small pots, but to the crocks employed for drainage. In repotting, the same provision was made for liberal drainage, and a small quantity of equal portions of living moss and peat fibre, the small particles of soil being shaken out. Charcoal was freely used, and in lumps of a larger size. It must be mentioned that every portion of the old moss was removed, and the roots washed in tepid water before they were again repotted. Watering was done on the same principle as before, and the plants have thriven well, with not a single blotch upon their foliage, and the scapes produced bore two flowers each, which I fully believe this grand Cypripedium will do annually under good and proper treatment.

I strongly recommend potting to be done annually, and every particle of the old compost removed from amongst the roots. It may be asked, Is this really necessary? and my reply is that it is impossible otherwise to keep the material used as a compost in good condition and sweet. It is certain if the conditions given us, those under which it thrives in its native home, are correct—and we have every reason to believe they are—the material about the roots is always sweet.

What has this to do with spot upon the foliage? it may be asked; but I hope to show that it has more to do with it than may appear to be the case. It clearly shows that if a limited quantity of soil is given as a medium for the roots, and that retained in a sweet healthy condition with abundance of drainage, watering over the foliage will not cause it to become disfigured by spot. It occurred to me that the plants that were badly spotted were not growing in sweet material, but that it had become close and inclined to be sour, as if the peat used had not been good. Some of the plants were potted in loam, and were less spotted than those in peat. The fibre of loam is decidedly preferable to bad peat, but it should be removed annually, as it becomes sour from the enormous supply of water required during the year. Again, cold water applied to the plants overhead is almost sure to cause spot, more especially so if the soil about the roots is not in the best condition. I have proved that water many degrees colder than the house in which the plants are growing will cause spot on Cypripediums. I remember taking charge a few years ago of a number of plants of such varieties as *C. villosum*, *C. barbatum*, and others growing in the stove, and which were badly spotted, and I soon discovered it was due to the soil about the roots being in bad condition, and the plants being liberally supplied with cold water over the foliage. The plants were turned out—though it was autumn—and repotted in fresh material, using as little as possible, and afterwards supplied with water at the temperature of the house. The plants afterwards made clean foliage and grew well, free from spot, and when I left them two and a half years later they were clean healthy plants. I would advise those having spotted plants of this Cypripedium to turn them out carefully and repot them under the conditions detailed, and grow them in a warm house during the summer, and keep them cooler during the winter, say in a temperature of 50° to 55°, according to the weather, and supply them with water accordingly, giving a less bountiful supply than is needed during the summer.—**W. B.**

**LÆLIA DAYANA**.—This is a small-growing species that makes itself quite at home at the warmest end of the *Odontoglossum*



house. It is very pretty for suspending from the roof of this structure, and when in flower, strikes the eye of the visitor as much at this season of the year as the lovely *Sophronis grandiflora* does later in the season and in spring. The flowers are large,  $2\frac{1}{2}$  to 3 inches in diameter, for the size of the plant, which does not grow more than from 4 to 6 inches in height. The flowers are produced from the top of the pseudo-bulbs just before they have completed their growth, in fact, immediately they are well formed. The blooms are not so useful for cutting as those of some other species, for the stem bearing them is only a few inches in length; they, nevertheless, are useful for small glasses or for bouquets. The flowers are produced singly, and the sepals and petals are lilac mauve, while the lip is deep purple and the throat beautifully striped with white and nearly black lines. They last in good condition for about a month.

Not only is this variety very free-flowering, but it is easily cultivated on a block or in small pans. The former, which I prefer, give the most trouble in watering, but this is compensated for by the extra labour required in washing the pans. If grown in the latter the plants should be elevated above the rim of the pans and potted in peat fibre and charcoal in small lumps. A little living moss during the growing season may with advantage be used. When grown on blocks, all that is needed is a little sphagnum secured amongst the roots.

During the growing season a liberal supply of water should be given, which should not be discontinued for some time after the plants have flowered, for they make a number of roots, and have their pseudo-bulbs to complete after this stage. In order to accomplish this the plants should be suspended in the lightest position the house affords, to assist them to become thoroughly ripe, when sufficient water only is needed to just keep their pseudo-bulbs from shrivelling.

**LÆLIA ALBIDA.**—This variety, although small and miniature in its growth, is totally distinct in appearance, as well as its flowers, from the preceding. In growth *L. albida* more resembles *L. autumnalis*, but the pseudo-bulbs are not more than one-third the size of that variety. The flowers are produced after the completion of growth from the top of the pseudo-bulbs on a slender arching spike, being arranged alternately along the stem, and not at the extremity, as in the other varieties. The flowers are smaller in size, but not less beautiful, and are admirably adapted for wiring for buttonholes and bouquets. The sepals and petals are pure white, while the lip is rose colour. The pureness of the white varies, and the same may be said of the colour of the lip, which in some is very faint, while in others it is of a much darker shade. Where room is limited, these free-flowering small-growing species have an advantage over those of larger growth, for a number of them can be accommodated by hanging them on the woodwork that separates different houses, or they can be suspended from the roof. They require but little room to grow them successfully, so long as plenty of light and air can be given them, and they in return yield a bountiful supply of choice flowers for the purpose indicated. If possible, this variety should have a temperature  $5^{\circ}$  warmer than *L. Dayana* while making its growth, but if this is not practicable they may be grown well at the warmest end of the Odontoglossum house. The treatment recommended for the last named will suit this one admirably.—SCIENTIA.

#### SHADING VINES TO PREVENT THE ATTACKS OF RED SPIDER.

It is not usual to shade Vines except in the case of Grapes that are ripe, and which have to hang for a long time before being cut. They are shaded then to prevent the fruit losing colour so soon as they naturally would if exposed for a great time to the full rays of the summer sun. But I do not remember reading of or ever seeing strong established Vines shaded to prevent their being attacked by red spider.

We have a large span-roofed vinery here which runs north and south. The Vine borders both inside and out are about 3 feet above the level of the surrounding ground. The structure is light, and from its position it receives the full benefit of the sun's rays from morning until night. It is ventilated by means of simultaneous opening gearing, which opens the side lights at the bottom, and the side lights of the lantern at the top. The Vines are planted on both sides of the house between the pipes and front walls, and are trained to a trellis 18 inches from the glass. The Vines are generally started about the beginning of February, and they are never syringed after the buds have fairly started into growth. The borders are well watered at all times, and the paths are damped twice a day during the summer. The Vines are strong and healthy, and produce fine crops, but notwithstanding the health of the Vines they were generally attacked with red spider when the Grapes were thinned and about the size of peas. I tried several things to eradicate the pests, but failed to do so satisfactorily until I adopted the plan of slightly shading the roof of the house outside with a composition made of whiting, a little oil, and water mixed thinly and put on as soon as the Vines started into growth.

It is allowed to remain on till washed off by the summer rains. By the time the Grapes begin colouring it is mostly gone, and the Grapes, both white and black, colour as well as could be desired. The leaves throughout are strong and healthy, and not the slightest signs of spider can be seen in the house, the wood ripening to perfection under this system.

The above is a plain statement of facts, and those whose Vines suffer from the attacks of red spider can safely try it.—A. PETTIGREW, *Castle Gardens, Cardiff*.

#### WATER FOR HORTICULTURAL PURPOSES.

THAT water differs greatly in nature is a fact well known to gardeners. For the cultivation of pot plants rain, or soft water as it is called, is the most desirable, but it sometimes happens that where adequate means are not provided for its storage the supply will run short, as in the past dry season, in which it has been necessary in many localities to utilise spring or hard water for many purposes. Many are aware of the injurious effects produced by its use, but are nevertheless obliged to have recourse to it. It is therefore a subject of interest to gardeners to understand the causes which produce and the means which counteract or modify that effect.

In the first place the natural waters of the earth—viz, sea and spring—are not pure; they contain saline and earthy matter dissolved in them. Sea water contains the largest amount, but spring water is also impregnated in a greater or less degree. Water which comes from the clouds is practically pure or soft, it having been obtained chiefly from the sea by distillation, the heat of the sun raising it in the form of vapour (the substances held in solution not being volatile are left behind), this vapour returning to its fluid state on being cooled descends in the form of rain or dew, sinking into the earth and forming accumulations, or springs as they are called. But in its passage through the air it has absorbed carbonic acid gas from the atmosphere, which enables it on its passage through the soil and strata to dissolve a portion of lime which it holds in solution, thus rendering the water hard. It will also become charged with other mineral matter in proportion as it passes through beds composed of such substances.

An instance of the effect produced by a water charged with iron may be seen in the *Hydrangea*, in which the clear pink flowers are changed to a deep blue. But it is not always that the effect is so pleasing; a water which contains an excess of either iron or saline matter being by far the worst that the gardener has to contend with. It often shows its bad influence in the sickly growth and stunted habit of some species of plants; many failures there are which can be attributed to this cause. But water which contains lime may be used for such purposes as watering stone fruit tree borders after it has been brought to a proper temperature. It is often on account of its low temperature that spring water is so prejudicial. The best way to overcome this difficulty is to expose it in open tanks, so that it can absorb heat from the sun's rays, and also by exposure it will part with a large proportion of the carbonic gas, the lime being no longer soluble will be precipitated and sink to the bottom in the form of a white powder.

Again, the same water if used for such plants as *Heaths*, *Rhododendrons*, and such plants that are partial to a peaty soil it will quickly show its ill effects, as we can see in some localities where the water from the springs is highly charged with lime. *Rhododendrons*, *Azaleas*, and some other kinds of *Coniferae* will not grow well, while *Larch*, *Beech*, and *Box* edging will thrive.

For syringing foliage plants where it is absolutely necessary to use water that is by any means hard, a teaspoonful of petroleum to a gallon of water will be found to prevent the lime being deposited on the leaves, as well as being an effectual check to any insect pests that the plants may be subject to.—C., *Dorset*.

#### CHRYSANTHEMUMS.

**JEANNE D'ARC, MADAME MADELINE TEZIER, AND BENDIGO.**—I was pleased to read in the *Journal* the description of Mr. Molyneux's *Chrysanthemum*—more especially of the extraordinary bloom—*Jeanne d'Arc* or *Madame Madeline Tezier*. As an old grower and exhibitor of the *Chrysanthemum*, I should be glad to know if these varieties are certainly identical. I have *Madame Madeline Tezier*, but it lacks the purple or rose stripe to the florets with the exception of the bottom rows. It has come with me quite white, the bottom rows of florets have a faint tinge of colour. The plants I had from Mr. Davis of Camberwell. If Mr. Molyneux or Mr. Davis will inform me if they are the same variety, it will settle a doubt. *Bendigo* I expected to be something new, it proves to be nothing more than *Mabel Ward*. It is very disappointing after paying a good price for a plant, and waiting a sea on, and then find you have plenty of it as an old variety. *Sir Beauchamp Seymour* I am also afraid is an old variety under a new name. I would also thank Mr. Molyneux if he would give the names of the best thirty six Japanese varieties to grow for exhibition. It would be very useful to those who



like myself, contemplate cultivating more of this section of this grand autumn flower.—T. H., *Bristol*.

**CHRYSANTHEMUMS AT BEECHDALE.**—I read "T. W. S.'s" report of the Chrysanthemums grown at Beechdale in the *Journal*, page 459, and was much struck with the sizes given there; *Baronne de Prailly*, 13 inches in diameter, and *Empress of India*, 8 inches across, are extra large. Mr. Fullerton would be doing good service for the readers of the *Journal* if he would give us the details of his culture, whereby he produces such blooms as those named; if they were proportionate in depth and other matters they were truly marvels. I would go a long way to see such blooms so large and good in other respects. It is a pity such blooms cannot be exhibited at some of our leading shows, where they would meet with a large share of admirers.—E. M. S.

**CHRYSANTHEMUM BENDIGO.**—At the recent exhibitions of Chrysanthemums which I had the privilege to inspect I looked anxiously for the one in question, but in only one case could I see the variety so named. This fact and other matters which have come to my knowledge convince me that the variety exists in name only. In Mr. Gibson's stand at the Kingston Show was exhibited a bloom under the name of Bendigo, which was a well-developed bloom of Mabel Ward. If any new variety of Chrysanthemums be sent out as a good one it can easily be found in some stand at the many exhibitions held during the season; if it be as good as represented to be it is sure to be there. This I consider a true test of any variety. I think it high time that proper means were taken to thoroughly test new varieties before the public are deceived. It is not the price paid for the variety in question that is the all-important point. It is the loss of time and the disappointment which must follow.—E. MOLYNEUX.

#### LIQUID MANURE—HOW AND WHEN TO USE IT.

IN reference to the application of liquid manure to plants or crops, I may be permitted to say that I should never think of giving liquid manure to plants in pots, nor to any crop in the garden or field, when the soil is dry. My practice, and doubtless that of the majority of horticulturists and agriculturists also, is to give liquid manure to plants and crops, which its application is intended to benefit, when the soil is moderately moist, but never when it is dry. I should think there are very few indeed of your readers who would for a moment think of giving liquid manure to a plant simply to prevent its leaves flagging, and because it is dry at the roots.

Perhaps it may be as well to consider for a few moments why it is that we give liquid manure to our plants in pots and fruit-tree borders, also the mode and time of giving it, with a view to realising the best possible results—results which its judicious application may be counted upon producing. On the point that liquid manure is given with the object of benefiting the plants, &c., to which it is applied, gardeners (including "Non-Believer") are unanimous, as they also are, with one or two dissentients, regarding the way and time of application. As regards giving liquid manure to plants in pots, it should never be applied before the roots have pushed freely through the soil, when it may be given in a very weak state, alternately with clear water, with advantage to the plants; increasing its strength, however, as the pots become filled with roots.

This is the time, if the plants are swelling crops of fruit or developing heads of flower, to give liberal and frequent supplies of liquid manure, under rather than over-strong, to the individual plants, and the same remark applies to Vine and Peach borders under like circumstances. Here, as soon as the Vine and Peach borders are attended to in the way of putting on a surface dressing of a few inches thick of soil after all the other preliminary arrangements for forcing have been completed, we lay on 3 inches thick of horse-droppings all over the borders, and prior to starting the houses a good soaking of tepid water is given, which is repeated at intervals, more or less frequent, according to circumstances. By the time the Peaches and Grapes have stoned there is not much substance left in the surface-dressing of horse-droppings, the repeated waterings having, as was intended, washed its virtues down to the roots. It is at this time that we give copious supplies of liquid manure to the roots as it comes from the tank in the manure pond, with the exception of a few cans of hot water, which are added to each tub to take the chill off; and in every case the borders have been thoroughly supplied with clear water a day or two previous to the thicker fluid being given. I find by referring to my diary that during the interval from the 9th of June to the 19th of July the borders of our late vineries were watered five times with clear water from the delivery hose attached to one of Owen's double-barrel force pumps, and that on the day following each application of clear water to the borders liquid manure to the extent of six garden tubfuls was given to each border. From the 19th of July to the end of October only clear water has been given when necessary.

There is a great difference in the strength of liquid manure, which is made by repeatedly watering large heaps of long stable manure (the soakings of which run into a tank), and that taken from cesspools adjoining the stables, the latter being a powerful fertiliser, and therefore requires being well diluted before being used; but the former can, without the least apprehension of its injuring the roots of Vines or Peach trees, be given to the borders, and the oftener the better during the swelling of the fruit, without being diluted. Where liquid manure cannot be obtained, a surface-dressing of Peruvian guano, or Beeson's manure, which

is the best artificial fertiliser I have tried, mixed with soil, and covered with short dung, should be had recourse to.—H. W. WARD, *Longford Castle*.

"A THINKER," at page 458, draws conclusions from the extracts taken from my article at page 401, which I think are not admissible, as they relate exclusively to plants in pots, and have no reference whatever to fruit trees or plants in borders. Is not the difference considerable between a tree or a plant in a pot and one planted out? The former when in active growth will need attention in watering at least once a day, whilst the other may need it once a week, or fortnight, or even more distantly, and when at rest the pot tree or plant will need water much more frequently than those planted out in order to keep the soil moist. I need not point out what the consequence would be of giving the pot plant liquid manure every time water is required, but it is another matter entirely in respect of trees planted out, for the pot plant would need at least four times as frequent applications as that planted out.

Then, as to applying liquid manure to trees or plants outdoors when dormant, I fail to see any benefit liquid manure can effect beyond enriching the soil, and in that way it is of great benefit provided the soil is not already saturated with moisture, for in this condition it is quite clear a large proportion of the manurial elements must pass off by percolation through the soil beyond the roots. That it may and does intermix with the soil is obvious, yet some of the liquid manure must pass off and be lost, consequently I submit that to apply liquid manure to the soil when it is wet is only to make it still wetter and cause much plant-sustaining matter to be thrown away. Notwithstanding the apparent (and in the case above alluded to decided) disadvantage of using liquid manure for trees or plants in a dormant state, it must be admitted that it may be used advantageously in the case of poor soils with a view to enrich them, but I do not think its full benefit is derived, as when it is applied at the time there are numbers of hungry roots, and the plant has the material to convert it into its life-sustaining elements. In the case of fruit trees and Strawberries, these having root-action more or less in winter, especially preceding the fall of the leaf and the application of fresh liquid manure will be taken in and the subsequent growth be invigorated, for as the food is so is the growth. Still I cannot bring myself to subscribe to even Mr. Burbidge's dictum that a dry plant ought not to have liquid manure. If the soil is too dry it may need soaking, but that is not dryness needing an ordinary watering, and if a plant needs water it is a question for the cultivator to determine which, whether it should be water or liquid manure; and if wet it wants neither.—G. ABBEY.

THE question, Should liquid manure be given when the ground is so dry that plants are drooping? could easily be answered by very little reasoning; for both the evil and the waste of such a practice has been so clearly shown by your able correspondents that very little reasoning power is needed to convince us that it is wrong, not only to give it when it is so dry, but to give it at all unless the ground is damp. I have always been very particular on this point. I find it a good plan to supply with clear water overnight, and give liquid manure the following morning. I often give liquid manure after heavy rains in summer; it is much less trouble to do so then, as it does not require so much mixing.—J. L. B.

#### PLANTING LILIES.

PERHAPS no time of the year is more generally favourable for planting many of the hardiest and showiest of Lilies than the present. Granted it is quite late enough, even too late for some members of the genus; but the genus is a large one, the time of flowering varying considerably in the different sections, and to be exact in treatment is frequently not at all convenient. Happily there are but few Lilies that are of any service for cultivation outside but what will succeed fairly well much later than the ordinary time. I may instance the *L. Thunbergianum* and *L. speciosum* series, the former blooming from the end of May until July, and the latter in September and October. Now it does not seem quite right to plant samples of both these groups at the same time, rather I think those which bloom earliest should be planted accordingly. Nevertheless, I have known the early-flowering species to do well planted between November and February. Still, no Lily should be kept out of the soil a moment longer than is absolutely necessary; and my remarks refer chiefly to fresh purchases, or the removal of those already established from one position to another, but more particularly to the former, as it is not at all desirable to disturb Lilies very often. Rather supply them with fresh soil and food annually; and although they may ultimately get rather crowded, yet they will give greater satisfaction if allowed to remain undisturbed.

In the following notes I will not deal with those species that need pampering, as these the specialist will look after; but there are many Lilies which are honestly worth some little care in order to ensure success, such, for instance, as *L. testaceum*, *L. chalcedonicum*, *L. longiflorum*, *L. speciosum* and its varieties, *L. parlatinum* and varieties, and *L. Martagon*.

The primary points to be observed in the cultivation of the above-named Lilies and several others are—First, soil, which as a rule



should be good sandy loam; secondly, position, which should be well drained, as well as partially shaded and sheltered to ensure perfect success; and thirdly, always a fair and most frequently a liberal supply of decayed manure. The value of the latter was happily proven with some bulbs of *L. speciosum rubrum*, some of which were planted with manure beneath the bulbs only, and others with a good supply above the bulbs in addition. The behaviour of the stem roots was most marked in relation to the manure. With the former the long fleshy roots pushed their way down the bulbs to the manure, and fed upon it most heartily; but where the manure was spread over the bulbs the stem roots spread horizontally and almost confined themselves to the soil above the bulbs. The largest bulbs I could now lift of this variety are those which have received the most liberal supply of manure, and some of them would measure 15 inches in circumference. If the soil is naturally suitable all that will be necessary is thorough preparation by deep digging and breaking up. If unsuitable, additions must be made which will meet their requirements—viz., a supply of good fibrous loam. If Lilies are planted amongst Rhododendrons a suitable shelter is afforded during spring and early summer, and hence shrubberies and mixed herbaceous borders are most suitable places. The risk of injury may be much reduced if the bulbs are planted at a proper depth; none should be less than 6 inches deep, and the strongest growers 8 or 9 inches deep. There would thus be more time occupied before the stems appeared above the surface; some support could be afforded, and the bulbs will in every way be more benefited than by shallow planting. Undoubtedly many are injured by scorching sun heat upon the bulbs, whereas they are not so easily affected at the depth indicated above. In an old garden recently some fine clumps of *L. chalcedonicum* and *L. Martagon album* were unearthed which were nearly a foot deep, and the bulbs were excellent, but being too crowded not so large as they would have been with ample room for development; nor perhaps if they had received annual top-dressings of manure mixed with loam. *L. Martagon album* does not at all like being frequently disturbed, and for a year or two after fresh planting it often deteriorates, but finally becoming re-established it forms splendid masses, and must be regarded as one of the most chaste of hardy border flowers.

Of the large number of Lily names catalogued there are comparatively few generally suitable for the outside garden, of which the following are really good and very showy:—*L. bulbiferum*, *L. croceum*, *L. Thunbergianum* vars., and approaching these varieties of *L. davuricum*, such as *Sappho*, *grandiflorum* and *incomparabile*, *L. candidum*, *L. longiflorum*, *L. Washingtonianum*, *L. canadense superbum*, *L. chalcedonicum*, *L. Humboldtii*, *L. Parryi*, *L. pardalinum* and the variety *californicum*, *L. Szovitzianum*, *L. testaceum*, *L. speciosum* vars., especially *album* and *rubrum*, *L. auratum*, and *L. tigrinum* varieties; especially desirable is the double form. I know some growers urge that *L. auratum* and *L. speciosum* are only suitable for pot culture. This may be true in some few parts of the kingdom, but I am sure there is great pleasure derived from their appearance out of doors; there is something noble in *L. auratum* towering above his fellows, while the flowers of *L. speciosum* are very welcome and useful. The best advice I can give is, Grow them abundantly both in pots and the open ground.—T.

#### CAUSE OF MILDEW.

ALLOW me thank Mr. Divers for his letter on mildew. I wish other Rose-growers would write and give their experience, and more especially their failures, with this pest, so that the subject may be well ventilated. It is now eight years since I began to grow Roses, and though I have never shown any I must necessarily have gained some experience, as I attend to my trees without any assistance. I will give a short account of my struggle with mildew, in the first instance in the case of Tea Roses grown in 9 and 10-inch pots in a greenhouse.

A few years ago I had a small collection of Teas growing in the open air, but I was so discouraged by the rains spoiling the blooms that I fitted up a few old frames about 3 feet deep at the highest end and then dug out the earth inside about 18 inches deep, thus making a sort of pit. Here the trees grew well and bloomed freely, and moreover were not attacked by mildew. Two years ago I removed to my present address—only a few miles away—but in a much warmer locality. There is a small greenhouse in the garden and I filled it with Tea Roses. The trees grew splendidly, with dark leathery foliage, and hundreds of buds in April, followed closely in May and June by abundance of mildew. I forgot to mention that there are no means of heating the greenhouse. I tried soft soap according to Mr. Bardney's recipe, checked the mildew, and spoiled the blooms; next I tried sulphur, and spoiled the foliage and my temper.

Some people say that disease only attacks weakly plants, but mine were strong and the picture of health. This year the same programme has been gone through. I have tried equable temperature. I do not think that the house has ever been higher than 75° any day this last summer, and the ventilators were closed in the afternoon when the thermometer showed signs of going down. I tried nitrate of soda, but I think rather too late in the season. I have one *Maréchal Niel*; this year it has sent up three growths each about 12 feet long. It was in a 9-inch pot, but I

have now broken the pot and put two barrowfuls of soil for the roots to run in. The *Maréchal Niel* was affected by mildew, but not so badly as many of the other trees, and as it is only a young plant (second year) I kept the enemy down with soft soap. I am afraid that, as Mr. Divers says, fire heat is the only cure. If you are agreeable I will write a few lines about mildew in the open air.—J. C. CLAYTON.

P.S.—Since writing the above I have read Mr. Smith's interesting description of the fungus.—J. C. C.

I QUITE agree with the statement made by Mr. W. H. Divers that "the origin of the evil is at the root of the plant principally, and secondly in the atmosphere surrounding the plant." Last autumn we planted a collection of Tea and Hybrid Perpetual Roses; the former and a few of the latter were planted on deeply worked and well-pulverised ground, the remainder of the Hybrid Perpetuals on ground which appeared as if it had been formerly worked in wet weather. Previous to the drought of last summer setting in they were mulched with half-decayed manure and watered two or three times afterwards, the result as regards mildew being that those planted on the well-pulverised ground were quite free from mildew, whilst those that were planted on the non-pulverised ground were affected. There are others planted on the prepared ground, but which were not mulched or watered. On these a little mildew appeared, the growth that came after the first bloom being affected. I have not the least doubt if these had been mulched and watered like the others it would not have occurred. My observations are that if Roses are planted on well-drained and pulverised fertile soil (which, however, must be deeply worked), mulched early in the season, and liquid manure supplied if required, very little mildew will appear.—A. YOUNG.

#### LIVERPOOL SHOW.

NOVEMBER 25TH AND 26TH.

IT was feared that the sudden change in the weather on the eve of the Exhibition would deter many from showing tender plants. The morning of the Show was even worse, for in addition to a very sharp frost the city and neighbourhood was enveloped by a dense fog. Fortunately the fears were unfounded, both exhibitors and visitors attending in good numbers. The Exhibition on the whole was a great success, and far exceeded in the number and quality of the exhibits those of any previous display held under the auspices of the Society. It may be remarked that the wonderful improvement made by growers of Japanese Chrysanthemums in this neighbourhood was very noticeable at this Show.

CUT BLOOMS.—It was generally considered that the display of these would be limited owing to the earliness of the season and the late date at which the Exhibition was fixed. But such was really not the case, as will be gathered from the fact that nearly 1100 blooms were staged for the prizes offered in the ten classes provided. In spite of the season and date of the Show there was scarcely an inferior bloom exhibited, both incurved and Japanese showing in size and quality a marked improvement over those of previous years. Perhaps the greatest attractions of the Exhibition were the fine collections of blooms staged for the ten-guinea silver cup given by Messrs. Williams & Co., Mount Pleasant, for eighteen incurved and the same number of Japanese varieties. That successful exhibitor, Mr. W. Mease, gardener to C. W. Neumann, Esq., Wyncote, Allerton, was deservedly awarded the trophy for the finest incurved blooms ever seen in Liverpool, while the Japanese were simply wonderful for size and colour. Mr. F. Roberts, gardener to W. D. Holt, Esq., West Derby, was placed second; and the winner of the cup last year, Mr. T. Leadbetter, gardener to R. N. Dale, Esq., Bromborough Hall, Cheshire, third. The first collection contained the following varieties:—Back row—Lord Alcester, fine; Queen of England, large; Emily Dale, good; Empress of India; John Salter, large; and a magnificent bloom of Golden Empress. Second row—Hero of Stoke Newington; Jeanne d'Arc; Barbara, large; Princess of Wales, very fine; Sir Stafford Carey; Princess of Teck. Front row—Mrs. Heale, Princess Beatrice, Mabel Ward, St. Patrick, and Mrs. W. Shipman. Japanese back row—Sultan, Soleil de Levant, Madame C. Audiguier, Fair Maid of Guernsey, Japonais, Mons. Ardene. Second row—Meg Merrilees, Comtesse de Beauregard, Boule d'Or, F. A. Davies, a large beautiful dark flower; M. Tarin, and Peter the Great. Front row—Thunberg, Duchess of Albany, Elaine, Criterion, Comte de Germiny, and Belle Pauline. For twenty-four incurved (distinct) the same competitor was again first, closely followed by Mr. J. Jellico, gardener to J. H. Gossage, Esq., Camp Hill, Woolton, with very fresh but slightly smaller blooms. Mr. W. Playfair, gardener to H. N. Nicholson, Esq., Spital Hall, was awarded the remaining prize, four collections being staged. Mr. Mease had the following blooms distinct from those in the cup collection:—Beauty, White Venus, Prince Alfred, Refulgence, Lady Hardinge, Cherub, and Miss M. Morgan. Of eighteen blooms six collections were staged. Mr. G. Mease, gardener to W. Nicol, Esq., St. Michaels, took the lead with a capital lot of blooms in good condition, followed closely by Mr. G. Heaton, gardener to W. H. Shirley, Esq., Allerton House, and Mr. A. R. Cox, gardener to W. H. Watts, Esq., Elm Hall, Wavertree. Eight lots were staged in the class for twelve blooms, and the prizewinners were Mr. W. Mease, first; Mr. E. Broadey, gardener to W. H. Jones, Esq., The Grange, Horton, second; and Mr. E. Green, gardener to J. Woolwright, Esq., Mossley Hill, third. In the corresponding class for twelve Mr. F. Roberts took the lead; Mr. E. Carson, gardener to — Meacock, Esq., Egerton Park, and Mr. G. Burden, gardener to — Cockburn, Esq., Cloughton, followed closely. The prizes in the class for six blooms were well contested for, the prizetakers being Messrs. C. Osborne, H. Riding, and N. Newton for twenty-four Japanese varieties. Mr. W. Mease again gained the foremost position with a capital collection of large size and fine bright colour, many of the varieties staged being the same as those in his cup collection. The best amongst those not previously named were Dormillion, Curiosity, Khedive, Baronne de Prailly, Hiver Fleuri, Dr. Macary, Golden Dragon, large and very good; Tintamarre, and Sarnia. Mr. J. Jellico was a close second with excellent flowers, and Mr. T. Leadbetter third, also showing remarkably well. Four competitors staged collec-



tions. For eighteen, five lots were staged. Mr. J. Martin, gardener to Mrs. W. G. Bateson, New Heys, Allerton, was first with grand flowers of Mons. Ardene, Alha plena, Soleil de Levant, Criterion, Triomphe du Nord, Comtesse de Beauregard, Striatum, Meg Merrilees, Sarnia, Boule d'Or, Hiver Fleuri, M. C. Audiguier, La Nympe, Japonais, and Triomphe de la Rue des Chatelets. Mr. G. Mease was a good second, and Mr. W. Wilson, gardener to H. Cunningham, Esq., Gorse Cop, Gateacre, a close third. For twelve blooms eight competitors staged blooms, and the prizetakers were Messrs. F. Roberts, G. Eaton, and E. Broadley, all showing well. For six Anemone and six reflexed varieties there was good competition, the premier position being deservedly awarded to Mr. J. Jellico for very fine blooms of the following varieties:—King of the Crimsons, Dr. Sharpe, Golden and Lilac Christine, Acquisition, Mrs. Forsyth, Chevalier, Lady Margaret, Bijou, Mons. Chate, George Sand, and Princess Louise. Messrs. E. Green and T. Leadbetter were second and third in the order named. The remaining small classes were well filled, as many as eleven and twelve competitors staging blooms for the prizes offered.

**PLANTS IN POTS.**—The trained plants, both dwarf and standard, were up to their usual standard of excellence as seen at this Society's exhibitions. The bushes, although they displayed a marked improvement over those exhibited last year, were still the weakest portion of the Exhibition, and there is ample room for improvement before they are equal to those seen at Manchester and at southern exhibitions. For six large-flowered plants, trained, Mr. J. Hughes, gardener to H. McIver, Esq., Elmswood, Allerton, was well to the fore with faultless examples of John Salter, Beverley, George Glenney, Prince of Wales, Lady Hardinge, and Lady Slade. Mr. C. Finnigan, Winter Gardens, New Brighton, was second; and Mr. W. Bustard, gardener to J. Lewis, Esq., Aigburth, was third. For three plants the same exhibitor was again first with equally fine plants, his specimen of Jardin des Plantes being a marvel of cultivation, Lady Hardinge and Mrs. George Rundle being the other two varieties. Mr. T. Blackmore, gardener to Major Pemberton, Fairfield, was second with larger plants, but less profusely bloomed. For one plant, Mr. J. Hughes again took the lead. For six Pompons Mr. T. Blackmore was first with plants far ahead of any others staged, the foliage being beautifully fresh, while the flowers were numerous and large. The varieties were Lilac, White, and Golden Cedo Nulli, Lady Isabella, Drin Drin, and St. Thais; Mr. J. Hughes being second, and Mr. W. Bustard third. For three plants Mr. J. Hughes took the lead with very fine plants of White and Lilac Cedo Nulli and Maroon Model; Mr. T. Blackmore second. For one plant Mr. T. Blackmore took the lead, while Mr. E. Green was placed first for one standard. The prizewinners for bushes were Messrs. E. Green, J. Hughes, and W. Bustard.

**ORCHIDS.**—The schedule provided five classes for these plants, and the prizes offered were well contested. On the whole, the plants staged were of a very superior quality to what has been the case on previous occasions. For three plants Mr. E. Green gained the premier award, and staged a grand well-flowered plant of *Oncidium Rogersii*, a fine *Odontoglossum Alexandræ*, good variety, and a well-flowered plant of *Lælia autumnalis*; Mr. Grantham, gardener to R. Young, Esq., second with *Odontoglossum Roezlii* album with three spikes, *Vanda cœrulea* one fine spike, and a well-flowered *Oncidium ornithorhynchum*. Third Mr. J. Edwards, gardener to S. Walker, Esq., Rodney Street. For one plant Mr. W. Wood, gardener to Lieut.-Col. Wilson, The Hermitage, Aigburth, was first with *Oncidium Rogersii*, fine plant, well bloomed; Mr. T. North, gardener to E. Harvey, Esq., Aigburth, second with a beautiful well-flowered specimen of *Dendrobium heterocarpum*. Mr. Grantham gained the remaining prize. For two *Calanthes*, Mr. A. Brown, gardener to G. Webster, Esq., Overchurch, Upton, Cheshire, was first with capital specimens, and Mr. W. Mease a good second. For one plant the winners were Mr. J. Hurst, gardener to W. B. Bowering, Esq., and Mr. W. Mease. For one *Cypripedium* Mr. Edwards was well first with a grand pan of *C. Spicerianum* with about twenty flowers; Mr. W. Evans, gardener to Mrs. Lockett, Grassendale House, was second with *C. insignis*, and Mr. W. Mease secured the remaining prize with the same variety.

**STOVE AND GREENHOUSE PLANTS.**—These were shown in the usual excellent style and in about the same numbers as in previous years. The plants staged by Mr. A. R. Cox showed a marked improvement over those he has previously shown in St. George's Hall. It is needless to comment on the plants staged by Mr. W. Mease, suffice it to say that he was again awarded the highest honours for six plants, not less than three in bloom. Two of his giant *Crotons*, *C. Disraeli* and *C. Williamsii*, were in the group, and a large plant of *Areca lutescens*. The flowering plants were *Azalea amœna*, *Bouvardia Vreelandi*, and *Calanthe Veitchii*, a large handsome specimen. Mr. A. R. Cox gained the second position and had a good *Croton angustifolius*, *Latania borbonica*, and a large well-flowered *Lantana Don Calnet*. Mr. J. Vaughan, gardener to — Callart, Esq., was awarded the remaining prize for very creditable plants. For four plants, not less than two in flower, Mr. A. R. Cox took the lead with a grand splendidly coloured *Croton Queen Victoria*, a large *Alocasia*, *Ixora Dixiana*, and well-grown *Erica hyemalis* between 3 and 4 feet through. Mr. W. Mease was a good second.

Ferns were very well shown, and Mr. A. R. Cox took the lead with well-developed plants of *Adiantum cuneatum*, *A. formosum*, *A. farleyense*, *Gleichenia Mendelli*, and a large *Cibotium* and a well-grown *Gymnogramma*. Mr. W. Evans was the other exhibitor, and was awarded a second prize for a very even collection of plants. For one Tree Fern Mr. R. Cubbon, gardener to Mrs. A. Johnson, Woolton, was first with a noble specimen of *Dicksonia antarctica*, and Mr. J. Lowndes was second with the same variety.

**PALMS.**—These were not numerous, but the plants exhibited were throughout of large size and in perfect health. For three, Mr. W. Mease headed the list with *Latania borbonica*, *Areca crinita*, and *Pritchardia pacifica*. Mr. R. Cubbon was a good second with rather smaller plants, and Mr. W. Evans third. For one plant Messrs. J. Hurst, W. Mease, and A. R. Cox were successful.

**PELARGONIUMS.**—A new feature was formed by these, and three collections were staged for the three prizes offered for six plants, three single and three double varieties. The plants contributed were very creditable considering the season of the year. Mr. W. Mease was well to the fore, followed by Messrs. T. Gowan and C. Copple, gardener to T. S. Rogerson, Esq., St. Michaels.

**EPIPHYLLUMS.**—These were all that could be desired, the plants exhibited

being large and most profusely flowered. Mr. P. Barber, gardener to Mrs. Barnsley, St. Michaels Hamlet, was a good first, Mr. J. Hurst second, and Mr. A. Croshie, gardener to Bernard Hall, Esq., third. For one plant Messrs. P. Barber and E. Green were the principal winners.

**PRIMULAS.**—On the whole these were not so large in size as they have generally been, but were throughout better grown and more profusely flowered. There was also a very marked improvement in the varieties. For six plants the prizetakers were Messrs. A. Brown, A. Collins (gardener to S. Smith, Esq., M.P.), and J. Hughes. Tree Mignonette was good, and Mr. J. Hurst gained the chief award; Mr. W. Minshull, gardener to H. Nash, Esq., Dingle Mount, the same position for six pots of Roman Hyacinths; and Mr. C. Finnigan took the lead for four Poinsettias, which were very well grown plants with large bright bracts.

**TABLE PLANTS.**—A good number of competitors entered this class for the three prizes offered for six plants. The whole of the collections were small and even in size, and even those that did not gain honours gave great credit to the several exhibitors. The premier position was gained by Mr. J. Agnew, gardener to Mrs. Watts, and his plants were faultless, and comprised the following:—*Dracæna gracilis*, *Pandanus Veitchii*, *Croton interruptus aureus*, *Cocos Weddelliana*, *Aralia Veitchii gracillima*, and *Dracæna superba*. Mr. G. Mease was a close second, and Mr. E. Thrupp, gardener to H. J. Walmsley, Esq., Westwood House, Wigan, a good third.

**BOUQUETS** were both numerous and good, the only fault being perhaps the large size of some of the exhibits. In the class open to nurserymen Miss M. A. Corke, Southport, was placed first with a very well-arranged bouquet of choice flowers; Mr. G. Downes, florist, Princess Park, second; and Mr. C. Rylance, Aughton, third. In the corresponding class the successful competitors were Messrs. T. Robinson, Mossley Hill; W. Evans, and J. Agnew. For one epergne or vase for table decoration Mr. J. Briarley, gardener to D. Adamson, Esq., Didsbury, was first with a very light effective arrangement; Mr. J. Phythian, gardener to D. Walker, Esq., Forest Lawn, West Derby, second; and P. Barber, third.

#### FRUIT.

The exhibition of fruit was very large and attracted considerable attention from visitors. This department of the Show afforded no light work for the Judges, for the number of competitors in the various classes and the superior quality of the whole of the exhibits rendered the work of comparison and close scrutiny necessary before final judgment.

**COLLECTIONS.**—In the class for twelve dishes two competitors staged only, and both were so strong that Mr. Hannagan, gardener to R. C. Naylor, Esq., Hooton Hall, gained the first position by two or three points only. This collection comprised Grapes—Gros Colman, large bunches and berries of perfect colour; Alicante, equally good; Muscat of Alexandria, very fine and large bunches of Mrs. Pince, just a little deficient in colour; Pears—Doyenné du Comice good, Glou Morceau very fine, Chaumontel large, and grand Beurré Diel; Apples—Blenheim Pippin well coloured and large, King of the Pippins and Ribston Pippin, and a good Conqueror of Europe Melon. Mr. Goodacre, gardener to the Earl of Harrington, was the other competitor, and was placed second, having remarkably good Alicante and Gros Colman Grapes, a Pine, British Queen Pears, and Blenheim Pippin Apples; two bunches of Grapes being slightly inferior in this collection to those in the preceding one. For six dishes, Pines excluded, five or six collections were staged. Mr. J. Hurst was deservedly placed first, Mr. Hannagan and Mr. Goodacre second and third respectively. Mr. Hurst staged splendid examples of Alicante and Muscat of Alexandria Grapes, superbly finished and good in all other respects; Beurré Diel and Glou Morceau Pears, and two good dishes of Apples not named.

**GRAPES.**—Some idea may be formed of the numbers exhibited when it is stated that sixty-five entered, and the majority staged in competition for the fifteen prizes offered in the five classes devoted to them. The exhibits were not only numerous, but the majority of them were faultless examples of cultivation. For two bunches of black Grapes (Muscat flavour) four lots were staged, and the chief award was gained by Mr. J. Hollingsworth, gardener to C. M. Campbell, Esq., Woodseat, for two very fine bunches of Mrs. Pince, perfection in every respect except colour, and this was much better than this variety is generally seen. Mr. Goodacre was second with Muscat Hamburgh, good bunches well finished, but the berries were rather undersized. Mr. A. Collins gained the remaining position. In the corresponding class for two bunches, not Muscat flavour, thirty bunches were staged. Mr. T. Elsworthy, gardener to R. Gladstone, Esq., Court Hey, Liverpool, took the lead with perfect bunches of Alicante, followed by Mr. R. Brownbill, gardener to J. Hargreaves, Esq., Ravenswood, Rock Ferry, with the same variety. Mr. J. Lowndes, gardener to S. S. Parker, Esq., Woodlands, Aigburth, was placed third with Gros Colman, bunches large and well finished, while the berries were an unusually large size. For two bunches of white Grapes (Muscats) thirteen exhibitors staged, and there was not a poor sample amongst the whole. Mr. G. Middleton, gardener to R. Pilkington, Esq., Rainford Hall was first with examples as good as could be desired; Mr. P. Mottershead, gardener to H. S. Woodcock Esq., and J. Briarley, second and third, both staging the same variety in excellent condition. For two bunches of any other white variety a large number of exhibitors staged Golden Queen. Mr. J. Hollingsworth had the best, followed closely by Mr. P. Ingham, gardener to J. Goldsworth, Esq., Windle Hall, and Mr. T. Elsworthy, all showing the same variety. Of four bunches sixteen collections were staged, the same exhibitor being again first with beautiful bunches of Lady Downe's very good, Alicante, Golden Queen, and Trebbiano. Mr. T. Elsworthy was next with very good Gros Colman, Muscat of Alexandria, Alicante, and Golden Queen. Mr. C. A. Young, gardener to J. Evans, Esq., Hurst House, Prescott, third.

**PINES.**—These were not numerous, but the fruits were large and very even throughout. For two Mr. D. Roberts, gardener to H. Packe, Esq., Prestwold Hall, was placed first with two very fine fruits. Mr. W. Speed, gardener to Lord Penrhyn, Bangor, second, and Mr. G. Gibson, gardener to Mrs. Banks, Winstanley Hall, third. For one fruit the successful exhibitors were Messrs. D. Roberts, G. Gibson, and W. Speed in the order as named.

**PEARS.**—Though not quite so numerous as we have previously seen them, the fruits staged were remarkably large and finely coloured. For eight dishes only one collection was staged, and that by Mr. Hannagan, who well



deserved the first prize awarded him. His collection comprised dishes of Marie Louise, very large; Beurré d'Arenberg, Chaumontel, Beurré Diel, Duchesse d'Angoulême, Doyenné du Comice, Glou Morceau, and Louise Bonne de Jersey. For four dishes the competition was good and keen. Mr. W. Mease was placed first, having good dishes of Easter Beurré, Beurré Diel, Marie Louise, very fine; and Beurré Bachelier. The Rev. L. Garnett, Christleton Priory, Chester, was a good and close second with Winter Nelis, Josephine de Malines, Marie Louise, and Doyenné du Comice, the last two being remarkably fine. Mr. R. Roberts, gardener to T. Harrison, Esq., Belle Vale, Gateacre, third. For one dish of dessert Pears the Rev. L. Garnett was first with grand examples of Doyenné du Comice. For one dish of stewing varieties Mr. D. Roberts took the lead with large fruits of Catillac.

**APPLES.**—These were well shown and in large numbers. For six dishes of dessert varieties nine collections were staged. Mr. F. Miller, gardener to J. F. Friend, Esq., was first with a grand lot of fine fruit and highly coloured, having very good Scarlet Pearmain, King of the Pippins, Ribston Pippin, Adam's Pearmain, and Cox's Orange Pippin. Mr. J. Davies, gardener to Rev. H. Arkwright, Bodenhams, Herefordshire, was a close second with magnificent examples of Boston Russet, Court Pendu Plat, Ribston Pippin, and Cox's Orange Pippin. Third Mr. Hannagan. For three dishes Mr. D. Roberts took the lead with Bess Pool, Ribston Pippin, and King of the Pippins; Mr. J. Lowndes second; and Mr. L. T. Turner, gardener to D. McIver, Esq., Woodslea, Bromborough, Cheshire, third. For one dish no less than twenty competitors staged, the Rev. L. Garnett being successful with Cox's Orange Pippin; Mr. Goodacre second with Blenheim Pippin; and Mr. L. T. Turner third. Some little mistake had occurred amongst the kitchen varieties, and we can scarcely say that all the names given may prove perfectly correct. For eight dishes Mr. Goodacre was placed first with very large fruit of Warner's King, Flower of Kent, Kentish Fillbasket, Bedfordshire Foundling, Alfriston, Mère de Ménage, Lady Henniker, and Waltham Abbey Seedling. The second and third prizewinners' names are left out because we believe it was here that the mistake was made by some wrong tickets being placed on the exhibits and they became mixed. For four dishes Mr. J. Davies with very large highly coloured fruits of Mère de Ménage, Blenheim Pippin, Winter Nonesuch and Warner's King. Second Mr. T. Weeden, gardener to T. C. Morris, Esq., Beechwood. Third Mr. J. Bounds, gardener to Miss Crosfield, Oaklands, Aigburth. For one dish the winners were Mr. H. H. Nicholson, Mr. R. G. Waterman, gardener to A. Tate, Esq., and Mr. J. Bounds.

**VEGETABLES.**—These were a new feature, and three prizes were offered for a collection of six dishes, distinct. Six or seven lots were staged, Mr. Goodacre being placed first with good Schoolmaster Potatoes, Long Surrey Carrots (clean), Criterion Tomatoes, Cauliflowers, and very fine Brussels Sprouts. Mr. D. Roberts followed closely, having a good dish of Mushrooms and French Beans; Mr. Hannagan was third with a very neat lot.

**MISCELLANEOUS EXHIBITS.**—There were numerous exhibitors in this section, and many of the contributions had to be arranged outside the hall or in any corner that could be found for them. Messrs. F. & A. Dickson and Sons, Upton Nurseries, Chester, contributed a collection of eighty varieties of Apples, which were very fine. Messrs. R. Smith & Co. had a similar collection, but not quite so many varieties. Messrs. H. Cannell and Sons staged Primulas, single Chrysanthemums, and Zonal Pelargonium blooms in their usual style. Messrs. R. P. Ker & Sons, Aigburth Nursery, a magnificent bank of Cyclamen, which was greatly admired. The Horticultural Company (John Cowan), Garston, an assortment of small decorative flowering and foliage plants. Messrs. Turner Brothers a similar collection, but comprised more flowering plants than the preceding. Mr. R. Ashcroft, West Derby, a small collection of similar plants. Messrs. T. P. Bethel & Co. their folding flower boxes. Messrs. Blake & McKenzie also staged flower boxes and horticultural requisites; and Messrs. Knight Brothers had a collection of seeds and a very similar exhibit.

The arrangements of this fine Exhibition were in every way perfect. The prize cards had been written prior to the day of exhibition, and only needed stamping after the Judges' decision. Mr. Gore, the energetic Secretary, the Committee, and all who have had any management in the grand Exhibition just held deserve the highest congratulations.

### CHRYSANTHEMUMS BENDIGO AND MABEL WARD.

SEVERAL paragraphs have appeared from time to time respecting the above-mentioned varieties of Chrysanthemums, the general opinion being that they were synonymous. The growth is very much the same, but I am inclined to think Bendigo has more width of petal and the colour clearer and better than Mabel Ward. I obtained two plants of Bendigo as soon as sent out, but they had evidently been propagated from hard flowering growths, and made a very poor start, producing no flowers. During August, however, they threw up a quantity of good suckers, which, with several other varieties, were struck and grown in large 60-size pots for the production of a single bloom. These are now carrying some very useful flowers, the plants being about 12 inches high. This is the only opportunity I have had of comparing blooms of Bendigo and Mabel Ward, and I forward one of each for your inspection, the former from the small plants described, the latter from a spring-struck plant grown with others in 8-inch pots. Mr. Gibson had a good bloom of Bendigo in his stand of thirty-six at the Crystal Palace larger than I ever remember seeing Mabel Ward.—C. HERRIN, *Chalfont Park*.

[There is no question as to the dissimilarity of the blooms before us, nor of the superiority of the one named Bendigo, which has florets distinctly broader, longer, and of a deeper and clearer yellow than those of the other. With blooms such as these before them any judges would be quite justified in ruling them as separate varieties. It must be remembered, however, that the example of Bendigo is younger and fresher than the other; it is also presumably a crown flower, that of Mabel Ward being perhaps from a terminal bud. This point Mr. Herrin can decide, and it is not unimportant, as we have seen flowers equally dissimilar pro-

duced by the same plant from the different buds. Except Mr. Gibson's bloom referred to we have not seen a Bendigo at all like the one sent by Mr. Herrin, but we have seen blooms named Bendigo that were identical with the example of Mabel Ward now before us. Mr. Herrin will doubtless grow the two forms under precisely the same conditions next year, and if the character of the new claimant for public favour is preserved distinctness of the variety will be admitted. Mr. Herrin has also sent specimens of outdoor-grown Chrysanthemums cut on November 29th that surpass many that we have seen in prize stands during the past month.]



ALTHOUGH the WEATHER has been very inclement during the past few days, and planting, and outdoor work generally, has been impeded in the neighbourhood of the metropolis, there has been scarcely any frost and no snow to rest on the ground; but we learn from correspondents that heavy falls of snow have occurred in many districts of the country. Rain fell heavily on Tuesday night, and a great rise in temperature occurred, a thermometer in a London garden registering 69° at nine o'clock on Wednesday (yesterday) morning. Can the instrument be correct?

— MESSRS. J. LAING & CO., Forest Hill, send us blooms of their new POMPON CHRYSANTHEMUM VAL D'OR, a very pretty variety, with neat full bright yellow flower heads, the florets being all tubular and closely packed. It is free, and will doubtlessly prove useful for cutting.

— THE annual dinner of the National Chrysanthemum Society was held on Tuesday last at the Old Four Swans, Bishopsgate, E. Sanderson, Esq., President of the Society, in the chair, about seventy members being present. The Hon. Secretary, Mr. W. Holmes, stated that no less than 3734 blooms were entered for competition at the late Show at the Royal Aquarium; that the number of members during the past twelve months had increased from 143 to 257 at the present time; and that no less a sum than £199 1s. had been paid in prizes to the successful exhibitors on this evening. Special reference was also made to the important work of the Floral Committee during the late Chrysanthemum season, and it was stated also that the next and last meeting of this Committee for this year would be held at the Old Four Swans, 84, Bishopsgate Street, on Thursday evening, December 11th, at seven o'clock. A very urgent appeal was also made for new subscribers, as it is only by this means that the increasing work of the Society can be carried into effect. An annual subscription of not less than 5s. entitles to all privileges as a member.

— MESSRS. MEISSNER & BUCK, through their representatives, Messrs. Schwenckert & W. G. Wallis, of Fleet Street, have sent us a parcel of their CHRISTMAS CARDS. We have on former occasions spoken of the artistic excellence of these cards, and we can say of those issued by the same firm this year that they are quite up to the standard of any we have seen. The floral subjects are very beautiful.

— MESSRS. LETTS & SON have sent us a parcel of their DIARIES which for variety and usefulness cannot possibly be surpassed. There are diaries for every purpose—for the office, the library, and the household. There are the professional diaries—the medical, the appointment, the clerical, and the commercial, and when we say that Messrs. Letts issue in all upwards of sixty different patterns it will be understood that there is surely one that will suit everybody. We commend them very highly, for they are carefully prepared, very correct, and full of useful information.

— MR. C. HERRIN, Chalfont Park Gardens, Gerrard's Cross, sends us a remarkable PROLIFEROUS CHRYSANTHEMUM BLOOM of the variety Fair Maid of Guernsey. The central head is surrounded by a dozen smaller heads, the whole measuring about 10 inches in diameter. It is a repetition on a large scale of the Hen-and-Chickens Daisy.

— "T. R., *Great Grimsby*," writing in reference to the MILD WEATHER IN NOVEMBER, observes:—"I gathered, on the 20th ult., a fine dish of Mushrooms from the open ground, which were quite as good as any gathered in September, and the beds of Pelargoniums about here not cleared off were, up to last night, quite as fresh and flowering



as well as at any time during the summer. I was looking at some carpet bedding a week ago that appeared as well as ever it did—a rare occurrence in this part of the country, and near the sea.”

— MR. C. WARING, whose experience on CUTTING DOWN CHRYS-ANTHEMUMS we published on page 480 last week, sent a box of blooms which, however, did not reach our hands in time to be acknowledged in our last issue. They must have been very fine when in a fresh state and decidedly above the average of flowers grown for decorative purposes.

— PARTS 15 and 16 of THE ILLUSTRATED DICTIONARY OF GARDENING (L. Upcott Gill, 170, Strand) continue the alphabetical description of plants from *Coleus* to *Cunninghamia*, abundantly illustrated with blocks from various sources. As we have previously remarked, a considerable improvement is observable in the recent numbers as compared with those first issued.

— A PARCEL of MESSRS. CASSELL & Co.'s PUBLICATIONS just received contains the following:—Part 51, “Paxton's Flower Garden,” which gives coloured plates of *Billbergia polystachya*, a species of Bromeliad with bright red bracts and green flowers, and *Dielytra chrysanth*, distinct and handsome, with abundant small bright yellow flowers. It is one of the Californian discoveries of Mr. Douglas, and was subsequently found by Mr. W. Lobb, through whom it was introduced by Messrs. Veitch & Sons. Woodcuts are also given of *Chionanthus retusus*, *Elisena longipetala*, *Grevillea acanthifolia*, and *Araucaria Cooki*. Part 69 of “Familiar Garden Flowers” contains the Mountain Windflower (*Anemone apennina*), and the Persian Cyclamen (*Cyclamen persicum*), the latter figure scarcely doing justice to this plant as it is now grown. Part 92 of “Familiar Wild Flowers” gives figures and descriptions of the Butterfly Orchis, *Habenaria bifolia*, and the Wood Loosestrife, *Lysimachia nemorum*. Part 10 of the “Encyclopædic Dictionary” continues this valuable work from beetle to bot-fly, making 640 pages published up to the present.

#### NOTES ON ROSES.

IN reply to your correspondent “A. F. M.,” I may be permitted to ask if Hybrid Perpetuals always ripen their wood as well as could be desired in the southern parts of the country? I have said nothing about un-ripened wood except where Rose gardens are enclosed by evergreens and forest trees, as too frequently is the case in private gardens. Tea varieties have stood here even as standards without the slightest protection, while H. P.'s in the same bed have been destroyed.

Maréchal Niel, where it will do well, I consider one of “the best Teas,” not perhaps from an exhibitor's point of view; therefore, exhibitors are inclined to substitute some other that will flower about the time a box of blooms is required. The majority of Rose growers do not judge Roses entirely by the exhibitor's standard, and in consequence the early-flowering nature of the Maréchal to some extent is a recommendation in its favour. Few exhibitors would class the old China Rose as one of the best for early and late flowering, but such nevertheless is really the case, and a bed would be found invaluable for those who require fragrant Rose buds either early or late in the season.

To return to Maréchal Niel. The reason I advised it to be grown in favourable localities is because this district is not favourable for it. In how many gardens in the northern parts of the country is this Rose found succeeding even on walls? Some years ago I succeeded with it very well in the eastern counties, but the very moist atmosphere of the Lincolnshire fens during winter proved more detrimental to it than frost.—A NORTHERNER.

#### ROCKERIES.

THIS mode of growing certain plants, which by experience we find to be the most suitable and efficient, is rapidly gaining ground even amongst those that have long held the opinion that ordinary borders were quite sufficient. In the growing season proper—that is, when the roots are most active, the border, or indeed any flat piece of ground, may suit them admirably; but it is the resting season that the border, perhaps damp and low-lying, and with an extra share of surface moisture, and which probably has not the advantage of the kindly influence of a wall, is found markedly inadequate to bring certain rock plants through our trying winters.

Our object, then, is clearly not to try our hardest to change the natural conditions under which plants grow, but to try and imitate Nature as far as possible; and although we may have to deplore many failures unforeseen before we hit upon the exact exposures best suitable for the most fastidious amongst the plants, we must have patience and perseverance, as it is now pretty generally understood amongst patient cultivators that a particular exposure in one locality may not suit a certain plant in another, and that at no great distance apart. One of the great

advantages we in the country, and especially in the north, have over our town neighbours is the pure bracing atmosphere, free from the fogs and other impurities consequent on too close a situation to large smoky cities. I do not refer to the exact positions of plants that are of a trailing or creeping disposition; the same kind of position will suit them everywhere, that which will show them off to the best advantage being the only requisite consideration.

Rare plants, or those scarce in cultivation, are when received too often thrust into the first position or empty space that offers in a walk through the rock garden; the idea of asking the locality whence the plant was received or the alteration in this necessary on a change of atmosphere never occurring. The consequence is generally a not surprising dead failure where a little care and appeal to past experience might have overcome the difficulty, by deliberately choosing the position regardless of a plant being there unless a rare one, but if a stronger-constituted plant so much the better, simply transplanting it to another place and making room for the new arrival.

The exact style of rockery building has always been a sore question, resolving itself, like many other things, into a matter of opinion, depending in some instances on the taste of the proprietor, in others on the amount of money given for such purposes. In nearly all our principal public resorts and in many private places rockeries, a few on gigantic principles, are to be found, and the various forms and aspects chosen in the different localities give a clue to the altered conditions some plants require for their well-being in various atmospheres. At Edinburgh the rockery is on rather an extensive scale, glaringly formal to the very walks by which it is copiously intersected. For this a bank is taken 4 or more feet high, and at regular intervals, say a foot apart, a horizontal line of regular boxes are made with thin slabs of stone, varied in outline only by the projections and recesses of the margin. Then from the first terrace you are led by paths to numerous round symmetrical pieces, which are in a few places barely covered with *Ericas*, *Manisias*, and other kindred plants. About the general plan I have little to say, and the position or exposure still less. The plants to all appearance do well, and especially where they are extra large and strong the formality is quite done away with. The Fern rockery on the north side is a much more satisfactory production, and was in all probability an after thought, as was also the bulb rockery. The Fern rockery is everything that could be desired for exposure, and combines usefulness with a general rustic and natural appearance.

For bulbs no attempt to form a rockery has been made, but the general idea is good, each species being surrounded with stones in a natural way both keeps them separate and also helps the underdrainage.

The rockery in Messrs. Backhouse's nursery at York is probably the best imitation of Nature yet accomplished in this country, some of the stones used being very large and weighing several tons. I am afraid after seeing the above that imitation may, however, be overdone, and in this case I think it has, one reason being the large amount of ground taken up for the comparatively small number of plants found there. The rockery at York is undoubtedly a rockery, and a very huge concern, but as a means of growing plants I prefer the free use of much smaller stones, and in a way combine the two. Various aspects are obtained, but in these Ferns seemed to be the predominant feature, and indeed they are quite at home, reflecting their graceful forms in the water below. The undulations and windings of the walks tend to mystify one at first, and I think them miserably narrow and uncomfortable. The rockery at Floore Weedon is on altogether a new principle, and I think a good one for plants. Huge mounds of soil are thrown up into which are embedded stones of various sizes, broken here and there with huge overhanging boulders and well supplied with narrow walks, undulating and winding. At Malpas the rockeries, which are not very extensive, rise abruptly from the smooth green lawn, very neat and artistic, and bear the stamp of being made to grow plants well.

The rockery at Kew, which until lately was of a very insignificant nature for so vast an establishment, has been augmented by a structure of which the nation may well be proud.

The arrangement is simple and natural, and evidently made with a view to the better accommodation and convenience of the increasing number of visitors. A broad winding walk runs through the entire rockery, which is arranged on each side, varying in height in different places with a few huge boulders of composition stone.

Fortunately, for the better appearance of the whole, some parts are composed of roots, and these exposures, to my way of thinking, are the best in the whole rockery, and being composed



of the rougher and stronger-growing plants exclude altogether small and rare Alpines. In two places, one of which is dignified with a natural waterfall, a very good attempt is made to imitate the different strata or formations, and which is used for wall or trailing plants.—M. S.

#### IN SCOTLAND.

DURING September of the present year a long-wished-for opportunity was afforded me to visit the "Land o' Cakes" to see a few of its celebrated gardens, to view some portions of its most beautiful scenery, and to realise the imaginations which its history had excited in more youthful days. The anticipation of such a journey had yielded many pleasant thoughts

attempt to again pourtray its beauties, suffice it that not one word too much has been written in its praise. Charminglly situated, with every department of the garden as near perfection as the highest skill and most careful thought can render it, no one can visit Drumlanrig without being greatly impressed by its lordly dignity and its excellent keeping. My visit was a hasty one, but by the kindness of Mr. David Thomson I was enabled to see all the chief points of interest, and to carry away many pleasant memories.

Proceeding from Thornhill early in the afternoon to busy Glasgow, and thence to historic Stirling, I completed the second stage of my journey at Bridge of Allan sufficiently early to enjoy a lengthened and interesting conversation on orchidic subjects with my esteemed host Dr. A. Paterson, whose name is familiar to readers of this Journal as one of the most distinguished orchidists in the north. The following



Fig. 86.—ODONTOGLOSSUM ALEXANDRE AT FERNFIELD.

for several years, but a busy life had not until the present season allowed sufficient leisure to carry the desire into execution. As with many others connected with horticulture, my route northwards was determined by the International Exhibition at Dundee, and by starting a week in advance of this event I was enabled to combine a considerable amount of business with pleasure, which was still further increased by extending the duration of my stay until the Edinburgh Show in the following week. This enabled me to visit several establishments, concerning which a few jottings may not be without interest to southern readers of this Journal.

The route selected was the Midland line to Carlisle, and thence by the North British *via* Dumfries to Glasgow. The latter was chosen to include Drumlanrig in the outward journey, that being a fitting starting point for a tour amongst Scotch gardens. This magnificent establishment has, however, been so frequently described in these pages that I will not

morning I inspected the collection which has gained so wide a fame, and a few observations upon the method of treatment at Fernfield will serve to show how this has been obtained.

#### ORCHIDS AT FERNFIELD.

Almost every class of plants has its especial admirers who consider their favourites as supreme in floral attractions, though nearly all form different standards of perfection. The Rose, the Carnation, and the Chrysanthemum are examples of flowers each of which has a considerable army of devoted adherents, and to these must now be added the Orchids, which are fast emerging from the state of aristocratic seclusion in which they have long remained, and are more distinctly popular than they ever have been. They have been regarded as the luxuries of the wealthy, but extensive importations have reduced the prices of many very beautiful



species to the same level as *Pelargoniums*. They have been represented as so difficult of cultivation that only the favoured few, with every appliance at their command, could expect to obtain success with them; yet intelligent cultivators like Dr. Paterson have done much to dispel this notion and increase the number of Orchid growers by proving that Orchids can, with a judicious and consistent course of treatment, be cultivated in ordinary houses with ordinary care, and above all in moderate temperatures. This last is a most important matter, and deserves every attention, for if there is one matter connected with Orchids which is calculated to bring them into disfavour it is the high temperatures and steaming atmospheres hitherto considered indispensable to the well-being of tropical species generally. There is a peculiar delicacy and grace in most Orchid flowers, often combined with a singularity of form which occasionally becomes grotesque, that must gain admirers, or at least interested observers, but when the contemplation of these floral wonders is attended by the great personal discomfort occasioned by even a short visit to a highly heated stove, it is not surprising that the Orchids supposed to require such treatment should lose favour. So it is that *Odontoglossums*, *Masdevallias*, and others which can be grown in a cool house have advanced so rapidly in popularity of recent years. Dr. Paterson, however, as an enthusiastic Orchid lover, was unwilling to see so many of his most beautiful favourites fall into neglect, and consequently determined to adopt a different method of treatment from that usually accorded tropical Orchids, and with lower temperatures and more abundant ventilation, to render their cultivation more enjoyable to amateurs like himself. In this he has been remarkably successful, and has by that means probably done more to extend Orchid culture in Scotland than any other gentleman in recent years.

The houses, of which there are three in one range and another separate, are span-roofed with side and central stages, except the *Odontoglossum* house, which has side stages, and one small intermediate house, which is similarly constructed. The range of three houses is devoted to the tropical Orchids, such as *Vandas*, *Cattleyas*, *Dendrobiums*, *Cypripediums*, *Aerides*, *Saccolabiums*, &c. There is a fair amount of piping, but not nearly so much as is customary in such houses. Abundant means of ventilation, both below the stages and in the roof, is provided, the floor being of earth, and kept clear under the stages to prevent slugs and injurious insects harbouring. A constant moisture is kept upon the stages and the floor, but the plants are only occasionally syringed, as with due care in keeping the foliage clean and free from insects this is not needed so frequently and abundantly as is sometimes practised. The most important part of the Patersonian system of culture is, however, the liberal ventilation, and unquestionably I have never seen Orchid houses so freely ventilated as those at Fernfield. The rule adopted is, that whenever the outside temperature rises above 50°, and provided the wind is not too high or keen, it is safe to commence ventilation, increasing it as the external temperature rises until from 60° to 70°, the ventilators and doors are open wide, providing a current of air throughout the range. This might be considered dangerous practice, but the condition of the plants is a conclusive proof to the contrary, at least as regards the favoured *Bridge of Allan*. I have seen most of the best collections of Orchids in England, but I have never seen any to equal the Fernfield plants in healthy, hard, and leather-like foliage, which it would seem almost impossible to injure. There is no tender succulent growth such as that produced by plants in excessively heated close atmospheres, and which is susceptible to the slightest injury, but a solid well-developed growth, which is almost as pleasing to the true plant lover as the flowers such plants are bound to produce. By consistently following this practice, and by a constant close supervision, the worthy doctor has obtained a collection of plants of which he has every reason to be proud, and which no visitor interested in Orchids can see without admiration.

It may be said that *Bridge of Allan* is exceptionally favoured in climatal conditions, and this to a great extent is true. The little town lies snugly at the foot of the lofty Ochil range, which is an effectual barrier to the north and north-east winds; it is fully open to the south, and is thus what it has been aptly termed, "a suntrap." It is the Ventnor of Scotland without the sea. Admitting all these advantages to the fullest extent, yet a bold and commendable system of culture has been adopted which many growers in the south of England would be afraid to practise, though undoubtedly there are numerous districts where during the greater portion of the year the most liberal ventilation might be followed without the slightest danger. In cold exposed localities it obviously would not be safe, but even there a judicious increase in the ventilation would often be beneficial.

That the plants flower abundantly may be taken for granted—such vigorous specimens could not do otherwise; but the best evidence of their floriferousness and the constant supply of flowers was shown by the handsome bouquet presented by Dr. Paterson to the Princess of Wales at the Edinburgh Forestry Exhibition in August last. In this the species and varieties represented were as follows, and in few gardens could so large a collection be cut at the end of August, when Orchid flowers are usually scarce:—*Vanda tricolor* Patersoni; *Vanda teres* Andersonii; *Cattleya Leopoldi* variety *guttata*; *Brassia maculata* *guttata*; *Miltonia spectabilis*; *Odontoglossum Alexandræ*, and *O. Uro-Skinneri*; *Odontoglossum tripudians*, and *vexillarium*; *Odontoglossum Rossii*, and *Rossii majus*; *Odontoglossum Lindleyanum* and *Pescatorei*; *Disa grandiflora* *superba*; *Masdevallia Davisii*, *Veitchii*, and *amabilis*; *Masdevallia maculata* *aurea*, *ochthodes*, and *Lindeni*; *Angraecum eburneum*; *Aerides Reichenbachii*, and *quinquevulnerum*; *Cypripedium barbatum*, *javanicum*, and *Sedenii*; *Cypripedium longifolium*, *Harrisianum*, and *Roezli*; *Dendrobium chrysanthum*; *Stenia fimbriata*; *Maxillaria grandiflora*, *d venusta*; *Dendrochilum filiforme*; *Epidendrum vitellinum*, and

*vitellinum majus*; *Epidendrum prismatocarpum*, and *cinnabarinum*; *Phalaenopsis Luddemanniana*; *Saccolabium Blumei* *majus*, and *gemma-tum*; *Oncidium Weltonii*, and *linguæforme*; *Oncidium Harrisonianum*; and *Mesospinidium sanguineum*, and *vulvanicum*. Forty-seven species and varieties were represented in this right royal bouquet, but several others of a similar character have previously been presented to Her Majesty by Dr. Paterson, each of which has received the admiration it so well deserved.

At the time of my visit there were several fine varieties of *Odontoglossum Alexandræ* flowering, but one plant was just expanding a branched spike, or rather panicle, of an unusual character, which has since fully developed, and an engraving prepared from a photograph of the plant is shown in fig. 86. This had between fifty and sixty blooms expanded at one time, and the appearance of such a grand inflorescence can be readily imagined, the blooms being of great size. Several other varieties with broad rounded petals, pure white and more or less coloured, are included in the collection, together with some handsome *Masdevallias*. Numerous plants of *Nerine Fothergilli* and other species are grown with the *Odontoglossums*, and their bright scarlet flowers have a beautiful effect in contrast with the purity of the Orchids named. These *Nerines* are excellent plants for such positions, and another great orchidist, Baron Schröder of Egham, is equally partial to them for arranging with *Odontoglossums*. One remarkable Orchid was flowering in September—namely, *Stenia fimbriata*, which deserves notice, not for its beauty but for its peculiarity. It is a Columbian species, and was introduced about sixteen years ago. The flowers are small, with a peculiarly fringed lip, and a strange combination of yellow and purple tints with white. Dr. Paterson fancies he has been able to detect in this flower a marked resemblance to the face of Mephistopheles; but his acuteness of observation or of imagination must be greater than my own, for after a careful examination of the flower I have been unable to see any resemblance to the individual named, at least as he is usually depicted. Another noteworthy plant is a remarkably fine variety of *Miltonia Morelliana*, named *atro-rubens*, which is exceedingly dark in colour—the finest I have seen, and good forms of this Orchid are by no means too abundant. As examples of the strong growth of the Fernfield Orchids we have lately received a spike of *Cymbidium giganteum* nearly 2 feet in length, and bearing about two dozen blooms, and a large panicle of *Oncidium varicosum* (?) with three dozen fine flowers. Many others of a similar character could be named to show that the results of the cool and hardy treatment are in every way satisfactory.

Though Orchids are the great feature at Fernfield, there are several other specialities, amongst which the *Rhododendron* may be mentioned, as a good collection is being formed of these plants, and new quarters are being prepared for them. Ornamental Conifers of the *Retinospora* type are also great favourites with Dr. Paterson, who is familiarly acquainted with most of the best collections of trees in the district, particularly those in the gardens at Keir, many of which he has watched in their progress from saplings to giants with the greatest interest. In all respects he is a true lover of gardening, according a hearty welcome all who are similarly interested; and it only remains for me, in concluding these jottings, to express my earnest thanks for his courtesy and hospitality, which served to render my stay in *Bridge of Allan* one of the most pleasant of many agreeable memories of Scotland.—LEWIS CASTLE.

#### NATIONAL AURICULA (SOUTHERN SECTION) CARNATION AND PICOTEE SOCIETIES.

A GENERAL meeting of the above Societies will be held December 9th in the Conservatory of the Royal Horticultural Society, South Kensington, at 1.30 P.M. The principal business will be the consideration of the report of Sub-Committee appointed by resolution of October 14th, for the preparation of rules for the government of the Societies, and the arrangement of the schedules for the exhibitions for 1885.

The following rough draft of the proposed rules for these Societies has been submitted to us:—

I.—That this Society be called the National Carnation and Picotee Society (Southern Section), &c.

II.—The officers of the Society shall consist of President, Vice-President, Treasurer, two Auditors, and one Secretary; the Committee of Management shall consist of twelve members, elected at a general meeting in the month of December in each year, six of whom shall form a quorum for the transaction of business. The several officers, six in number, as specified in this rule, to be *ex officio* members of the Committee.

III.—In the month of December of each year, the date to be fixed by the Committee, a general meeting shall be held for the election of officers and the Committee, receiving the Treasurer's report, the election of Judges for the ensuing year, and such other business as in the opinion of the retiring Committee shall properly pertain to the annual general meeting.

IV.—Any proposal to alter the rules must be made in writing, and signed by two members, and a copy thereof placed in the hands of the Secretary on or before the 10th of November, and such proposal shall be considered at the next annual meeting.

V.—The subscription of members shall be at their own discretion, and the Committee will apportion the tickets agreeably to the rate of the subscription in every case. Exhibitors will be provided with passes on the morning of the exhibition.

VI.—The Treasurer shall give a receipt for all subscriptions on a printed form, and shall sign all cheques for the payment of moneys, and at the general meeting in December shall submit his accounts to the Auditors.

VII.—Committee meetings shall be held within one month previous to the date of the Society's exhibition, and on the date of the annual general meeting, and at such other times as may appear desirable; the Committee alone shall determine the times of meetings other than those provided for by this rule.



VIII.—An exhibitor can win one prize only in one class, except in the classes for seedlings, in which there is no limit, and in single specimens he may not exhibit more than two, but may win two prizes.

IX.—Classes shall be provided in the schedule for amateurs who do not regularly employ a skilled gardener, and for amateurs who have never won a prize at the Society's exhibition.

X.—At the times when the Judges commence their work all persons present, save the officers and their assistants, shall retire from the Exhibition. The decision of the Judges shall be final.

XI.—All plants and flowers shown in the schedule classes must have been the *bona fide* property of the exhibitor or his employer at least two months previous to the date of exhibition.

XII.—Plants and flowers submitted for certificates must be staged separately from collections, in a place allotted by the Committee, and shall be adjudicated upon by the Judges only, save that the Judges may, at their discretion, obtain the assistance of other persons in making their decisions.

XIII.—No person shall be allowed to compete as an amateur who publishes a list of plants for sale, or who advertises them in any form whatever.

#### DEATH OF MR. HENRY FRETTINGHAM.

A FAMILIAR figure and face will henceforth be absent from all future Rose gatherings. On Sunday, the 30th November, Mr. Henry Frettingham of the Rose Nurseries, Beeston, near Nottingham, passed away from earth somewhat suddenly in his sixty-sixth year. His was a notable presence at all Rose shows, specially so of late years, as his bright cheery face, his silvered hair and active robust person made him noticeable even to the least impressed of visitors. He was a dear lover of the Rose, the chief of his powers and means being centred on its cultivation. As an exhibitor he had had a long and a large experience, and had shown side by side with all the veteran growers of the country: with such men as Messrs. Keynes of Salisbury, Cranston of Hereford, Cant of Colchester, Pauls of Cheshunt, and Revs. Hole of Caunton and Pochin of Sibleby. In the exhibition tent he was transparently honest and strictly conscientious, always setting up the best Roses he had, and that in all their natural loveliness, in his best way, and trusting to their excellencies to win. If fortune favoured him he quietly enjoyed his successes; if he lost, he bore his loss with brave uncomplaining patience. He was much in request for miles round his home as a judge, and, no matter what the show, whether a grand one of many exhibitors and many productions, or a small one with few, he never refused if he could at all help it; and, if the show was a small one, with a good object, he would not go empty-handed, but took with him, not for competition, but simply to add to the show's attractions, a box or boxes of his best Roses. He was also a very earnest fruit-grower, particularly so of Apples and Pears. His local knowledge of these, and what sorts were best for the neighbourhood, was extensive and sure, and as he weeded out unhesitatingly every variety which he found not to do well with him, planters of fruit trees, chiefly farmers and cottagers, had learnt to trust his judgment with confidence. As a tradesman he was upright, reasonable, and faithful in all his business transactions. In other and more private relations of life he was most estimable. He was an honour to our gardening profession.—P.

#### POLYGALAS.

ALTHOUGH the order Polygalaceæ is comparatively speaking a large one, the genus Polygala itself seems to be the only one to furnish us with plants capable of associating with alpine plants proper, and even it is confined to but two or three species at the most. In the ordinary flower border a fair success may be obtained, the more so if the soil be naturally stiff and a few stones are placed amongst the roots, as they will then form dwarf evergreen cushions, very pleasing to the eye, and without that stiffness which generally characterises dwarf plants used for permanent edgings. A few stones projecting a little above the ground level will help them greatly, as they seem to have a liking for sheltering under or clinging to the cool side of such projections. But where they are not only most at home but also where they grow most satisfactorily, is on the rockery on partially shaded situations, and on tufa or soft sandstone, especially on the former, to which they cling, rooting into the innumerable small holes all over its surface, creeping slowly but gradually, and gaining a firmer foothold as they proceed. They are easily propagated by cuttings, which strike freely when placed under handlights.

*P. Chamæbuxus* and its varieties are very pretty for rockwork, although common in gardens, are not always appreciated as they should be, considering their value. The type is said to have been cultivated in the Botanic Garden at Oxford as far back as 1658 or 1659, and has probably never been lost since. It has been called Bastard Box and Box-leaved Milkwort, the latter name being a most appropriate one, as it much resembles Box when out of flower, which is indeed seldom; for although its proper flowering season seems to be from May to October, there are always more or less flowers on large clumps. They are produced on short stalks from the base of the uppermost leaves, the true sepal being composed of three whitish leaves; two of the petals, corresponding with the wings of Papilionaceous flowers, are also white, the third petal or keel forms a kind of tube, from which the beautiful bay-coloured stamens protrude. The keel is yellow. A variety with white wings and a red or purple-tipped keel is very handsome, as is also the one with red wings and variegated yellow and purple keel. The variety *purpurea* with red wings and purple keel tipped with yellow is also a favourite. They are all natives of the Swiss Alps and other well-known localities in Europe.

*P. paucifolia* is also a pretty little plant, growing about 6 inches in height, has naked stems, except a tuft of oval leaves at the top, from whence spring the large purple-keeled flowers, which are very showy. It is partial to a peaty soil and shady position. A native of North America, and flowers all summer.—M. S.

#### CHRYSANTHEMUM SHOWS.

DUBLIN.

THIS Show was held on the 20th of November in the Rotunda, and judging by the number of visitors, must have been a success, though the Show was closed by five o'clock, which is too early, for more money is taken after six o'clock than before that hour, especially in a populated neighbourhood. The main feature of the Show was the fruit, especially Apples and Pears. A few exhibits of Grapes were very good, the best coming from the Earl of Wicklow and the Chief Secretary of Ireland. In the classes for Chrysanthemums the cut flowers were the principal feature, Mr. Pymm being first in the class for twenty-four blooms, incurved, with good solid flowers of the most popular varieties. I was surprised to see White Christine shown in this class, of which there were two flowers, and these named Mrs. Pethers, which I have always known as a large Anemone variety. Colonel Bruer was a good second, whose flowers, like most of the others, were past their best. For twelve incurved Mr. Pymm was again first with another flower of White Christine on the board; Lord Langford second. For twenty-four Japanese Lord Langford was well ahead. The other stands contained very small flowers of Anemones and Pompons. The flowers were not very good, and many wrongly named. The six trained specimens do not deserve much praise. The first-prize plants were fairly good. The varieties were Mrs. Dix (a strange variety to me), Mrs. Dixon, Julie Lagravère, George Glenly, and Robert Bruce. The second-prize plants were far the best had they been trained, but were bundles of flower. In the third-prize collection Mrs. G. Glenly was shown as Mrs. Rundle. In another collection Her Majesty was shown as Lady Talfourd, and Habella Booth should have been White Beverley. In this collection white stakes were far too prominent. I must add the Society would do better to confine the plants to single stems. Many or most of the collections were only patches taken from the ground a short time previous to showing. The Committee do not appear to give much assistance to exhibitors, as I saw boards completely stripped of their flowers in some instance, cups included. This would be very unsatisfactory if the flowers were much valued or wanted for other shows, as is often the case in England. I think someone should be made responsible for these things until the time stated for clearing out.—J.

LOUGHBOROUGH.—NOVEMBER 22ND.

THE tenth annual Exhibition of the Loughborough Chrysanthemum and Fruit Society, held at the Town Hall on Saturday, was pronounced by all who witnessed it to be an excellent one, and perhaps the best the Society has yet held. Besides an increase in the number of exhibitors, there was a decided improvement upon former exhibitions both in plants and blooms. The trained plants made a most effective display, and the specimens shown by the Rev. J. Bird (President of the Society) secured from the Judges no fewer than three first awards. In each case second honours went to Mr. F. J. Rowbotham (the Secretary of the Society), who competed for the first time on this occasion, and is to be congratulated upon the marked success he achieved. The premier award for the six untrained specimens went to Mr. J. Spiby (gardener to G. E. Paget, Esq., Sutton Bonnington), who also competed for the first time, and enhanced the beauty of the Exhibition by his choice plants. Pompons were perhaps the least satisfactory department of the Show, though some of the specimens were heavily laden with flowers, and presented a pretty appearance. It is to be regretted that there is not more competition for the prizes offered for the best group of flowering and foliage plants, which again on this occasion only secured a single entry. The Judges, however, had no hesitation in awarding the first prize to the group staged by Mr. Ritchings (gardener to W. B. Paget, Esq.), which consisted of some handsome exotic and other plants, including a number of fine Chrysanthemums, the whole being arranged with judicious skill and good taste. In addition to the prize group another well-arranged and attractive collection of plants was staged as a non-competitive exhibit by Mr. D. Roberts (gardener to Hussey Packe, Esq.), and was highly commended by the Judges. These two, added to a group of Chrysanthemums and Pompons, made a suitable decoration for the centre of the large hall. The Primulas shown on this occasion were more numerous than usual, and were of fairly good quality. Both first prizes went to Mr. J. Smith, nurseryman, Loughborough.

It was in the department for cut flowers, however, that the chief attraction seemed to be contained, and the magnificent specimens of the Chrysanthemum in its numerous varieties well deserved the attention and the encomiums bestowed upon them during the day. Foremost amongst the exhibitors was Mr. J. Landsell, who gained four of the five first awards with blooms which were throughout of excellent quality. That the competition was very keen is clear by the fact that in making their awards the Judges were compelled to divide two of the prizes. One of these divisions was in the class for the eighteen blooms, the first of which was by common assent rightly awarded to Mr. Landsell. For the second award the Judges were obliged, after carefully weighing the merits of the exhibits, to bracket the Rev. J. Bird and Mr. Ritchings as equal. Both lots were remarkably good, and only in a slight degree inferior to the first-prize specimens. The Rev. J. Bird gained four other second prizes, while two other awards went to Mr. Ritchings, who, we believe, entered the lists for the first time this year. Mr. George Perkins, as an amateur, deserves special mention for his success in securing a first award in such company. The Japanese specimens made a good show, and their varied hues and quaint forms were much admired. Taken altogether the exhibition of Chrysanthemums was a most successful one, and one which indicated that there is a much more prosperous and important career still before the Society.

The display of fruit, too, was quite in keeping with the general excellence of the Show. The various classes produced ample competition, while the



quality of the fruit was above the average. The black Grapes shown by Mr. Squires and Dr. Palmer were indeed handsome specimens, and to the uninitiated appeared to be equivalent in merit. The Judges were, however, enabled to detect sufficient superiority to justify them in awarding the first prize to Mr. Squires, who also obtained similar honours for his highly meritorious white Grapes. Apples were without doubt a fine class, and a conspicuous feature was provided in the enormous cooking Apples shown by the Rev. J. Bird. Pears were also a good class, but altogether inferior to the Apples. Several honorary exhibits served to enhance the attractions of the Exhibition, amongst them being the following:—White Grapes by Mr. R. Shaw; Chrysanthemums by Mr. Spiby; Pears by Mr. F. Haynes; Gloxinias (highly commended) by Mr. Ritchings; Apples and Pears by Mr. Wesley.

By whatever standard it was judged, the Exhibition was a success, and from a financial point of view will no doubt materially improve the position of the Society.

#### SOUTH SHIELDS.

THE above Show was held on Tuesday and Wednesday in the Free Library Hall, Ocean Road, South Shields, and was opened at 2 P.M. the first day by the Mayor, S. G. Mabane, Esq. He was supported on the platform by the President, J. T. Eltringham, Esq., Aldermen Redhead, Stainton, and James, and many of the Councillors. The Show in every way was much superior to any previous exhibition the Society has held. The plants were especially good, well trained, and well flowered. The business depression caused the Committee much trouble in getting in the subscriptions this year, but they put forth extra efforts, and although not receiving so much money at the doors as last year they will be able to pay their way, and with better times they hope to make this Show equal to any in the north of England.

For a group of Chrysanthemums and other flowering and fine-foliage plants, Mr. Henry Small, gardener to J. C. Stevenson, Esq., Westall was first with an effective arrangement, in which were some fine Chrysanthemums. Mr. William East, florist, Fowles, South Shields, was second; and Wm. Forsyth, gardener to George Carins, Esq., Monkton Hall, was a good third, and had there been a fourth place Mr. P. Blanshard, gardener to Dr. Gibb, Sandyford Park, deserved it. For six large-flowering Chrysanthemums there were three competitors. Mr. George Corbett, gardener to John Liddell, Esq., Benwell Hall, has generally won the principal prize, and Mr. Blanshard second; but this time it was reversed. The latter's plants were splendid, symmetrical, not too formally trained, and yet every flower shown so well above the foliage. His best plants were Alfred Salter, Bronze Jardin des Plantes, Empress of India, Golden Empress, and Guernsey Nugget. Mr. Geo. Corbett was a close second; and Mr. Thomas Richardson, gardener to George Mays, Esq., Simonside Hall, a good third. For three large-flowering varieties Mr. Corbett and Blanshard were first and second, and Mr. Smailes third. Mr. Corbett was also first for a single specimen, and the same for four Pompons, fine plants of Blonde Beauty, Aimée Ferrière, Beauty, and Cassandra. Mr. Thomas Richardson was a very good second with similar varieties. The same exhibitor was first for two plants and one plant. In the class for Japanese varieties Mr. Corbett followed up his former success, being first, followed closely by Mr. Blanshard; and Mr. Ennis, florist, The Deans, was third. For Anemone-flowered the entries were small, but Mr. Richardson received the first prize. The amateurs—that is, persons who do not keep a gardener—showed very well. Mr. Jos. Dowell, North Shields; Mr. Kennedy and J. Harrison, South Shields, took the remaining positions. They are all working men, and their exhibits were creditable to their skill. In the plants Primulas, Cyclamens, and especially table plants, were well represented and competed for. In the latter there were eleven competitors, Mr. Jenkins, Durham, being first; Mr. T. Rutherford, Durham, second; and Mr. G. Corbett, third.

Cut flowers showed a considerable improvement as compared with those of last year, and formed a striking feature. It is to be hoped that in another year the Society may offer better prizes for cut blooms, and then make the competition equal that with the plants. For twelve incurved blooms Mr. T. B. Morton, Bowden Bridge, Darlington, was first with fine blooms of Alfred Salter, Beverley, Duchess of Roxburgh, Hetty Barker, Queen of England, Lady Hardinge, Lady Slade, Golden Queen of England, and White Globe. Each flower was large and well formed, and attracted much attention. Mr. Fred. Bolton, gardener to Sir H. A. Clavering, Bart., Axwell Park, was second with very fresh flowers, but smaller than those in the first stand; and Mr. Robert Charlton, gardener to T. Heppell, Esq., Birtley, was third. With six incurved blooms the exhibitors were placed the same as for twelve. For twelve reflexed blooms Mr. Morton was again first, followed by Mr. Charlton. The same exhibitor was also first for six reflexed, and Mr. Bolton second. For twelve Japanese blooms Mr. Morton again took first with splendid blooms of Elaine, Baronne de Prailly, Bonle de Neige, Cry Kang, and Comte de Morny; Mr. F. W. Jameson, Queen's Dock, Hull, being second with very good flowers, but smaller than the first. For six Mr. Morton and Mr. Jameson were placed in the same position. For twelve bunches of Pompons Mr. Bollom was first and Mr. Thomas Richardson second. Mr. Charlton showed an excellent stand, but was disqualified for having too many bunches.

Hand bouquets and epergnes were a fine lot, Mr. W. O'Farrell, Sunderland, being first; and Mr. Gorget, the same place, second. For the best epergne, Mr. T. Rutherford, Durham, was first; Mrs. Adams second; and Mr. Mark Hutchinson, florist, Newcastle, third.

Grapes were not numerous, but Mr. Smaile's bunches of Gros Colman well deserved the first honours. The bunches were 3 to 4 lbs. each, large in berry, finely hammered, and well finished. Mr. William Jenkins, Aldin Grange, was second. Mr. Smailes was also first with white Grapes.

The arrangements of the Show were most satisfactory, Mr. Charles Wood and Mr. R. Robson supervising the staging. To guide the Judges Cannell's catalogue is the standard, which gives to exhibitors general satisfaction. After the Exhibition was over, the Committee, along with the President, J. T. Eltringham, Esq., supported by the Mayor, S. G. Mabane, Esq., Alderman Stainton, and Councillor Smith, dined at the Golden Lion Hotel; Mr. Adam Hope, Vice-President, in the vice chair. There was also present Mr. J. Wright, ex-Treasurer. The President proposed the prosperity of the Society in a few well-chosen words, coupled with the name of the Hon.

Secretary, Mr. Bernard Cowan, who briefly replied, and the agreeable proceedings drew to a close.

#### YORK.

THE fourth annual Chrysanthemum Exhibition in connection with the Ancient Order of York Florists was held on the 26th, 27th, and 28th ult. in the Yorkshire Fine Art and Industrial Institution. Each exhibition held by the Society has shown a decided improvement, not only in numbers but in the quality of the exhibits. York has been famous for many years for its summer horticultural exhibitions, deservedly occupying a place in the front rank of similar exhibitions in the United Kingdom. Owing to the energy, foresight, and broad-mindedness of the above-mentioned Society's officials, York is rapidly attaining—if it has not already attained—an equally honourable and prominent position among the Chrysanthemum exhibitions of the country.

The large hall in which the principal portion of the exhibits were displayed is one of the best rooms in the kingdom for such a purpose; long, broad, lofty, and well lighted, with galleries along two sides, and balcony, orchestra, and organ at one end. From various positions in these galleries capital views of the floral arrangements below may be obtained, and the Executive Committee and courteous Secretary, are to be congratulated on the unqualified success achieved in such an important matter. Notwithstanding the immense proportions of this room, it was found to be too small, and consequently the vegetables were exhibited in the south gallery, and the fruit in the north gallery, the central hall being utilised as a corridor, and containing the groups of miscellaneous plants arranged for effect, the outlines being diamond-shaped.

Amongst the exhibits not for competition were splendid examples of incurved, Japanese, and Pompon (cut blooms Chrysanthemums), contributed by Mr. Morton, Mowden Bridge Nursery, Darlington; these were massive, clean, and fresh, and by far the best specimen blooms in the Exhibition. Messrs. H. Cannell & Sons of Swanley, Kent, contributed a brilliant display of double and single Zonal Pelargoniums.

The first prize for group of plants arranged for effect was easily won by Messrs. Simpson & Sons, of Heworth, with an excellent group; the second prize was awarded to Mr. T. H. Hingston of Clifton; the third to Dr. Baker, and fourth to Mr. J. Buckle of Monkgate. The silver cup offered for the best group of Chrysanthemums arranged for effect was won by the Lord Mayor of York with an admirable group; Mrs. Gutch, of Holgate Lodge, being a good second; Messrs. Hingston and Baker being third and fourth respectively. In the class for twelve specimens, large-flowering Chrysanthemums, distinct, the first prize was won by Mr. T. Smith with a capital lot of bright, clean, and healthy plants bearing good flowers; Miss Steward of Bishopthorpe being very close with well-flowered and dwarfier plants, a few points only dividing the first and second; the third prize being awarded to Mr. Hingston, and fourth to Dr. Baker. In the class for six Japanese Mr. Smith was again to the front, Miss Steward second, and Dr. Baker third. In the cut-flower classes the principal winners were Mrs. T. H. Cook, Hall Croft, Mirfield; D. Wilson, Esq., Alderman Richardson, R. F. Jameson, Esq., Hull, and A. Pease, Esq., M.P.

In the fruit department Apples were in strong force, the most meritorious coming from Hereford. Pears were well represented, and some good Grapes were shown, two bunches of Gros Colman being particularly fine. With black Grapes Messrs. G. H. Shaw, Howden; G. Bateson, Yarborough; and F. B. Frank were the prizetakers. For white Grapes Messrs. G. H. Shaw, F. B. Frank, and Alderman Melrose took the lead. For a collection of Apples Messrs. J. Watkins, Pomona Farm, Hereford; J. T. Hingston, and D. Wilson were the prizetakers. The best baking Apples were shown by Mr. G. J. Hutchinson and Lord Wenlock; and the best dessert Apples by Messrs. T. M. Weddall and G. M. Hutchinson.

Vegetables were very fine, the entries being very numerous and the competition keen. The prizetakers were A. Pease, Esq., M.P., A. J. Cholmley, Esq., and Mr. R. H. Bower, Welham Hall.—J. U.S.

#### NEWPORT, MONMOUTHSHIRE.—NOVEMBER 27TH

THIS was the first Chrysanthemum or autumn Show of the Newport Horticultural Society, and as an Exhibition it proved an encouraging success. Of late years no Horticultural Society in the west of England or South Wales has evinced more enterprise than this one, and the introduction of a good autumn show is a step in the right direction, as hitherto a show of the kind could not be seen nearer than Bristol. The Society enjoys the patronage of the leading residents of the district, and is favoured with the aid of two courteous and energetic Secretaries and a good Committee, amongst which there are some able gardeners and amateurs, and we hope the Show under notice will be the forerunner of many good exhibitions. First shows as a rule are not well filled, as exhibitors cannot tell what to do or what to expect in competition; but this feeling was in no way visible at Newport, as the exhibits were numerous and very meritorious. The Albert Hall was the place selected for the Show, and it is well adapted for such displays. The plants in pots were arranged all round with the stove plants, the cut blooms and fruit being on the centre tables, and the effect, especially in the evening and looking down from the balconies, was extremely pleasing.

In the first class for six varieties of Chrysanthemums, large-flowering, distinct, Mr. H. J. Davies was first with well-flowered plants of George Glenny, Mrs. G. Rundel, Julie Lagravère, Princess Teck, Guernsey Nugget, and Baron Beust. The next position was taken by Mrs. Cartwright's gardener with smaller plants. In the class for four Japanese, distinct, Mr. Davies was again first with capital plants of Hiver Fleuri, Sultan, Fair Maid of Guernsey, and Thunberg. Mrs. Cartwright was second with rather too formal tied plants, and Mr. Fothergill third with a fine Marquis of Lorne and Fair Maid of Guernsey; but James Salter was past its best, and White Dragon not fully in bloom. Pompons were the poorest; but the standard-trained plants were excellent, Mr. W. Graham winning first with Golden Thread, Miss Mary Morgan, Angèle, Mastic, Fair Maid of Guernsey, and King of the Crimson. The heads were 2 feet in diameter and beautifully flowered. The second-prize plants from Mrs. Cartwright were smaller. In the class for four plants, distinct, but no restriction as to form, Mr. Davies, Mrs. Cartwright, and Mr. Fothergill were the prizetakers with very showy specimens, Mr. Brunlees, Julie Lagravère, George Glenny, and Hereward being the best sorts. The third-prize collection contained one especially



good plant of Barbara. For a single specimen Mr. W. Graham was first with a splendid plant of Chinaman, and Mr. Fothergill second with a fresh Jardin des Plantes.

Cut blooms were well represented, some wonderful large specimens being staged. The first-prize twelve came from Mr. Baylis, Winterburn, Bristol; Mr. Davies was second, and Mr. Stallybass, Cardiff, third. In the smaller class of six blooms the Bristol blooms were behind, Mr. Davies taking the first prize and Mr. T. Colborne second.

In the class open to amateurs who do not employ a regular gardener, Mr. Pickford, Newport, who is an active member of the Committee, was first with a very creditable group, as were also the second-prize collection from Mr. J. R. Stone. A splendidly grown collection was sent in, not for competition, by Mr. Wattie, gardener to T. Cardes, Esq., Bryn Glas. Some of these were pyramids, others standards, low-trained and spreading, and all of them were remarkably good in foliage, bloom, and general condition. The Mayor of Newport also sent a good collection, and Mr. Dick of the Clarence Nurseries had a fine exhibit. Stove and greenhouse plants were very attractive, the best coming from Mrs. Cartwright and Mr. E. Watson. Poinsettias were bright and attractive from the same exhibitors, and the Primulas were large bushy plants with good blooms.

The prizes offered for the best arranged vase of flowers brought out some charming arrangements, the first prize going to Mr. Ellis, Cardiff, and the second to Mr. W. Jones, Maindee. In the class for gentlemen's buttonhole flowers the competition was keen, Mr. Ellis being first and Mr. H. Jones second, the latter having a very fine bud of Niphetos Rose in each of them, rather large, but good. In the hand bouquet class Mr. Ellis was first and Mr. H. Jones second, and there were several good ones which were not included in the prize list.

Fruit was good, Mr. Hawkins, gardener to Col. Turberville, Ewenny Abbey, Bridgend, being the most successful competitor, as he secured first for collection of fruit, first for white and black Grapes, and first for Apples and Pears with excellent produce. In most of these classes Mr. T. E. Watson followed closely. Amongst the vegetables from both gardeners and cottagers we were pleased to observe many fine exhibits, Mr. Fothergill being first in the large collection with fine Parsnips, Tomatoes, Cauliflowers, Potatoes, Onions, and Turnips. The cottagers' prizes offered by E. H. Carbutt, Esq., M.P. for Newport, for fruit and vegetables were awarded to Mr. Wanson, Risca, and Mr. W. B. Nicholl.

## THE PARKS AND GARDENS OF LONDON AND PARIS

THE Parc Monceau and the gardens of the Buttes Chaumont are situated at the two extremes of the city of Paris, the former in the aristocratic quarter of the Champs Elysées close to the beautiful Russian church, and the other far away in the quarter where the working classes dwell, and where formerly there were immense quarries where deeds of violence have been committed, and where for generations thieves and desperadoes found in its caverns and deserted quarry holes safe retreats from the arm of the law. Wide as they are apart, they differ no less in the characteristics of the style of gardens into which they have been converted, and are both of them quite unlike anything we have in London.

The Parc Monceau formed part of the property of the Orleans family, and when Napoleon III. laid his hands on it he tried to satisfy his conscience and stop the mouths of his critics by making this garden a present to the city of Paris and laying it out as a public garden, much on the same principle as the man who stole a sheep and gave the head to the poor to make broth! The consequence is that it is the only park in Paris that has really good forest trees in it. It did not afford, either, a strategical point in the many revolutions Paris has witnessed, and consequently—unlike the trees on the boulevards, which have more than once been cut down and utilised for barricades—they have remained untouched. It is not large, but there is more refinement in its arrangement than in any other of the Paris parks; but let it not be imagined all is in good taste. The French must have little kiosks and bridges and bits of water (oftentimes not the sweetest in the world); but, withal, the landscape gardening here is very good, and the shade was delightful even in the hot weather we experienced in September, and how much more in the broiling days of July and August.

The Parc des Buttes Chaumont is of an entirely different character. Here we have high cliffs overgrown with Ivy, over which a cascade falls. A good-sized piece of water, out of which bold cliffs stand show up; streams which seem to run naturally down; long stretches of upland lawns from which fine views of the fair city may be obtained. If we could imagine Primrose Hill to be a rocky eminence instead of what it is, and that skill and taste were displayed in its laying out, we might form some idea of what this Parc is. The great rocks, with their beautiful drooping curtains of Ivy form a very characteristic feature of this unique public garden, in which, however, there are many violations of taste—buildings which are of very little use and certainly no ornament, restaurants where you pay for things about twice as much as in Paris, and that amazing number of walks which the French ever seem to delight in form sad blemishes in what might be the most beautiful public park in Europe, and which with all these drawbacks is certainly unique.

Before leaving this part of my subject I cannot forbear mentioning a garden which, although attached to a public institution, is a private one. I mean the garden of the Hertford Hospital, a wonderful institution built and endowed by the munificence of Sir Richard Wallace. It was desired to make a garden for the convalescent of the hospital, but that in ordinary circumstances would be a matter of years; but money and skill can do a good deal now-a-days, and when I saw the garden which five years before had been simply a piece of ground covered with rough grass, now a delightful, cool, and shady spot with umbrageous trees—the very picture of what a convalescent garden should be. It was planted in spring, 1879; and it is well known—too well known, indeed in France—what an awful

winter followed that terribly wet season. The trees, which consisted of Chestnuts, Poplars, Ash, Firs, Planes, and Acacias, were when planted 20 to 25 feet in height, while small shrubs—Box, Laurel, Syringa, Junipers, &c.—filled up the spaces. Very few trees perished in that winter, and now nothing, as I have said, can be more delightful. I have known of individual trees being transplanted, but I do not recollect any other case of a whole garden being thus planted. It was done by Mons. Simiur of Auteuil.

It will hardly be necessary for me to describe the parks of our great metropolis; but I would ask anybody to lay out before them the two maps of London and Paris, take the large space occupied by Hyde Park, Kensington Gardens, St. James's Park, and the Green Park, &c., the very heart of London, and say where in Paris can you meet with anything like it? You may without exaggeration walk for a couple of miles from the entrance to Kensington Gardens to Whitehall on the grass, only crossing the road once; you may sit under the shade of stately trees, which you in vain look for in Paris; you have a beautiful sward, in which we certainly can excel them. Then, again, we have the fine area of the Regent's Park; we have Battersea Park, with its beautiful subtropical gardening equal to anything in the French capital; Victoria Park, where the east-enders can enjoy the delights of flowers and greenery; Finsbury Park, &c. Nor must we omit the Thames Embankment, than which no more beautiful riverside exists in Europe. Alas, that it should be disfigured by those hideous telescopic railway bridges!

If there is one place more than another that calls for reform in our London spaces it is the squares, of which many of them might be made very pleasant places of recreation for the public, instead of being exclusively shut up for those who live around them. Many of them contain grand trees, and a clever landscape gardener might do a good deal with them. I do not admire the finicking manner in which such places as the Square Montholon are laid out, but a little effect of artistic arrangement might be adopted.

Great fault has been found by some with the formal manner in which our parks are laid out, and hints have been thrown out as to the substitution of a more natural style and the introduction of hardy instead of half-hardy plants. I differ from this. I do not like bedding-out in private gardens of small size, and am glad that the taste for herbaceous plants is fast driving the system out; but it is quite another thing in our public parks. There the rich blaze of colour well harmonised, as it generally is now-a-days, seen day after day, not by the same people but by the ever-changing multitudes who throng our great metropolis, seem to me to adapt it very well for the purpose. The almost level surface of the parks does not afford much facility for the landscape gardener, and we must rather depend for effect on the fine foliage they contain—a point in which they stand far and away ahead of their French rivals.

My object in drawing attention to this matter is rather to discountenance the idea that they "do these things better in France." The French style of gardening, with its formality, its innumerable walks, its little bits of waterfalls and streams, is not, I think, to be compared to the bolder style of some of our best English gardeners. I would put Mr. Marnock's work against any French landscape gardener whose work I have seen, and if improvement goes on as it has done we shall still keep far ahead of them. In neatness and doll's-house-like arrangements they surpass us, but in breadth of design and boldness of execution I think we carry off the palm.—D., Deal.

## CHRYSANTHEMUM SHOW FOR THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.

MANY expedients have been resorted to during the last three years to raise money for the Gardeners' Royal Benevolent Institution for the purpose of permanently increasing the pensions granted by that Society. Since Mr. Cutler's latest appeal to gardeners, the quiet little town of Cuckfield has been the scene of a not unsuccessful effort to help on the good work. At a meeting of the gardeners in the neighbourhood it was decided to hold a Chrysanthemum and Fruit Show, and, considering that the date fixed (19th and 20th of November) left them a day short of a fortnight to advertise and arrange all details, they are to be congratulated on the display of flowers and fruit brought so hastily together, the undoubted appreciation of those who visited the Show, and on the financial result of their gratuitous labours. At the preliminary meeting the Rev. F. J. Mount, vicar, presiding, amongst some eighteen gardeners present, seven volunteered to stage groups of Chrysanthemums and other plants, while others promised to send fruit, &c. The following gentlemen kindly sent groups of plants:—H. Woodcock, Esq. (J. Umpleby, gardener), Rev. F. J. Mount (C. Thomsett, gardener), E. Waugh, Esq. (G. Ropley, gardener), R. A. Bevan, Esq. (G. Stringer, gardener), T. T. C. Lister, Esq. (R. Inglis, gardener), Mrs. Maherty (J. Mitchell, gardener), W. Payne, Esq. (T. Burtenshaw, gardener). The groups were arranged in semicircular form on each side of the Drill Hall. They were made up of well-grown useful plants, displaying a good variety of colours, and they looked bright and cheerful, especially when lighted up in the evening. Mr. Stringer's group was the most imposing. It included about forty varieties of Chrysanthemums, and amongst a variety of other plants used to margin the groups there were some excellent blossoms that would have done credit to any exhibition table. Mr. Umpleby's groups consisted of Chrysanthemums only, some fifty varieties. His superior sized blooms showed the effect of his judicious disbudding, and the clear healthy foliage down to the pots made it evident that in good hands a group of Chrysanthemums can be presented to public gaze, without putting them in "petticoats." Messrs. Balchin, nurserymen, Hassocks, sent a choice lot of plants for sale, half the proceeds of which was given to the funds of the Gardeners' Royal Benevolent Institution.

Mr. Hills, gardener, and Mrs. H. Huth, Wykehurst, Bolney, had a fine col-



lection of thirty-six dishes of Apples and Pears, which would have been more interesting if they had been named. Mr. Stringer showed a very interesting collection of twenty dishes of Apples and Pears correctly named, and all of fine quality. Perhaps the most striking exhibit of fruit was that shown by Mr. J. Harding, gardener to B. B. Hodgson, Esq., Highlands, Bolney, consisting of eight dishes of Pears and the same number of Apples, all of extraordinary size and brilliant colour. Mr. J. Mitchell, gardener to Mrs. Maberly; R. Hudson, gardener to Major Sergison; Mr. Parsons, gardener to Miss Margison; and J. Lingley, gardener to T. W. Best, Esq., also contributed to the display of fruits.

It is but right to mention that the scheme was first suggested by Mr. Stringer, gardener to R. A. Bevan, Esq., Horsgate, and much of the success attending the Show is due to his untiring energy and perseverance. Much credit is also due to Mr. J. Tugwell, who, not being a gardener, acted as Hon. Secretary. After all expenses are paid it is hoped that from £10 to £12 will be sent to Mr. Cutler for the Gardeners' Royal Benevolent Institution.—R. I.

#### TUPA FEUILLEI (LOBELIA TUPA).

A VREY distinct plant is the peculiar Tupa Feuillei, and when growing vigorously, as it does in a few favoured districts, it is also very handsome. It requires, however, a rather warm and sheltered position, and even then



Fig. 87.—Tupa Feuillei.

needs careful protection in the winter, and some, to make it perfectly safe place it in a greenhouse at that time of year. In Ireland it succeeds well, especially in the Dublin Botanic Gardens, where it has frequently attracted the attention of visitors.

Under cultivation this plant attains a height of 4 or 5 feet, in exceptional cases even exceeding that, but it is often seen not more than 3 feet high. Its flowers, which are bright red, with the apex of the corolla strongly recurved, are produced on the upper portion of the stem from the axils of the leaves, and form a dense spike. It is a late-flowering plant, being frequently at its best in September, or even in October. The woodcut, fig. 87, shows the upper portion of a stem greatly reduced.

This Tupa is a native of South America, and has been found by several botanists at various times. It was found by Father Feuillée early in the eighteenth century, and is thus noticed by him in his journal:—

"All this plant is a most ready poison; its root yieldeth a deadly milk, as also doth its stem; the odour of its flowers produceth cruel sickness. When one handleth them, care must be had not to bruise them between the fingers; for if one thereafter rubbeth his eyes, some of the milk having touched them, a man will surely lose his sight, as hath been

remarked by experience. I found this plant on the mountains of the kingdom of Chily, as high as 37° of south latitude."

#### MARSTON HOUSE, FROME.

PICTURESQUELY situated in a broad and effectively wooded valley within two miles of Frome is Marston House, the commodious residence of the Earl of Cork. It is an oblong building, having a lofty conservatory adjoining the west end and communicating with the interior through the spacious ball-room, and the lemon scent of a luxuriant and floriferous Magnolia grandiflora, about 40 feet high, and secured to the wall (south front) close by, perfumes the air. The view from the south-front terrace, whence the velvety lawn runs with a sharp declivity towards the park, is a delightful one; but more delightful still, and varied, too, is that which is obtained from the top of the series of terraces ascending to the grounds in the direction of the flower garden at the rear of the house. Glancing downwards from this elevated position, several neat slopes and flights of stone steps leading thereto are seen, and the well-filled vases bright with a variety of colours on each side. In the near distance are the home woods with the 30-acre lake showing between, and east and southward, thence the finely timbered parks of Longleat and Badminton, the seats respectively of the Marquis of Bath and the Duke of Beaufort.

The grounds and park are charmingly undulated and wooded with lofty Pines, majestic Oaks, spreading Beech, Yew, Portugal Laurel, &c. The most noticeable of these, not so much on account of its great spread of luxuriant branches and massive trunk as by reason of the peculiar formation and character of the latter, is a fine specimen of the English Yew. Many years since a series of suckers would appear to have sprung up from the base of the tree all around it in the most regular manner imaginable, and at about an equal height from the ground have effected a perfect union with the horizontal branches as well as with one another in their growth upwards. The fusion of the perpendicular as well as the horizontal branches impart to the trunk thus formed the appearance of a large fluted column. This very interesting tree stands at the bottom of the well-kept lawn opposite the south front of the mansion. Before leaving the ground I may remark that banks and underwood of the common Laurel, which we cut over two or three times a year with a knife at about 3½ feet from the ground, presents one even surface of this hardy evergreen, and forms a noteworthy feature of the place, and at the same time a capital cover for game.

The flower garden occupies a high but sheltered situation at the rear of the house, and, being large, it requires a good number of foliage and flowering plants to furnish the numerous beds which it contains. Plants of the old *Perilla nankinensis*, *Ricinus* in variety, and other plants of like foliage and habit of growth when contrasted with the masses of scarlet, white pink, blue, purple, and other shades of colour which have been tastefully arranged, are very effective, especially so when viewed from the interior of the flowery bower close by. This effect just now (the middle of October) is heightened by the leaves of the various trees. In addition to this flower garden there are some effective "carpet beds" on the green sward in front of the conservatory.

The kitchen gardens, in which the plant (except the conservatory) and fruit houses are situated, are very hilly, average size, and well stocked with a good selection of admirably grown winter vegetables and fruit trees, among the former being fine breadths of Veitch's Autumn Giant Cauliflower, Brussels Sprouts, Winter Greens, Celery, &c., including a good border of beautifully curled Parsley, evidently a first-rate and well-selected strain; and a short distance off, climbing up a 12 feet wall, are some plants of a hybrid Bean, the result of a cross between Osborne's Forcing and the Champion Runner Bean, and which promises to supersede in quality and quantity the produce of both its parents. But I must not anticipate coming events by saying any more respecting this "new comer," further than remarking that it is in good hands, and that there is a good batch and variety of Chrysanthemums and other winter-flowering plants close by.

The glass houses consist of several plant and fruit houses, hot-water pits as well as cold ones, and frames. The conservatory was gay with a variety of foliage and flowering plants. Of the latter large and grandly flowered plants (about 12 feet high) of pink, white, and scarlet Pelargoniums neatly trained up the division wall of the house and mansion deserve passing notice, as also do the plants of *Plumbago capensis*, which furnish the pillars so effectively, and the flowering shoots of *Tacsonia exoniensis*, which, depending gracefully from the roof, gives elegance and finish to the house. In one of the greenhouses I noticed a well-grown and finely flowered batch of tuberous-rooted Begonias, both doubles and singles being well represented. Among the latter varieties Dr. Masters was conspicuous as much on account of its immense spikes of flowers and free-flowering disposition as by reason of the great size, form, substance, and colour (dark red crimson) of its flowers. This is one of the very best of Messrs. John Laing & Co.'s many excellent varieties of this fast-gaining-favour species of Begonias. White double Primulas on shelves near the glass, winter-flowering Pelargoniums (a houseful), *Calanthes Veitchii* and another variety of this useful Orchid, with flower spikes as thick as a man's thumb proceeding freely from the pseudo-bulbs, *Poinsettias*, *Cypripediums*, and perpetual-flowering Carnations, are also grown largely and well at Marston. In addition to the plants enumerated above there is an ordinary collection of stove and greenhouse plants, which include some good Ferns, Dracenas, and Crotons of a decorative character, and Gardenias luxuriating in a hot-water pit, and Tea Roses in a raised pit (see page 324 of this Journal) in one of the forcing houses deserve a passing reference.



Several fruit houses—viz., vineries and Peach houses—are being cleansed, the borders seen to, and the trees pruned, &c., in readiness for being forced later on. In the late vinery I noticed some admirably finished bunches of Black Alicante and Mrs. Pearson Grapes, and in another house close by the last of a good Melon crop—fine fruits of Hero of Lockinge.

In concluding the foregoing remarks, which are merely a synopsis of the place, and written entirely from memory, I need only say that Mr. William Iggulden presides over the gardens and grounds at Marston with credit to himself and satisfaction to his employer, and that he there practises, so far as circumstances permit, that which he has from time to time so lucidly described in the pages of the *Journal of Horticulture*.—H. W. WARD.

### RETURNING CHRYSANTHEMUM BLOOMS.

"F. H. G.," on page 462, recommends Mr. J. Freeman to give away his blooms after exhibition, and asks, Why want them back?

The question of returning cut flowers after exhibitions are over is to be looked at in more ways than one. I grant with "F. H. G." that it is a great—I had almost written the greatest—pleasure to give away the blooms after exhibition, but certainly there are limits to this. Let me just note a few positions. "F. H. G." alludes to Roses. All Hybrid Perpetual Roses would be useless to an exhibitor after standing the test of a few hours' exhibition. Not so some of the Teas; these stay better than their relatives, and have before now lived to fight and win at other exhibitions. Hence it appears to me that unless leave has been given to the secretary to give away the blooms they should be returned. Should the exhibitor be present in person, by all means I recommend him to give away all Hybrid Perpetuals; their brilliancy and beauty will be gone, and only the wreck of past greatness is to be seen on the following day. They will be cared for by the recipients far more than by the owners, who like to view their favourite flower in the first blush of beauty; but there may be Teas that the exhibitor might desire to retain in hope of again exhibiting, and without the permission to give I think they are better reserved. Far be it from me to encourage a niggardly spirit in giving flowers. In my own case I daily cut all blooms of the Rose (with rare exceptions) and, reserving a few, send out to others less fortunately situated a basket of what a recipient once called "lumps of delight." Yet I can believe that in the matter of some flowers the practice of secretarial giving should not be carried out.

The question has cropped up *apropos* of Chrysanthemums. I have no great experience of them, but I judge that they are far more staying than Roses, and that many of the blooms exhibited to-day might with success present themselves in competition to-morrow. Never having exhibited them I cannot say, but if I am right it is possible that the exhibitor might find himself beaten the following day by some of his own flowers! Unfortunately, as I know all the askers for blooms are not "modest young men and maidens" ignorant of flowers, but are occasionally keenly alive to personal advantages—to wit, the possibilities of re-exhibition, or in the case of Rose blooms the possible buds that may be obtained.

Take another flower, the Aster. This, certainly in the case of German Asters, is capable with careful treatment of enduring two or more exhibitions. Further, if a German Aster be thoroughly opened it will perfect its seed after exhibition if properly attended to. Hence if such blooms were given away an irreparable loss might be inflicted on the owner.

I think I have written enough to show that giving away the blooms after exhibition should never be done by the secretary except by permission of the owner, and as I have written, perhaps, somewhat egotistically, which I could hardly avoid, let me subscribe myself on this occasion as—A LOVER OF FLOWERS.

### CHILWELL NURSERIES.

LIKE many others interested in Chrysanthemums I was last week induced to pay a visit to the old-established nurseries of Messrs. J. R. Pearson & Sons, at Chilwell, near Nottingham, and there found a bright and beautiful display of that autumnal flower, nearly every shade of colour being represented in the many striking and valuable varieties grown, upwards of one thousand plants being tastefully arranged in one of the large span-roofed plant houses, which was indeed well worth seeing. Exceptionally good were many of the Japanese varieties, Source d'Or being very noticeable. Amongst the Pompons Model of Perfection and Snowdrop may be specially mentioned as being well grown and flowered. These are two charming varieties for affording plenty of flowers for cutting, as well as being exceedingly light and effective for grouping. In the incurved section all the leading varieties are grown, and many fine examples of good culture were noticeable. Another interesting feature in connection with this establishment at the present time is a long lean-to house (100 feet in length) filled with flowering Pelargoniums, which as regards profusion and high colour of flowers surpass anything of the kind I have ever seen, even at midsummer. They consist of what is known as the Chilwell strain, having nearly all been raised there. The trusses of many of them are nearly as large as the crown of a man's hat, and many of the individual blooms show a considerable margin when placed under a half-crown piece. The plants, though not arranged very closely together, are wholly concealed beneath the mass of blooms, and when viewed from one end of the house to the other there is nothing approaching sameness; the colours are so artistically blended that the most capricious as regards such matters would have pronounced the display faultless. No such

variety of colours could be found in any other class of plants, either in or out of doors, at this season of the year. White, red, pink, lilac, rose, rosy-red, scarlet, light and dark crimson, magenta salmon, and purple crimson are only a few of the shades which might be enumerated. Such a display as that indoors at Chilwell would quite compensate anyone for any trouble taken to produce it. Many of the new varieties yet to be sent out are superior to any of the varieties distributed. A large number of unnamed seedlings are prominent in this splendid collection. I cannot refrain from saying a word upon the splendid Dendrobiums which are to be found. They consist of Dendrobium crassinode, D. Wardianum, D. Devonianum, &c., all remarkably well grown in small shallow pans. The pseudo-bulbs are of large size, and being thoroughly ripened, owing to their being suspended close to the glass, and promise to produce flower spikes from every joint. Odontoglossums, Eucharis amazonica, Eucharis candida, and Eucharis Sanderi are well grown, as are also Gardenias.—J. H. WALKER.



### KITCHEN GARDEN.

WORK in the vegetable garden is not now very pressing, and where there is much to be done elsewhere, such as in the pleasure grounds, where cutting and planting may have to be done, the kitchen garden hands may be employed without interfering with the work here.

*New Ground.*—Where new vegetable gardens have to be formed or additional portions taken in, now is the time to push on with such work. Old corners which may have been neglected and become overgrown with weeds should have the surface grubbed up, burned, and then trenched to the depth of 2 feet or more. Such ground as this never fails to produce good vegetables for a number of years. All alterations in the existing quarters should be proceeded with, such as throwing two small pieces into one, shifting a pathway from one place to another, and the walks should also be attended to. No kitchen garden walk should be narrower than 6 feet, but it is no advantage to have them much wider than this for practical purposes. Where they have been much used during the summer they may have become quite flat in the centre, and when wet it may be difficult to find a dry place to walk on, and in such cases the centre should be raised from 4 inches to 6 inches higher than the sides. A good mode of doing this is to pick the whole surface of the walk up, throw the good surface material to each side, then round up the middle with rough clinkers, broken bricks, or stones, and put the surface material back again. We do not like walks with sharp ridges along the centre, but prefer them rounded for comfortable walking. Stone edgings or tiles, which may require putting straight, should have attention before the path is done. Where the edgings are of wood renew decayed parts, and Box should be taken up and relaid if it has attained any great size. Of all edgings in a vegetable garden none harbour the slugs so much as Box, and the larger it is the better it is for them, but when kept in narrow and dwarf lines the evil is not so great.

*Burning Refuse.*—This is a portion of our December work, as the ashes are so useful for many vegetables in the early spring. Prunings are carefully collected for the purpose, and so are all the old vegetable stems which will not decay for manure, and besides these there are always quantities of refuse which can be disposed of by burning better than in any other way. When a fire has once been set going a few barrowloads of soil or clay put round or over it will become charred and make a most valuable addition to the ashes. Indeed, a mixture of this kind is often as beneficial as some of the artificial manures.

*Protection.*—Protecting material must now be at hand to place over all half-tender vegetables, but it is much better to take it off or on as the weather may dictate than have permanent protection. The hardier all vegetables can be kept the better if they have to be preserved until well into spring.

*Lettuce, Endive, and Cauliflowers.*—These and other plants in frames should have the lights taken off on fine days and be well ventilated all night when there is no frost. Where any of the plants show a disposition to damp off put some sharp dry ashes around the stems. When mats are placed over the glass at night do not allow the coverings to remain on far into the day or put them on before it is becoming dark at night, as the days are so very short now and the nights so long that to increase the time of darkness by covering when it is not wanted will make the plants tender.

*Forcing Vegetables.*—This will now be general, and good batches of Rhubarb, Seakale, and Asparagus should be put into heat at once if the produce is desired by the end of the month. The best modes of forcing have been so often detailed in these pages that we will not enter fully into the matter here, but wherever good roots can be used it will be found that one and all can be forced freely, and will prove very remunerative. So far we have found roots force wonderfully well this autumn, and this we are inclined to attribute to their being so thoroughly matured. Kidney Beans are now almost at a standstill, and we do not look upon them as a profitable crop this month.

*Tomatoes.*—Where no young plants were propagated from cuttings and early ones are wanted a pinch of seed should be sown now. Fill a dozen



or more 2-inch pots with a light sandy mixture, put two or three seeds into each, and then place them in a temperature of 65° or 70°, when the young plants will soon appear. They should then be kept in a moist warm atmosphere near the glass, and they will be useful plants early in the year.

**Broad Beans.**—Where these are valued very early in the season a quantity may be sown now. They require a rich soil, and if kept from the mice they will be ready for use some weeks earlier than any which can be sown in spring. We always sow a few rows now in a warm border and find them very useful. Digging, trenching, and manure-wheeling are operations which may always be proceeded with at this season.

#### FRUIT FORCING.

**PINES.**—During the next two months it is likely the weather will be sunless, with cold nights, which is not at all favourable to the advancement of vegetation; yet in the cultivation of Pines rapid progress at this time of year is not advisable. It is better to rest contented with a slow rate of progress being made in a steady uninterrupted manner, hence the temperature should be lowered to its minimum in each department, which for the fruiting house will range at 65° to 70°; successional houses 60° to 65°; and for suckers 55° to 60°, allowing a rise of 5° to 10° from sun heat. The atmosphere in the house containing the fruiting plants will, in order to make the best of the fruit, require to be of an invigorating nature, and will need constant attention in sprinkling the pathways and moistening other surfaces in the house as they become dry, and in proportion to the fire heat the syringing must be regulated. In light airy houses the plants will need to be lightly syringed at least once, if not twice, every day. This may be safely done so long as the axils of the leaves are not surcharged to an extent that will affect the state of the soil around the collar of the plants. Examine the plants by hand at intervals of not less than a week, and give tepid liquid manure abundantly to those plants only which require it. Plants in fermenting beds do not as a rule require nearly so much water as those subjected to the heat which arises from hot-water pipes; but, notwithstanding, the plants must be looked over at least once a week. In successional houses and pits where less heat is applied, a moderate and equable state of moisture should abound, and no more fire heat be employed than is indispensable, which coverings at night will in a great measure dispense with, and therefore these should be employed whenever practicable. See that the plants have the full benefit of light in every division by keeping the glass clean.

**VINES.—Early House.**—When the buds in the house that was closed last month show signs of swelling the inside borders should receive another watering, with water only in the case of vigorous young Vines, and liquid when they are old and require stimulating. This should be applied at a temperature of 80° to 90°, and if not already done some good fermenting leaves and short stable manure laid in heaps or ridges on the borders will help the surface roots, and give off warmth and genial moisture to the atmosphere, reducing the necessity for hard firing and incessant syringing. Young Vines that have not been forced early will require bending down to a horizontal position to insure an even break down to the base; but old Vines that have been some years at work may be tied to the trellis immediately they are pruned, and will usually break freely.

**Early Pot Vines.**—Pay attention to fermenting material in pits, which if every pot is placed on a solid pedestal built from the bottom of pit will admit of frequent additions being made as the heat declines, the whole mass being turned over without displacing them, and root-action will be steadier and less liable to a check when the pots are only partially surrounded by the plunging manure. Afford tepid liquid manure whenever moisture is needed, and cease syringing the Vines after the bunches show, when the final disbudding should be made, leaving the most promising, with a surplus for contingencies, which, however, should be nipped off before the flowering. Stop the growth a couple of joints beyond the show of fruit, laterals below the bunch at the first leaf, and those beyond may be allowed to extend as far as it can be done without crowding the principal foliage. Keep the temperature at 65° to 70° by day, 5° to 10° more from sun heat, and 60° to 65° at night, damping available surfaces two or three times a day.

**Succession Houses.**—Take advantage of unfavourable weather for outside work to get Vines pruned, always bearing in mind that early pruning conduces to a strong and even break when the time arrives for forcing. In dressing the Vines do not remove more than the loose bark, and wash with soap and water in preference to a composition which leaves a thick deposit. Thoroughly cleanse the glass with water, the woodwork with soap and water, and the walls with limewash. Remove the loose surface soil, and give fresh material—lumpy loam, with a little charred refuse and bonemeal.

**Late Houses.**—The attention of growers has frequently been directed to the importance of starting the Vines and helping them forward with fire heat in the spring, as being safer and more economical than trusting to sun heat during the early part of the season, and having to fire hard through the autumn to get the wood and fruit ripe or apparently so by the end of November. In fine hot seasons like the past it may answer very well, but in a cold wet season the Vines hold the foliage until it is displaced or liberated by a rapid depression of temperature. This sudden check is not ripening, and the chances are that the Grapes, particularly of such varieties as Lady Downe's and Mrs. Pince, do not retain their colour and freshness until the time arrives for cutting in January, and when Grapes begin to shrivel on the Vines it is useless trying to keep them in the Grape room until May. This is given for the benefit of those

who have not hitherto made a start sufficiently early to insure a satisfactory result in autumn. All Grapes intended for keeping fresh and plump for some months after they are cut should now be hanging on leafless Vines that had completed their season's growth, and ripening by the end of October. Where Vines are now in this condition the Grapes will keep satisfactorily with the temperature falling as low as 40° to 45°, with just sufficient fire heat to dispel damp and to protect them from frost; but fire heat after the leaves fall must be sparingly applied, particularly to Muscats and thin-skinned varieties that soon begin shrivelling in a warm dry atmosphere. In damp weather, when the external air is charged with moisture, the house should be kept dry, cool, and close, and when the nights are clear and frosty light non-conducting material such as scrim canvas, or even fishing nets drawn over the roof, will prevent radiation and so economise fire heat, while the subdued light is rather beneficial than otherwise to the Grapes, and certainly does no harm to the Vines.

#### PLANT HOUSES.

**Heaths.**—Such Heaths as *Erica hyemalis*, *E. autumnalis*, and others that have flowered early and are past their best for decoration, should be cut close back if they are intended to be utilised for the same purpose another autumn. If they have been in structures where heat has been maintained, they should not be placed direct into the cold greenhouse or they will be seriously checked. They should be gradually hardened to greenhouse treatment, so that they will start into growth slowly but naturally. Plants that have been in rooms for decoration are useless for growing on for another year. All plants employed for such purposes are better conveyed to the rubbish heap as soon as they are removed, for they are not worth the trouble necessary to restore them to health. Young plants in small pots that are intended for flowering another year must be kept in a light position and as cool as possible, so that they will not be excited into growth. Any plants that did not show flowers and are dwarf and bushy should be subjected to the same treatment. These plants should be watered carefully, taking care never to allow them to suffer by an insufficient supply.

**Epacris.**—These are naturally early owing to the mildness of the season, and with us will need no warmth to bring them forward into flower. Where these plants are intended for early flowering, and are pushed forward in gentle heat early in the season, they need no forcing in autumn to bring them into flower; but where the directions given have not been carried out, and the plants are in a backward state, the earliest may be forwarded in a temperature of 50°. They will advance more rapidly in this temperature if lightly syringed once or twice daily. Later plants, especially those intended for late flowering, should be kept cool, ventilating both day and night when the weather is mild.

**Azaleas.**—Where these plants are trained or closely tied annually, the operation will have been completed some time ago if previous directions have been attended to; if not, bring this work to a close at once. This is often regarded as work for the winter, and in many gardens is not yet touched; but this is a mistake, for it should always be completed directly the flower buds are formed, so that they have an opportunity of turning outwards naturally, which they will not do if tied after the growth is completed and has become firm. These plants must be kept as cool as possible, especially those required for spring and late flowering. If frost is just excluded from them it is all that is really required. The cooler they can be kept at this season of the year the more completely will the plants rest, and flower and grow better afterwards when required to do so. All that is needed to induce these plants to rest thoroughly is a low cool temperature. To induce them to rest by dryness at the root is ruinous, and disastrous results are sure to follow. Water should be applied carefully and judiciously, but at the same time they should not be allowed to suffer at their roots by an insufficient supply. Azaleas must never be left dry at their roots, or these will soon perish. Plants prepared for early forcing are already bursting their flower buds under the cool conditions advised above, and a week or ten days' warmth would bring them into full bloom. If forcing is done early in the year by inducing the plants to make an early growth very little is needed at this season, but where plants have not been prepared, forcing will be found hard work now the days are short and sunless. Where plants have not been prepared, and they are wanted in flower, excite them into growth by placing them at first in a temperature of 45° to 50°, and syringe them twice daily. A good place for them is on the surface of the bed of leaves advised to be made up for forcing operations. Before introducing these plants into heat examine them carefully, and if any thrips exist upon them syringe thoroughly with tobacco water, softsoap, and a little common washing soda, for this insect in heat will multiply rapidly and soon spoil the appearance of the plants. It is much better to destroy this insect by the above solution than by strong fumigation, for Azaleas often in this way lose a very large per-centage of their foliage.

#### THE FLOWER GARDEN AND PLEASURE GROUNDS.

Sweeping up and collecting leaves is the principal occupation at present. Now that they are nearly or quite all fallen some steps must be taken not only to clear all the walks or grass plots of them, but the shrubberies must also be looked to, or otherwise the leaves will be constantly blowing out from among these. All the vacant or exposed fronts of the shrubberies may well be lightly forked or dug over and the leaves buried, while the leaves farther back can be raked together and buried in large holes. Here they will slowly decay and form excellent soil for the flower-beds and other purposes. All the best of the Oak, Chestnut, and Beech leaves that can be collected should when dry be stored in a large heap, and will early next year be available for mixing with stable



manure and making into hotbeds for seed-raising, striking cuttings, and other purposes. Any that are stored in a large heap and intended solely for affording good leaf soil should not be allowed to heat strongly, but should be turned occasionally in order to prevent the formation of a white mould or fungus which completely spoils leaf soil.

*Planting Roses.*—November has been very favourable for this work, there being little or no rain to prevent its being done well. The ground for them should be deeply dug and thoroughly broken up, and any soil that has been exhausted either by Roses or other plants should have a liberal dressing of either rich loamy soil or short manure well mixed with it. Where climbing Roses especially are being renewed, every bit of the old soil should be replaced by a fresh compost, or, failing this, some good garden soil. Half the failures of Roses against walls and houses is due to poverty at the roots. In many cases they are worse off than plants in pots, as the latter do frequently get good top-dressings and liberal supplies of liquid manure. Those, then, who find their climbing Roses unhealthy should see what either replanting in rich soil or at the least a surfacing of loam and manure in equal parts will do for them. If the latter plan is resorted to the surface soil down to the roots should be removed and be replaced by the fresh compost, into which the Roses will quickly root. Newly planted Roses especially should be mulched with strawy manure, and where this may be thought unsightly it may be lightly covered with manure. As a further protection from frosts the dwarfs, when thought necessary, should have some strawy litter or fern scattered over them. Where Roses are particularly liable to be injured by frosts it is not advisable to at once plant those newly bought in, a better plan being to carefully and closely lay them in where they can readily be protected with mats or litter, finally planting them out as early in the spring as the weather will permit. Do not, however, defer ordering the plants till the spring, or a difficulty may be experienced in procuring the best sorts.

*Selection of Roses.*—Twenty-four good Hybrid Perpetuals are as follows:—Alfred Colomb, Charles Lefebvre, Marquise de Castellane, Mons. E. Y. Teas, Capitaine Christie, Etienne Levet, Comtesse d'Oxford, Louis Van Houtte, La France, Duke of Edinburgh, Baroness Rothschild, Dupuy Jamain, Marie Finger, Général Jacqueminot, Sénateur Vaisse, John Hopper, François Michelin, Marguerite de St. Amand, Horace Vernet, John S. Mill, Charles Darwin, Mr. Charles Wood, Sultan of Zanzibar, Countess of Rosebery, Maurice Bernardin, Boule de Nieve, Cheshunt Hybrid, Souvenir de la Malmaison (Bourbon), A. K. Williams, and Reynolds Hole. Of Teas some of the best are Catherine Mermet, Marie Van Houtte, Jean Ducher, Souvenir d'un Ami, Innocente Pirola, Devoniensis, Niphotos, Rubens, Perle des Jardins, Etoile de Lyon, Gloire de Dijon, Madame Lambard, Alba Rosea, Comtesse de Nadaillac, Madame Bravy, Adam, Souvenir de Paul Neyron, and Madame Willermoz; while the invaluable Noisette Maréchal Niel, and Hybrid Teas such as Lady Mary Fitzwilliam, Heinrich Schultheis, Earl of Pembroke, Countess of Pembroke, and Viscountess Falmouth should also be included in every collection. For light soils we would prefer to have all on the Manetti stock, and for heavy on the Briar or seedling Briar.

## THE BEE-KEEPER.

### A PRACTICAL CHAPTER.

BEE-KEEPERS are sometimes much puzzled by seeing the inexperienced apiarian prosper while the stocks of his more skilful neighbour have dwindled away. But although the experienced are thus occasionally defeated they are commonly successful, and are most reliable for giving information. At the present time there are many bee-keepers with but few years' experience who have only had fair seasons for their work which has induced them to form a misleading confidence in their knowledge.

During the last twenty-five years there has been no less than seven bad seasons, the bees to be kept alive had to be fed throughout the whole summer, and a large percentage of these years the stock had to be fed till the end of June. Some of these seasons were, however, in the end good ones; those hives that had been judiciously fed and otherwise well managed attained to great weight and remunerated the owner for his extra attention, while some apiaries in the same seasons were totally decimated. My object in these remarks is to impress upon bee-keepers the desirability of being always upon the outlook against bad seasons, to have everything in readiness and prepare for any emergency, giving the bees every advantage, and taking them at the proper time. One day's delay in feeding may render abortive for the season a hive that would have been otherwise profitable had food been presented before egg-eating and grub-drowning had taken place. Equally important is it too that swarming should not be delayed, and that supers be given at the proper time. Swarms may be taken when there is no honey if they are fed, but supers should for various reasons not be put on until honey appears, neither should they be delayed beyond the proper time, else they may not be completed.

The success of bee-keeping depends greatly upon assisting Nature and attending in due time to every little thing that conduces to the

well-being of the insect. It is my object at present not to dwell upon the general management of bees and hives, but to point out when and how to do little things in cases which the bee-keeper finds urgent, yet is unable through inexperience to perform. Feeding is a very important matter in bee-keeping, which should have been all past in September, but I learn from private letters that there are still some neglected hives. A piece of candy laid over the frames or opening in the crown of the straw hive will tide over the bees for some time, but should not be continued longer than when syrup (the best of all artificial food) can be supplied. Much syrup is given to the bees by far too thick, which causes it to granulate, and is thereby lost. Some sugars are stronger than others, therefore require more water to bring them to a proper consistency. The usual way of measuring or weighing is often not satisfactory. My own plan is to put the sugar to be dissolved in the vessel, then pour water upon it until it is covered from 1 to 2 inches, put it on the fire, stir until dissolved, and then boil for one minute; it is as easy to boil the water sugar combined as it is to boil water alone.

There is no difficulty to get strong hives to feed. In a recent article I described my compound feeder which I have found the best for ordinary feeding. Float and dummy feeders I do not approve of; the former is very liable to kill bees, and the latter has sometimes the same fault, with the additional one of the food being presented to the bees at the point farthest from them. Stimulative feeding is another error, though of very old date, but long since abandoned here. What its present advocates see in it I know not, as I have failed after many queries to elicit a single reply respecting its advantages. It is with weak hives that difficulty is experienced to induce them to take food, and it is for such hives that the greatest care is required that no bees be destroyed. The best plan to feed such a hive in moveable combs is to pour the syrup from a spouted vessel (as recommended long since by "A Renfrewshire Bee-keeper") into a comb slightly elevated until all the cells are filled, first the one side, then the other. This may be repeated until such times as the bees can be induced to take the syrup from a feeder. It is necessary after the comb has been so filled that the surplus sugar should be removed with a sponge or soft cloth, so that the surface of the comb be as dry and inviting to the bees as possible. In a hive with fixed combs syrup cannot be administered with safety in the same manner, but a barrel-feeder with a narrow tube not more than one-eighth of an inch thick, having a trough at the bottom sufficient for two bees only, may be pushed into the cluster. This feeder is on the fountain principle, therefore will not drip even though the bees do not sip the syrup.

The time that perplexes the bee-keeper most in feeding bees is when the hives are at the point of starvation during summer, when they are crowded to the door so much that feeders cannot be readily applied there, while it is equally impracticable to feed above, as the crown of the hive is covered with supers and their coverings. It will be observed from the foregoing that such cases and times have not been infrequent in the past, and the hives often standing at a distance of some miles from a house, it would be no easy task to strip a lot of hives to get crown feeders placed, and as injudicious to leave feeders at the entrances, which if unemptied might cause a general *melée* the next day. An easy and safe method of administering food in such cases is to have a hole in the floor through which a thimble of perforated zinc passes, and which contains a small float. Now fill any vessel with syrup, not more than a quarter of an inch deeper than the thimble, and press it up to the floor either by blocks or other fastenings, such as little fillets to receive the ears of the vessel. This simple yet effective feeder is admirably adapted where a great number of hives require feeding, as it can be filled and replaced in a few seconds, while the operator is not annoyed by bees. The ventilating floor if desired may have a permanent feeder, which is even easier filled, as it only requires to be drawn out a little to be filled, then pushed in, while it is easy of removal altogether.

Before dismissing this subject I would warn people against the advice to feed bees inside the house, and particularly against shutting in the bees any time for that purpose, as it simply means ruin to the hive. Artificial heat, too, in any manner I have found is disastrous; it causes the bees to separate and to fly out when the weather is unsuitable, then if the temperature is lowered many are sure to die when they have isolated themselves from the cluster. I have witnessed many cases of artificial heating, but never saw any good arise from it. A few years ago I saw a hive set on fire that the owner heated with a warm brick. The brick did not seem too hot, but the material it was wrapped in had become very dry, and when wrapped up generated enough heat to set fire to it, which the owner happily discovered in time to remove the brick.

I have previously shown the dislike bees have to entering sections having the broad bottom rail, and in my last article described a section without it, but which formed a rigid super, yet each easily separated from one another. Since then I have made a slight alteration on the common section, which serves the same purpose, reducing



the bottom rail to not more than a quarter of an inch broad. A small staple is then driven into each section, and a wire passing through these can be lifted as one, while, if necessary to prevent them separating, a small strip of zinc or tin having a tack in each end may be employed. This I consider a great improvement, and should lessen the reluctance of the bees to enter them. They may either be in one or in three pieces, with the narrow bar extra. I prefer the latter plan, which also has the advantage that they obviate the necessity of crates.

Dividing boards are of great importance, as being the means of contracting or enlarging a hive, effectual only when close fitting. This has, however, been departed from by modern bee-keepers, who advise that they should not be close fitting, which when so defeats the object of stopping draught, which they were intended to do, and makes manipulation more difficult. Dividing boards should be close-fitting and made easy of withdrawal by some means. I effect this by having the divider an inch or more short of the width of the hive. At each end and near the bottom of this I drive in a staple to keep the ends as much from the sides of the hive as will not crush a bee. To fill up this space at each end I use two thin pieces of wood, the length of the height of the divider (these pieces serve as distanceers to the frame). I now take two pieces of iron, and screw one end to the divider, the other to the upright piece. The upright when drawn up gives the slack required, and the slightest push down closes it effectually. The same appliance is used for regulating the floor either to close it tight or to give slack when it is to be withdrawn, while the floor is never out of place, as is the case where wedges are used. Then there is no danger of killing bees, nor of the floor falling from its place when manipulating.—A LANARKSHIRE BEE-KEEPER.

#### THE BRITISH HONEY COMPANY.

THE question of providing a ready and reliable wholesale market for honey produced in the United Kingdom has hitherto remained unsolved. The British Bee-keepers' Association has given the matter consideration from time to time, and various proposals to form depôts, &c., have been made, but without result. The excellent honey harvest of 1884 has prominently brought forward the necessity of something being done to assist the British bee-keeper towards placing his honey before the British public in a suitable form for sale.

Previously a large quantity of our best home produce has been purchased by unscrupulous dealers, who have resorted to acts of adulteration for the purpose of realising excessive profits. It is well known that there are but few samples of foreign honey that can be at all compared, in point of flavour, to that which is produced in most parts of Great Britain, but whilst the imported article has been sent out in the most tasteful forms, the home produce has been almost entirely neglected. A step has now been taken which promises to be of considerable assistance to the British bee-keeper in the disposal of his honey, &c., and also to the consumer in obtaining our home produce in its pure state.

A meeting of persons interested in promoting the industry of bee-keeping has recently been held for the purpose of establishing the "British Honey Company." The chair was occupied by Lord Sudeley, who is one of the largest bee-keepers in England, and a thoroughly representative board of directors has been appointed, consisting of the Rev. H. R. Peel (late Hon. Sec. of the British Bee-keepers' Association), the Hon. Frederick Hanbury Tracey, M.P., T. W. Cowan, Esq. (Chairman of the Committee of the British Bee-keepers' Association), Duncan Stewart, Esq., George Walker, Esq., F. Zehitmaye, Esq., and Mr. T. B. Blow. The Secretary to the Company is Mr. J. Huckle, the present Secretary of the British Bee-keepers' Association. The Company cannot fail to commend itself to the public, and in the interest of British bee-keeping we wish it every success.

#### TRADE CATALOGUE RECEIVED.

Hogg & Wood, Coldstream, Duns, N.B.—*Catalogue of Nursery Stock.*



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

**Resting Orchids (B.).**—No general rule can be given applicable to all Orchids, as many of them make their growths at different seasons of the year, and require correspondingly different treatment. No evergreen Orchid, which does not produce pseudo-bulbs should be rested, as this term is usually understood; the supply of water may be lessened when they are ripening their growths, but must not be withheld. The deciduous species can have a distinct period of rest, not giving more water than is needed to prevent the soil becoming dust-dry. The ordinary pseudo-bulbous Orchids may also be partially rested by greatly diminishing the water-supply, and the best time for this is after the growths are completed and ripened. Do not force the plants, they will start naturally, and then encourage them by a good temperature and plenty of water. From November until February is the time at which the majority of Orchids are rested.

**Fancy Pelargoniums (R. S. J.).**—It is a bad time to repot these plants just now, while growth is slow and the days short and dark. It would be better if you leave them until the turn of the year. We have potted at this season on many occasions, but the greatest care has been exercised in watering the plants afterwards until the days lengthened and the plants commenced growing and rooting freely. If you give water carefully after potting your plants will sustain no harm; if not, the foliage is very liable to become spotted and disfigured. A good compost is formed of fibry loam, one-seventh of cow manure rubbed through a fine sieve, and sufficient coarse sand to render the whole porous. Drain the pots liberally, and press the soil firmly into them. For further particulars on this subject see "Work for the Week," page 471 of our issue for November 20th.

**Insects in Soil (J. N.).**—The specimens enclosed were too dried in transit to us to be named with positive certainty, but they appear to be the grub or larvæ of one of the "pot maggots," as they are called, some species of *Otiorynchus*, probably *O. sulcatus*. The larvæ feed from autumn to spring, and the weevils emerge about May. They may be destroyed by watering the soil with clear lime water, with hellebore tea, with a weak solution of paraffin or petroleum, and in other ways. These insects have, however, nothing to do with the crumpled and discoloured aspect of the Pelargoniums, which is either the result of defective root-action or some error in ventilation. A cutting from a shoot is necessary for the purpose of satisfactory examination, a solitary leaf being insufficient to suggest the cause of the evil in this case.

**Painting Fruit Trees (J. E.).**—If the trees are infested with scale you may destroy it by syringing after pruning with a solution of Gishurst compound—3 or 4 ozs. dissolved in a gallon of hot soft water, and adding thereto a fluid ounce or half a wineglassful of petroleum. This will be much cleaner and more quickly applied than "paint," and will be at least as effectual. Unless you used the mixture too strong it would not injure the buds, but they may be easily damaged by want of care in dressing them. The trees may be kept quite clean by the practice now and previously recommended; of course, keeping the trees healthy by adequate moisture at the roots, and applying stimulants as may be needed. Undue dryness of the soil, resulting in unhealthy growth, renders fruit trees extremely liable to be infested with insects.

**Hot-water Apparatus Defective (Frike).**—If we understand your imperfect sketch correctly we think the peculiar heating of the greenhouse to which you allude is entirely due to the disposition of the pipes, as it is practically impossible for the water to circulate or flow up to a certain point in one pipe and then cross to the other, unless there be a connection, which we think there ought to be in the pipes of the pit where it is marked H, and as a consequence of this being in connection with return pipe (or desired return) of the greenhouse, which is on a higher level than the flow (or desired flow), which is lower than the return pipe, we are not surprised at the hot water leaving the flow and crossing over by the connection to the return, and so making its way to the greenhouse, as hot water always takes the highest level. The heating is not satisfactory simply because the water does not circulate freely, if, indeed, at all. Either you must put a valve on the connection between the pipes in the pit at H, and close it so as to make the water rise by the proper flow to the greenhouse, or take up the pipes connecting the pit and greenhouse, and have the flow highest, which even then would not be satisfactory, as at the point H the flow and return are on the same level, and the hot water may, and most likely will, divide and pass equally up the pipes to the greenhouse to where the highest point is indicated by a star, and the circulation is at an end. Put a valve between the two pipes in the pit, and close it when you wish to heat the greenhouse, after turning on the valve for that structure.

**Fungus in Garden (J. L. H.).**—We regret to inform you that there is no ready method of destroying the fungus in the soil, and unless we were compelled to do so we should not plant fruit trees in that "particular part" of the garden at present. It is doubtful if a better and safer plan can be pursued than to trench the ground, not necessarily bringing much of the inert subsoil to the surface, and incorporate with it a very heavy dressing of fresh lime—3 or 4 bushels to each square rod of 30½ yards not being too much. We should then take a crop of Potatoes from the ground, and possibly a second after another dressing of lime and soot. These crops, if good, would go a long way towards defraying the cost of preparation, and the land would afterwards in all probability be in first-rate condition for fruit trees. An excellent late Pear for a wall is Josephine de Malines. If you have space for two trees you may add Bergamot Esperen. The only way we can suggest for effecting the desired exchange is to advertise what you have for disposal, and what you wish in return. The terms of advertising can be obtained from the publisher.

**Renovating Vines (B., Sussex).**—We should attach far greater importance to the permanent well-being of the Vines than to the necessarily small value of the present unsatisfactory crop. We should cut the bunches and bottle them at once, forthwith commencing to improve the borders. As the Lady Downe's are already shrivelling they will get no better by hanging a few weeks longer, nor get no worse by placing the laterals bearing the fruit in water in a room that is not too dry; but, on the contrary, the fruit may freshen somewhat, without, however, improving its quality. These remarks apply to all the Vines but one—the Gros Colman, on which the crop is good, and as the quality of the Grapes will improve by hanging on the Vine w



should let the bunches remain and not disturb the Vine at present. Assuming there are a fair number of roots in the inside border we should consider the advisability of lifting all the outside roots, shortening some of them, and placing them in a much narrower border of good soil, supported by a wall of turves. In this fresh roots would form and extend rapidly in summer if kept moist by mulching, and the narrow border could be made wider as needed. In the meantime the roots inside the house should be encouraged by top-dressings and watering as needed. In the work of lifting, a matter of great moment is to prevent the roots drying. Good turfy loam, with lime rubbish and a liberal admixture of wood ashes, will be suitable for the border, reserving manure for the surface. The Vines may be pruned early in January, and should not be forced into growth early next year. They are certain to be improved by this treatment, provided the foliage is kept clean and permitted to develop under favourable conditions. Any mismanagement in the house will nullify the effects of the best border that can be made, and one of the greatest and commonest of errors is overcrowding the foliage and overcropping feeble Vines. Fresh soil can be applied to the roots of the Gros Colman when the crop is cut and the Vine pruned; and possibly by adopting the practice described by Mr. D. Thomson in January last this Vine may not require lifting at all. We are glad you have found our pages useful, and we shall always be ready to assist you if we can.

**Tea Roses in Pots (T. J. K.).**—With the aid of the house you describe there ought to be no difficulty experienced in the maintenance of the supply of cut blooms all the year round. The amount of sunshine our Roses get during the winter months is very small, yet we are rarely without a few good blooms; while during October and November, and again in the spring months, we cut great numbers of really fine flowers from plants occupying a space about equal to yours. From July till late in September, and this season up to the middle of November, plenty of good Tea Roses were cut from plants trained to warm walls and also planted in the open, and during that time the plants in pots were being rested. Supposing your plants would be turned out into a warm sunny spot early in July then would be the time to repot them, and during the summer, if properly attended to in watering and syringing as required, they would freely root into the fresh soil, and when housed—say, late in September—would only require a top-dressing with rich soil, to which a sprinkling of Beeson's or Standen's manure has been added. They should also be kept from flowering while outdoors, the removal of the buds being discontinued shortly before housing the plants. Soon after being housed they commenced pushing out fresh flowering shoots all over the plants and strong suckers are also formed. Under fair treatment they are no more liable to be infested with green fly than they are in the open, but it is advisable to syringe them at least once a week with the decoction recommended on page 324, or that recommended by Mr. W. G. Smith on page 479, both remedies being good preventives of mildew as well as of green fly and thrips. Under liberal treatment the plants would last for eight years or longer, but we prefer younger plants, as they usually give the finest blooms. If you rested them during the summer your house could be utilised for the culture of tuberous-rooted Begonias, or a crop of Tomatoes, the former being dried off when the room is again required for the Roses.

**Spiræa japonica (R. S. J.).**—You had better pot the whole of your clumps at once into 5 and 6-inch pots, according to the size of the roots. One large crock may be placed at the base of the pots, but for those required for late flowering this is not important. They do not need very much soil to grow them to perfection, provided the crowns are strong and have been well ripened, for upon this depends whether they flower well or badly. Any good fertile soil will do for them; but we prefer, where obtainable, good fibry loam to which has been added one-seventh of decayed manure. In potting leave plenty of room for water, for an abundant supply will be needed when the plants are in active growth. After potting you may stand the pots outside until the approach of severe weather, when they will need the protection of a cold house or frame. This is not really necessary with those required for late or spring flowering, for they will be safe if the pots are plunged in coal ashes and the surface covered about 2 inches deep, so as to protect the pots from the action of the weather. Spiræas are perfectly hardy, so that a very little protection to preserve the pots will keep the crowns in perfect condition. With the exception of a few required very late we prefer giving them protection under glass, for they start naturally into growth early in spring, and thus render the work of forcing comparatively easy. These plants are easily forced into bloom in a temperature of 60° to 65°, which will be necessary early in the season; later a lower temperature will suffice. It is a good plan to bring them forward after the first batch or two under slightly cooler conditions, so that they will not become drawn up weakly. After the plants have started into growth they should be given a circulation of air daily when favourable. When growth has fairly commenced the plants should be arranged as close to the glass as possible to keep them dwarf and sturdy. Before they come into full flower gradually inure them to cooler treatment to harden both the flowers and foliage, by which means they will be preserved in good condition for nearly double the length of time than if fully developed in strong heat. If wanted very early in flower plunge in brisk bottom heat and cover the crowns with an inch of cocoa-nut fibre or any other similar material until they start freely, when they may be grown without bottom heat. Plants started early—say at the present time—cannot be expected to do so well as those that are started later and brought forward under more natural conditions. Spiræas should never be dry at their roots, and when they have once developed a quantity of foliage and are showing their flowers stimulants in a weak state may be given freely. They must be kept free from insects by syringing, fumigation being injurious. When in full growth it is scarcely possible to give them too much water.

**Names of Fruits (S. Taylor).**—1, Ecklinville; 2, Grenadier; 3, Grenadier; 4, Golden Pearmain; 5, Kerry Pippin; 6, Dumelow's Seedling. (A. J. Cassin).—The dark Apple is Hambleton Deux Ans, the pale one Dumelow's Seedling, and the small one is not known. A new edition of the "Fruit Manual" has just been published, and may be had from this office, price 16s., post free 16s. 9d. (G. Montague).—Winter Quoining. (R. C. Creswell).—The Apple is Dumelow's Seedling, the Pear Comte de Lamy. (L. C., Somerset).

—Mannington's Pearmain. (W. E. Mason).—3, Golden Spire; 5, Cornish Gilliflower; 6, Pott's Seedling. The labels had come off the other specimens. The small round russet Apple is Braddick's Nonpareil. (T. D.).—Your Pears are correctly named Delices d'Hardenpont and Beurré Diel. (J. Iggulden).—Your Pears are correctly named Beurré Diel and Duchesse d'Angoulême. The Black Worcester and Uvedale's St. Germain are perfectly distinct, and there is only one General Todtleben.

**Names of Plants (Newton, Bristol).**—Schizostylis coccinea. (R. I.).—Celsia Areturus.

#### COVENT GARDEN MARKET.—DECEMBER 3RD.

BUSINESS very quiet, with prices generally lower. Nova Scotia and Canada Apples, as also St. Michael Pines, in heavy supply. Kent Cobs quiet.

##### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. .. .	2 6 to 3 6		Oranges .. .. .	100 4 0 to 6 0	
Chestnuts .. ..	16 0 0 0		Peaches .. .. .	per doz. 0 0 0 0	
Cobs, Kent .. ..	per 100 lbs. 60 0 0 0		Pears, kitchen ..	dozen 0 0 0 0	
Currants, Red ..	1 sieve 0 0 0 0		" dessert .. ..	dozen 1 0 3 0	
" Black .. .. .	1 sieve 0 0 0 0		Pine Apples English	lb. 4 0 0 0	
Figs .. .. .	dozen 0 0 0 0		Plums .. .. .	1 sieve 0 0 0 0	
Grapes .. .. .	lb. 1 6 4 0		Strawberries ..	lb. 0 0 0 0	
Lemons .. .. .	case 10 0 15 0		St. Michael Pines	each 7 0 10 0	

##### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes .. ..	dozen 2 0 to 4 0		Mushrooms .. ..	punnet 0 0 to 1 6	
Beans, Kidney ..	lb. 0 3 0 0		Mustard and Cress	punnet 0 2 0 0	
Beet, Red .. ..	dozen 1 0 2 0		Onions .. .. .	bunch 0 3 0 4	
Broccoli .. .. .	bundle 0 9 1 0		Parsley .. .. .	dozen bunches 2 0 3 0	
Brussels Sprouts	1 sieve 2 6 3 0		Parsnips .. .. .	dozen 1 0 2 0	
Cabbage .. .. .	dozen 0 0 1 0		Potatoes .. .. .	cwt. 4 0 5 0	
Capsicums .. ..	100 1 6 2 0		" Kidney .. ..	cwt. 4 0 5 0	
Carrots .. .. .	bunch 0 3 0 4		Rhubarb .. .. .	bundle 0 4 0 0	
Cauliflowers .. ..	dozen 2 0 3 0		Salsify .. .. .	bundle 1 0 0 6	
Celery .. .. .	bundle 1 6 2 0		Scorzonera .. ..	bundle 1 6 0 0	
Coleworts .. ..	dcz. bunches 2 0 4 0		Scakale .. .. .	per basket 2 0 2 6	
Cucumbers .. ..	each 0 2 0 4		Shallots .. .. .	lb. 0 3 0 0	
Endive .. .. .	dozen 1 0 2 0		Spinach .. .. .	bushel 2 0 4 0	
Herbs .. .. .	bunch 0 2 0 0		Tomatoes .. ..	lb. 0 6 0 9	
Leeks .. .. .	bunch 0 3 0 4		Turnips .. .. .	bunch 0 4 0 6	
Lettuce .. .. .	dozen 1 0 1 6				



#### IMPORTANT LITTLE THINGS.

##### FENCES AND GATES.

ESPECIAL notice has been given to wooden field fencing because in connection with most home farms there is a timber yard, motive power, and a circular saw. In cutting up timber for estate work each log is turned to account for various purposes, according to its suitability, so that there may be no waste, and many a rail, stay, pole, or post is so obtained from odds and ends unfit for other purposes. Field gates, too, are obtained in the same way, and notwithstanding the neatness, strength, and durability of iron gates we have a decided preference for plain stout gates of heart Oak for the rough handling to which farm gates are subjected. An iron gate is so easily bent or twisted that with it we are quite at the mercy of a careless carter, and that most carter is very careless is a fact well known to managers of home farms. But a well-made wooden gate if well hung cannot easily get out of order. We always have a stout sill put under the surface between the posts—this with a diagonal brace upon the gate ensures stability and perfect action for a long while. There must, however, be no fastening of fence wires to gate posts, or the strain will generally be found to pull the posts out of position. The expansion and contraction of wire also affects the posts to which it is attached.

Our wooden field gates are made in the ordinary way with five or more bars, but along the top we have a piece of angle iron with a screw and nut at each end to pass through the ends of the gate, so as to impart stability and at the same time protect the woodwork, the iron angle forming a ridge to the top of the gate, the wood being bevelled to the same angle as the iron, so that no moisture can lodge upon the gate top. Now that iron is so cheap and trade competition so keen iron fencing will supersede wooden fencing when the length is considerable, cheapness and durability both being in favour of the iron, the large manufacturers of iron fencing now undertaking to erect it, even at long distances from their works, "at prices defying competition," as a timber merchant dolefully remarked to us quite recently.

##### ROADS.

Considerable experience in road-making has taught us that a foot deep of hard matter is sufficient for any road, provided the surface



is kept sound and sufficiently rounded to throw off water at once, and that no provision of drains beneath the surface is necessary, except to convey away water falling upon the road. No hollows must be allowed upon the surface, or water accumulates, and with the friction of wheels soon causes serious damage. This is the most convenient season of the year for making and repairing roads, and the cost of the work depends upon the means of obtaining stone. If this is brought from a distance expenses soon mount up to a formidable sum, and no effort should be wanting to ascertain if suitable material cannot be obtained at convenient points near the line of road. We once had to make a road two miles in length, and although there were no indications of stone or gravel beds upon the surface, yet by boring beds of gravel were discovered close at hand, and a considerable saving effected. Now, this was soft sandstone gravel, quite unsuitable for the surface of a road, but answering perfectly beneath a surface dressing of hard gravel or broken stones, 8 inches of the soft, covered with 4 inches of the hard material, being all that is required for an ordinary farm road or carriage drive, if subsequently due and timely attention is given to keeping the surface sound by any necessary repairs to be done at this season of the year. There is sometimes much wasteful outlay upon this work, through its being entrusted to the hands of incompetent persons. We were recently asked to inspect an unfinished road upon which £200 had already been expended. The puzzled owner knew that the outlay was greater than it ought to be, but did not know why, and yet the errors were apparent at a glance. A track 2 feet deep had been excavated and filled with gravel—fault one; and the work had all been done by the day, and not by the cubic yard—fault two. Casual labourers employed by the day upon such work simply squander time, doing little good either for themselves or their employers, their object being to make the job last as long as possible. Piece-work, on the contrary, incites men to earnest effort; they have a reward in view proportionate to work done, and every one of them are bound to exert themselves, for there are usually enough good workmen in a gang to keep the sluggish ones up to the mark, and it is the foreman's business to see that the work is well done.

Gratings and drains are required at frequent intervals on sharp gradients. Thin cast iron gratings with narrow openings should not be used, but gratings with bars and frames thick enough to bear the trampling of heavy horses and wheels of a waggon. Finding it somewhat difficult to obtain such gratings from an ironmonger, we had a wooden pattern made of a strong grating and frame, and whenever a supply of gratings is wanted we have simply to send our pattern to an iron foundry and have some cast. Glazed socket pipes should be used for the drains, and the size should be from 6 inches to a foot in diameter, according to the position, length, and gradient of the drain. Avoid long drains as much as possible. Short drains with a sharp gradient invariably answer best, for they are self-cleansing, the water passing through so quickly that stones or soil cannot settle and eventually choke the drain, as so often happens when the gradient is flat.

(To be continued.)

#### WORK ON THE HOME FARM.

**Live Stock.**—Beasts forward in flesh have been easily sold off grass to the butchers at 5s. 6d. per stone of 8 lbs. dead weight, and we have only a few left. These are put together in a separate yard, and are fed with meadow hay and a mixture of crushed Waterloo cake, crushed oats, bran, and hay chaff. One or two dealers offered to buy these beasts off the grass; but by drafting them off somewhat more slowly to the butchers we have realised the £2 to £3 per head profit that would have gone into the pockets of the dealers or middlemen who so obligingly offered to save us the trouble of going to the butcher's to see the beasts weighed. Lean stock are now settled permanently in the yards for the winter, and much care has been taken to stock each yard with animals of a similar age and size, so as to avoid bullying and fighting as much as possible. Three cows have calved recently, affording a welcome addition of fresh milk to the dairy. We repeat that upon the home farm where a good well-supplied dairy is of the first importance, there should always be some cows to calve during the winter months, or the butter will certainly prove faulty. Let cows have a daily supply of chopped Carrots now as well as bran and the best meadow hay; but no cake, our object not being to fatten but to keep cows in a good healthy condition, and to sustain a full flow of fresh sweet milk till about two months or six weeks before the time of calving. Everything in connection with dairy farming has always been worthy of our best attention; but now and in future it must assume greater importance, for depend upon it in future the farm that pays will before all others be the dairy farm. We shall never be over supplied with milk and butter in this country, and we have only to produce first-class butter to enable us to compete with that which, to our shame and serious loss, is now imported in such large quantities. We have an excellent dairy woman, and so have most managers of home farms, but that certainly is not the case upon farms generally. This is one of the matters in which there must be a change for the better, and it is not difficult. Butter and poultry do much towards helping pay the rent upon many a farm. We know one excellent farmer's wife whose only complaint about her dairy is that her butter is in such demand that she can hardly

keep enough of it for her family. As usual, we have three or four heifers to calve next spring to afford us the choice of a good cow or two for the herd. This is done every year to keep up a full herd, and to pass out failing or barren cows in good time for a summer run upon grass to fatten for sale in autumn.

#### PRICKLY COMFREY.

I THANK you for your remarks on Prickly Comfrey. My experience differs from yours. My horses eat it freely, especially in the spring, after being kept on dry food during the winter. It has grown very well on my light soil during the last two years. But beyond a change of food I cannot find what advantage, if any, it is to animals. Can you tell me what are its characteristics or properties?—H. N.

[We here give analyses of Prickly Comfrey, Rye, and some Grasses, in order that you may see the actual qualities good and bad of Prickly Comfrey and its relative value especially to Meadow Grass for feeding purposes.]

	Prickly Comfrey	Green Rye.	Italian Rye Grass.	Smooth Meadow Grass.	Rough Meadow Grass.
Water.....	89.2	76.0	73.4	14.3	14.3
Albuminoids.....	1.4	3.3	3.6	8.9	8.4
Carbo-hydrates.....	6.2	10.4	12.1	36.8	34.4
Fat.....	—	0.8	1.0	2.3	3.2
Crude Fibre.....	1.8	7.9	7.1	32.6	32.6
Ash.....	1.4	1.6	2.8	3.1	7.1
	103.0	100.0	109.0	100.0	103.0

These analyses are by Professor Fream, who says of Prickly Comfrey, "That it has about the same feeding value as Green Mustard, Mangold, or Turnip tops. Being a very deep-rooted plant it is far less liable than plants of more superficial growth to be affected by drought, and it is therefore being cultivated in India."]

**WEBB & SONS' STAND AT THE BIRMINGHAM CATTLE SHOW.**—The centre bay of the gallery at the Bingley Hall Show is occupied, as usual, by Messrs. Webb & Sons, the well-known seed growers and manure manufacturers, with a magnificent and extensive display of agricultural and horticultural produce, raised from their celebrated varieties of seeds, which are as popular for yielding marvellous crops of unsurpassed quality as for producing specimens that are invariably successful in open prize competitions. Recent awards to the produce of Webbs' seeds include no less than thirty-two first and other prizes at the Birmingham Show now being held, the Prince Consort's cup, presented annually by Her Majesty the Queen, important prizes in Australia, the champion cup open to England and Wales, the whole of the prizes for roots and grain at the Norwich Show, together with champion cups and first prizes at all other leading shows and competitions; to which must be added a prize medal awarded at the late International Exhibition, London, for the excellence of Webbs' seeds for the farm and garden. The total value of the prizes won with Webbs' roots, cereals, &c., is estimated at over £18,000, and many of the prize crops and specimens were grown with the aid of Webbs' bone manures.

#### OUR LETTER BOX.

**Ringdoves and Small Birds in the Same Cage (E. S.).**—You can, of course, keep "ringdoves" (do you not mean collared doves?), canaries, and love birds in the same cage; but if you want the former to look clean and comfortable you will not, for the small birds are so much lighter and more active that they are sure to soil the plumage of the doves by dropping on them. Then you would find it rather expensive, for the doves would not eat anything else when they could get canary seed, and they have large appetites.

#### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain
1884.  November.	Baromet- er at 32.8 and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		
		Dry.	Wet.			Max.	Min.	In sun.	On grass.	
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	In.
Sunday ..... 23	30.153	35.9	34.2	N.W.	40.8	42.4	33.6	63.6	27.8	—
Monday ..... 24	30.120	35.0	33.9	N.W.	39.8	38.7	27.9	41.3	21.8	0.010
Tuesday ..... 25	30.275	27.7	27.5	N.	39.2	34.4	25.3	39.4	21.4	—
Wednesday .. 26	30.295	33.9	33.9	S.W.	38.4	43.7	27.7	53.1	25.3	—
Thursday .... 27	30.178	42.8	40.9	N.W.	38.8	44.2	33.8	63.0	30.2	0.016
Friday ..... 28	29.817	41.2	38.8	W.	40.2	48.1	39.9	50.1	34.2	—
Saturday .... 29	29.765	35.1	34.2	N.	39.8	40.2	39.8	60.1	27.2	—
	30.086	35.9	34.8		39.6	42.5	31.3	52.9	26.8	0.026

#### REMARKS.

23rd.—Fine all day, cold night.  
24th.—Foggy, slight sleet at 11.45 A.M., and occasionally afterwards.  
25th.—Fog early, and slight fog all day, otherwise bright but very cold.  
26th.—Fine and bright.  
27th.—Fine and generally bright, slight shower in evening.  
28th.—Fine.  
29th.—Dull early, fair after, rather fine sunset.  
Another dry and very cold week.—G. J. SYMONS.





11	TH	Sale of Orchids at Mr. Stevens' Rooms, Covent Garden.
12	F	Quekett Club at 8 P.M.
13	S	
14	SUN	3RD SUNDAY IN ADVENT.
15	M	
16	TU	
17	W	Society of Arts at 8 P.M.

## NOTES ON PEAS.

**F**OR Peas, as for many other crops, the season of 1884 has been a very trying one. We must hope even this exceptionally dry season may aid us in the future, and we must do as Mr. Taylor did with the failings in his Vine borders, endeavour to profit thereby. We have not suffered much in either quantity or quality of the Peas, for we have a convenient and plentiful supply of both soft and spring water, but the latter is not so beneficial, as it is always cold and very hard. Such a season as the past will prove to gardener and employer alike the great benefit of having an abundant supply of soft water, especially now that inside Vine borders are on the increase. Our principal rain supply runs beneath the floor of two sheds abutting on two furnaces, and has the advantage of always being well aired. This would appear to be of no small moment, as the effects of different water were very marked.

One lesson is to extend our practice of having most of the trenches intended for Peas prepared now, or not later than January. For many reasons such work is often a convenient course at this time, and if they are filled with strong fresh loam there is sufficient time for the rough grass to decay; and where crushed bones are largely used the soil is also the better for the extra few months. This being done, we usually spread a layer of cow manure along the rows. The covering of manure and the finer soil towards the top are worked well together. In the south, where most of the sowings are made earlier than with us, we would advise the trenches to be prepared proportionately earlier. Another advantage in this system is, that owing to the heavy rains during winter and spring the ground is thoroughly moist all through, and with a covering of spent bark is almost drought-proof.

We protect any variety which may be somewhat tender by placing pieces of glass over the seed, and no good seed ever fails to germinate. In the absence of glass we often use narrow boxes raised a little at one side. When birds are troublesome we place lengths of ordinary wire netting, pressing the top together to form a sort of ridge, which also checks the cold winds. Besides this, however, we fence them in with a row of short sticks, and, like most people, use as many Spruce boughs as can be had. We may here say that we endeavour to provide sticks, &c., as early as possible; but it is a mistake to put long sticks to Peas at first, though, perhaps, in some cases it is a safe plan to stick Peas three and four times as they grow, according to height. Nor is there much gain in using the same rods two seasons, seeing that during the second year in use they are apt to be affected by fungus.

Fortunately the varying fancies as to the flavour and height of varieties may easily be satisfied, for the number of forms is great, and the difference considerable. Notwithstanding that Ne Plus Ultra still heads the list as a late variety, many improvements have resulted from careful

hybridising. Circumstances are great rulers with regard to Pea culture; small or large, high and low gardens have all to be studied. We, however, give decided preference to tall varieties, some of which often reach 9 to 10 feet, bearing enormous crops from the first week in July until the last in October last year, and until the month of November this year. With regard to the varieties we grow, it is almost needless to say, that with every advantage and care, each season some are condemned.

American Wonder is all that could be desired in crop, size, and flavour. Earliest of All for the first time gave satisfaction, but appeared to require a richer soil than the majority of early varieties. We intend to grow this largely next season, sowing about the middle of January with American Wonder. William I. still proves a good early variety, and if sown about the middle of February is ready in July, being followed very closely by our general favourite Criterion, which comes into bearing nearly all at once, and so may soon be cleared away, giving plenty of air to rows of later varieties on each side. About the same time we have another old favourite, well named Hundredfold or Cooke's Favourite, a most useful soup Pea, and when, as with us, two lots are required at one time, good old varieties must not be discarded. A new variety which has done well is Duke of Albany, coming in rather early, of good size and splendid flavour. It will be more largely grown next year. Walker's Perpetual Bearer proved true to name, giving a continuous supply of good quality, if birds may be accepted as competent judges. Dr. McLean again proved good for soup. Some others will be left out, as they cannot rank with the grand Telephone. It now seems probable that the opinion we formed of the latter Pea for crossing purposes will be fully borne out. The new Lord Bacon may not be the last of its offspring.

Sutton's Giant Emerald Marrow next claims special mention, and is no less in favour now than eight years ago, when we grew it for the first time. It has a peculiar sweetness, is very distinct, and a heavy cropper. Duchess of Edinburgh is a first-class tall Pea. Evolution appears to have an extraordinary constitution. The dry weather seemed to have little or no effect upon it; it bears well, the peas are of fine size and very fine when cooked, yet not of the best flavour, but for exhibition it is certainly valuable, and is equally as good as a general crop and a late variety. Amongst the later Peas we greatly esteem Giant Marrow, though the pods this season did not all fill equally. The peas and crop was enormous and of excellent flavour. Altogether we consider this an indispensable general crop and late variety. Reading Giant, which appears to be an improved Ne Plus Ultra, grew about 10 feet high, bearing a very heavy crop throughout October.

We had this year a number of trial rows, one each of the best and new varieties 10 feet apart, and the same in length, on a border facing west. These were sown thinly, and at the same time was sown, also rather thinly, along the same rows, a good strain of Sweet Peas of mixed colours. The culinary sorts each gave us a valuable dish, having had most of their points pinched out after showing four to six blooms. Later on the Sweet Peas grew vigorously and made a fine display until cut off by frost. Between these rows was a bed of Mignonette sown for the use of bees close by, and with a good patch of Borage appeared to be thoroughly enjoyed alike by the little workers and the lookers-on.—LATHYRUS.

## CHRYSANTHEMUMS IN SMALL POTS.

ACTING upon advice given in the Journal some two or three years ago, I have for the past two seasons had a very useful batch of Chrysanthemums in 4-inch and 5-inch pots, which I find invaluable for furnishing the front stage of the conservatory and for filling vases in the house.

We spare no pains in preparing numbers of different plants for winter flowering, many of which require double and treble the amount of time and care to produce as do these little gems in the



pots above mentioned, and which in the end do not repay us half so well for our labour. Take, for instance, the old *Linum trigynum*—a great favourite in many places for winter work. Cuttings must be struck in March at the latest if good plants are wanted, afterwards repotted and syringed regularly twice every day through the summer months if their greatest enemy, red spider, is to be kept down, and then they must have a house with an intermediate temperature if they are to continue flowering. On the other hand, we can begin to cultivate these small *Chrysanthemums* in July (or August in the southern counties), and you have them in perfection from September to Christmas, since we have the invaluable *Madame C. Desgranges* to begin and *Fair Maid of Guernsey* and others to close the season with.

As the *Journal* has doubtless gained many young readers since the time mentioned, I will give a few details of my practice, hoping to induce others to follow the plan. Old plants or spare young ones are planted out as soon as it may be considered safe in any moderately good ground, where they will as a rule take care of themselves until the time comes for taking the cuttings, and here in the north I think the second or third week in July late enough, probably the first week in August may be early enough in the south. We then set a frame apart for the purpose of striking the cuttings in. If a slight hotbed can be made so much the better. Everything is prepared beforehand, so that there will be as little delay as possible in placing the cuttings in the pots. We give them a thorough watering, plunging them in the frame, which is kept close and shaded for about a fortnight, by which time it will be found that many of the cuttings have formed roots, and may be gradually hardened off and placed in a sunny position, on a hard ground out of doors.

From the time these cuttings are taken until the last bloom is expanded they must not be neglected in any way; watering, in particular, must at all times be most carefully attended to. Mildew, too, is very apt to make its appearance and must be checked at once. Unless the under sides of the leaves are examined the cultivator may be in blissful ignorance as to the presence of this parasite, which may be working so much harm to his plants. As to varieties, there are numbers that are suitable for this mode of treatment; but as a rule when the incurved and Japanese varieties are used I would, in nearly all cases, recommend the crown bud to be taken, or, if lost, to reduce the terminal buds to one, and the cultivator will be rewarded with blooms better than are often seen on plants which have been growing in their pots three times as long. As a rule I place three or five cuttings in a pot (I like five in a 5-inch pot); but of course each grower will have his special requirements and different sized vases to fill. I am also very fond of one good cutting struck in a 3-inch pot and shifted into a 5-inch pot. The invaluable *Lady Selborne* looks grand amongst scarlet *Pelargoniums*, *Bouvardias*, &c., when grown thus singly; but of whites for this purpose I know of nothing equal to *Steur Melanie*. A potful of this, with from twelve to fifteen blooms, and healthy foliage covering the rim of the pot, the whole not being more than 18 inches high, is fit for almost any purpose and cannot fail to be admired. Of course the *Cedo Nullis* and any of the *Pompons* may be used, and for later work I have found amongst incurved *Hero of Stoke Newington* and *Princess Teck* especially useful. *Dr. Macary* amongst Japanese strikes me as being well adapted for the single pots; its sturdy growth and good flowers would make an impression when mixed with other subjects. Especially are these little plants valuable for grouping, their heads of flower standing so well above the groundwork of *Maidenhair*, &c., beneath.

As regards the soil and manure used, I do not think that these matter so much, it is the unremitting care and attention that are needed. I always like to employ good loam and decayed manure or leaf soil, with a little of *Clay's* or *Standen's* manures. Very much may be done, too, by not filling the pots too full at the time of putting in the cuttings and adding a rich surface dressing after the buds are set; of course some stimulant is needed almost daily after this stage has been reached. Anyone who has not tried this plan will, I feel sure, be well repaid after giving it even a first trial. Here, in future, they will be grown much more largely than ever.—W. JENKINS, *Durham*.

### THE PROPAGATION OF SMALL FRUITS.

UNDER this heading we place *Gooseberries*, *Red*, *White* and *Black Currants*, and *Raspberries*. Young plants of all of them may be bought very cheaply in all good nurseries, and many may think they can be bought so cheaply that it would be unprofitable to propagate them, and this may be correct in numerous instances, but young plants in stock are often very useful. Few would care to buy in more plants than were required for the principal quarters, but when

they are propagated at home many of them may be planted in corners and places which would otherwise remain unoccupied. Many will experience real pleasure, too, in rearing their own fruit bushes, and amateurs especially will always feel a pride in seeing and calling their friends' attention to "their own" *Gooseberries* and *Currants*. Our practice is to insert a batch of cuttings of each every winter, and we have always a good lot of young bushes to fill up where required, or to give away to cottagers.

*Gooseberries* and *Currants* are propagated in the same way. The cuttings of both should be selected at pruning time. Only the best varieties should be increased, the pruning not being done before the cuttings have been taken. Some may be inclined to prune all their bushes, and then pick up what pieces they want for cuttings, but we prefer going over the bushes just before pruning begins, and cutting off all the shoots wanted for propagating. There is no danger of their getting mixed when this is done, and the very best can always be taken. Strong clean shoots of this year's growth are the best for cuttings. They should be upwards of 1 foot in length, and as each variety is taken off they should be tied together, named, and then put into the soil with the cut ends about 3 inches below the surface. Here they may remain for a time or until they can be conveniently made and put into their rooting quarters; this may be any time from now until the beginning of March. In making the cuttings the ends should be cut neatly, then take the buds off three parts of the length up, leaving only half a dozen at the top. These will grow and form the heads. Where very tall-stemmed plants are wanted the cuttings may be made longer, but very fine bushes can be formed of cuttings 12 inches in length when these will be 3 inches below the soil to root, 6 inches of a stem and 3 inches of buds on the top to form the head. When made they may at once be inserted for rooting. Light sandy soil is the best for them; they should be placed in rows, the cuttings being from 4 to 6 inches apart, and 15 inches from row to row. The ground for their reception may be dug over first, and then dibble the cuttings in and make them very firm, as they root better and quicker when firmly put in the soil. Treated in this way a few may fail, but the majority will grow and form fruitful bushes in two or three years.

Young *Black Currant* bushes can often be secured by taking off the sucker-like growths which spring from the roots of the old plants, but the prettiest formed and cleanest stemmed bushes are generally those propagated from cuttings. I have included *Raspberries* amongst the fruits to be propagated, but I ought to say this is not readily or profitably done from cuttings, the best way being to take the young plants from the side growths. Throughout the summer all healthy *Raspberry* plants produce many smaller ones in the form of suckers from the roots, and as each of these have roots with stems 18 inches or 2 feet in height, they make capital plants to form young plantations with, and the strongest of them very often bear fruit the first season after planting. They may be taken off any time during the winter and placed in their growing quarters without any preparation. *Raspberries* delight in a rich soil, and there is no fruit-bearing plant which will do so well or prove so profitable in a cool soil and shady position.—A KITCHEN GARDENER.

### METEOROLOGY—THE RAINFALL.

HAVING for the last several years kept a daily record of a few simple meteorological observations, indicated by instruments placed on my own grounds at Reigate, I have felt an interest in comparing the amount of rainfall I have registered during the past eleven months with that of the like period in the preceding year, 1883. The following table of results may probably interest some few of your readers:—

1883.		1884.	
	Inch.		Inch.
January .....	3.04	January .....	3.06
February .....	4.45	February .....	2.09
March .....	1.01	March .....	1.92
April .....	1.32	April .....	1.56
May .....	1.92	May .....	0.53
June .....	2.62	June .....	1.77
July .....	2.93	July .....	1.49
August .....	1.25	August .....	1.07
September .....	4.58	September .....	2.89
October .....	2.73	October .....	1.44
November .....	4.55	November .....	1.67
30.40		19.40	

It will be seen that the difference in quantity of rainfall is great, and in our light soil the long continuance of drought has, no doubt, shortened the life of many plants. I am persuaded that in many parts of the country the want of rain has been serious. Different districts we know will vary considerably in the amount of rainfall they get, but taking the kingdom throughout, the year must, I think, be found much below the average in



the rainfall. It has certainly been exceptionally dry in this locality. As a proof, I will mention that wishing to lift some rather large trees, and to trench deeply a small portion of border ground in my garden at the end of last month, I was surprised to find, after the first spit was dug, the ground below was as hard as a rock. No spade could turn it, and we were obliged to use the pickaxe to loosen the soil. I am glad to say the rain we have just had has now rendered our garden work easy.

The satisfaction I have experienced in taking these meteorological observations and gathering information on the rainfall of other districts, induces me to believe many others would pleasurably occupy their leisure time in obtaining information on the same subject, and younger men than myself be led to carry out many other and higher branches of the science of meteorology. In an age of such rapid progress as the present we may hope for many valuable and important discoveries in this science. Although the voltaic pile already reveals the wondrous connection of electrical, magnetical, and chemical phenomena, the circle of brilliant discoveries has yet to be pierced, for who shall say we know the whole number of the forces which pervade the universe?

I may perhaps appropriately remark how largely indebted I am to a kind and excellent friend, Mr. Mawley, for the interest he has taken in looking over and correcting some of my meteorological readings, and the judicious advice he gave me when I first made arrangements for these daily records and registering the rainfall in every month throughout the year. Under his personal superintendence I had one of Stevenson's screens placed on grass in an open part of my garden facing north, inside which rest a maximum and minimum thermometer. I have also a minimum thermometer, forked bulb, for the grass, which rests on two brass supports just immediately above the grass, though not in positive contact with it, and another exposed thermometer on two wooden standards at 2 feet above the ground. My rain-gauge is a 5-inch copper Snowden one, having a rim 5 inches deep, and provided with a copper overflow bucket capable of holding over 9 inches of rain, with a glass bottle receiver. All these instruments were duly verified and certified for correctness before I received them from the makers. I take readings once daily at 9 A.M. punctually, and keep these records strictly and regularly posted up in a book arranged for this purpose. It is a most interesting work, and has afforded me the highest pleasure as well as useful information. Mr. Haywood of Woodhatch, and the Rev. Alan Chcales, who resides a few miles from Reigate, also engage in this study, and we impart the result of our several readings and compare our monthly records with the greatest satisfaction and mutual benefit. I also send a monthly counterpart of my registry to Mr. Mawley, and often get the advantage of many valuable remarks from him. I have entered into these details to show how with really very simple appliances our vacant moments may be usefully occupied. Mr. Mawley is well known as a great authority on matters relating to this department of science, his writings are much appreciated for their accuracy and clearness of expression, and I am sure we shall read with deep interest a paper by him which will appear in the forthcoming edition of the "Rosarian's Year-Book" for 1885.

I cannot conclude without expressing regret that a better position was not given to the meteorological section at the Health Exhibition, so that the public might have had a better opportunity of examining the various highly scientific instruments that were exhibited, and understanding the important purposes for which they were used.—G. B.

### IS TRENCHING ALWAYS JUDICIOUS?

WHEN writing on the subject of mulching and top-dressing I stated that I was arriving at the conclusion that too much importance is attached to deep culture for vegetables as well as fruit trees, and I now propose to give my reasons for thinking so. Much that I shall advance will probably be at variance with the opinions and practices of more scientific and more experienced men, and if I am not actually told, when advocating good surface rather than deep culture, I am getting out of my depth, I may yet receive a sharp rap on the knuckles for my pains. This I will receive, if not thankfully, at any rate with the best of good will, and doubtless the act of proving me wrong will set many readers right.

It has become a pretty general practice to recommend that ground be double-dug or trenched for various crops; in fact, the instructions frequently convey the idea that this deep digging is absolutely necessary if success is to be achieved. In some cases, no doubt the advice is sound enough, but more often not; it is both misleading and, to say the least, quite uncalled for. Whether trenching in any form will be beneficial depends entirely upon the depth of the surface soil, the nature of the

subsoil, and the way in which it is performed. Supposing we have a depth, say, of 12 inches or more of alluvial or other fertile soil with a subsoil that needs to be broken up the better to amalgamate with the surface soil and thereby serve to maintain its moisture during dry weather, then perhaps bastard trenching, by which process a small portion of fresh soil is mixed with the over-manured or perhaps exhausted top soil, will serve to correct and improve it. Or, again, if the surface soil is very shallow resting on a hard unbroken subsoil, the breaking-up of the latter the mixing with it various decaying and fertilising materials will gradually and surely improve the fertility of the garden. I also admit that where manure is scarce there are gardens that will be improved and rendered more fertile by bastard trenching.

Many, however, do more harm than good by trenching, and I assert that the whole business has been overdone. I may, perhaps, be told that by deep digging we facilitate the drainage of the land, that we bury many weeds, thereby rendering these into manure instead of being plagued by them the following season; that by loosening the soil to a greater depth we facilitate the percolation of the water as it falls; and that as the air follows the water, it in its turn effects the disintegration of the subsoil, thereby liberating various mineral foods, &c. All this may be perfectly true in some cases, but I repeat not in the majority, nor has it proved so in any gardens that has come under my constant notice. According to my experience, whether the ground is well drained or not depends entirely upon the number and disposition of the pipe drains, and newly trenched ground is the most absorbent and the worse drained; while land that has not been dug, say for twelve months, naturally drains the best, and is, therefore, the warmest. I am alluding more especially to soil in which clay more or less abounds, and which, under good treatment, is perhaps the most fertile of all.

Ordinary digging, if properly done, should bury weeds beyond all fear of their being brought to the surface before decomposed, while the seeds of many seem the most tenacious of life when buried to a great depth. What amount of manurial property is there in weeds, or, indeed, in the strawy rubbish that, in too many places, has to do duty for manure? With regard to the aëration of the subsoil, or the second spit of ground, and the disintegration following, I had better, perhaps, say nothing, or some of my thinking friends will take me to task. It reads very well, but it is a slow process, and I, for one, cannot afford to wait for it, especially seeing we have neither time for trenching and no wish to encourage deep root-action.

It is near the surface where the fibres are formed, and, whether rightly or wrongly, I am inclined to attach but little value to roots without fibres. We are told that certain plants will root to a particular depth, but is this deep root-action to their advantage, even supposing food is placed for them to that same depth? All will agree that it is possible for fruit trees to root too deeply, and I am within the mark when I assert that it is deep root-action that is the ruin of 90 per cent. of the fruit trees planted. If it is to the advantage of fruit trees to be rooting near the surface, why not apply the same rule to vegetation generally? Taking this for granted, is it not, to say the least, a very wasteful practice to dispose a quantity of manure in the bottom of a deep trench when this serves to allure the roots to a greater depth than is good for them? It may be said that the second spit is manured partly to afford food for the plants, and partly to gradually fit it for bringing to the surface in the place of that which is exhausted of much that the gardener cannot restore to it. A very good object doubtless, but why put the manure so deep? Would it not be better to dispose it between the two spits, where it would be better assimilated by the plants?

Trenching, or the complete reversion of the two spits, most frequently results in bringing much very poor soil to the surface; and even in bastard trenching, or the breaking up of the ground two spits deep without changing their positions, still greatly alters, as intended, the character of the surface soil, the shovellings effecting this. In either case, if we make the surface poor and unworkable, the chances are the crops, for one season at least, will never become sufficiently strong to benefit by the convenient deep root run. This may seem a weak argument, but it is not, as, strange to say, it is this very occurrence that has upset the calculations of many who have trenched their garden under the impression that wonderful crops would follow. Very few subsoils or second spits, as the case may be, are, when brought to the surface, sufficiently fertile to suit the crops planted in them, and in some cases it takes years to bring them into a good working condition. If we must trench the ground—and I again admit it may be wise to do so in some instances—we must also take particular notice that we also either well mix or manure



the top spit. Any rubbish is good enough for the bottom, but the best short manure should be reserved for the top.

Now supposing trenching has been well and intelligently carried out, it yet remains to be proved that this greatly deepened root-run will prove so very advantageous to the majority of crops occupying the ground. Is it not a fact that a deep and, in this case, loose soil results more often than not in the production of a much greater amount of haulm or leaves, as the case may be? If this greater luxuriance were followed by a correspondingly greatly increased yield, the gain would be evident enough, but as it happens the reverse is most frequently the case. Take Strawberries for instance, will these yield well if given to over-luxuriance? No trenched ground I have yet seen has produced such heavy crops of fine fruit to equal those annually grown on ploughed land only. It is just the same with any kind of fruiting plant. Keep them rooting near the surface, this being done by avoiding digging and applying frequent manurings and mulchings when necessary, and they are certain to form moderate growth and plenty of fruiting wood. Broccolis and other members of the Brassica family grow most luxuriantly on deep loose ground without producing any better, and, at the same time, being more liable to be destroyed by frosts. Beans and Peas form more haulm than is wanted without surpassing others of the same nature on ground receiving good surface treatment; and even Asparagus, which is supposed to require deeply trenched ground and other formulas, does equally well on well-drained ground, manured, and dug similarly to the preparation made for other crops. The Asparagus is especially a surface-rooting plant, as anyone will see who may lift some of the roots, and we had far better encourage them on the surface rather than entice them downwards. What I have found to do well on trenched ground are Celery and Potatoes, and in both cases the reason is not far to seek—the Celery rooted out and away from the trench, while the Potatoes were better simply because the ground cannot well be too loose or broken up for them.—W. IGGULDEN.

#### MRS. PINCE GRAPE.

YOUR correspondent "Titch" (on page 483) appears to be rather dubious about this Grape as a late keeper. I have found it in this respect quite equal to Lady Downe's, having cut the bunches of Mrs. Pince for years in succession a week or so before pruning the Vines in February as plump as could be desired, the fruit being then bottled in the usual way. This Grape is also superior in flavour to that of Lady Downe's, besides having the by no means to be despised property (in all seasons) of bearing a full crop in houses where from three to six different varieties are planted, and undoubtedly it is oftener grown under those circumstances than in a vinery devoted to itself. Your correspondent asks if I keep on a little ventilation at all seasons. We admit air at all times when the temperature outside will allow. As regards our Vine roots, the Vine borders here, both out and inside, are a complete network of active roots within a few inches of the surface—J. J.

#### THE DARWIN POTATO—*Solanum Maglia*.

ON January 17th of the present year Mr. J. G. Baker of Kew read before the Linnean Society an exhaustive and interesting paper upon tuber-bearing Solanums, in which the several species possessing this character were described. Special reference was made to *S. Maglia* as being from a humid climate, and therefore worthy of the attention of hybridists. The subject is an important one, and, with a view to testing its disease-resisting powers, we obtained some tubers of this species, together with some of *S. Jamesii*. These were both treated alike—namely, were grown in pots in a well-ventilated frame and received all necessary attention. *S. Maglia* made very slow progress at first, but ultimately produced a strong well-developed haulm, which appeared perfectly healthy until late in the autumn, when it was attacked by a fungus which rapidly spread over it. The few tubers produced do not, however, seem to be affected. *S. Jamesii* was similarly attacked, and in this case the tubers also had a diseased appearance. In a season exceptionally unfavourable to the ordinary form of the Potato disease this was the more remarkable, and to remove any doubt about the matter we submitted the haulm of *S. Maglia* and the tubers of *S. Jamesii* to Mr. Worthington G. Smith, who gives the following remarks as the result of his examination:—

"No doubt you will publish a description of the diseased plants of *Solanum Maglia*, one of which you have sent on to me. My plant, although alive, is in a bad state, the leaves being discoloured and withered, as if they had been placed in some poisonous solution; a very few bright patches of green, however, remain here and there. The main stem and leafstalks are also diseased. A search over the entire plant has failed to detect the Potato fungus named *Peronospora infestans*, although other fungi are present. On examining the leaves under the microscope fungus spawn is in every instance readily found growing within the leaf. In every part of the stem, as well as in the leafstalks, similar spawn is met with. In several places the stems and leafstalks are soft. On cutting the soft places open the whole interior is found to be one felted mass of fungus spawn or mycelium. The bad condition of the leaves is un-

doubtedly caused by this profuse mycelium inside the stem, the leaves being virtually disconnected from their supporting stalks and the main stem.

"The mycelium does not remind me of *Peronospora infestans*, but of the fungus which has of late been so extremely destructive to Potatoes in Ireland—viz., *Peziza postuma*. The effects in both instances are the same. In *Solanum Maglia* the mycelium is not yet far enough advanced in growth for the production of the compacted spawn masses termed *Sclerotia*. Whatever the disease is, the plant of *Solanum Maglia* is traversed throughout, and in some places the tissues entirely destroyed, by fungus spawn.

"Too much has been made of the supposed immunity of *Solanum Maglia* from disease; there is no reason to suppose it able to resist disease. Mr. Baker considers it to be a distinct species from *S. tuberosum*, and so hybrids may be useful and experiments should be made and encouraged. Mr. Baker has clearly pointed out that whilst *S. tuberosum* is a plant of the interior hills of Chili, *S. Maglia* grows in the near neighbourhood of the coast. He therefore thinks that the native habitat of the latter more accords with the climate of Britain than the former, and that *S. Maglia* may grow here in a more healthy manner than does *S. tuberosum*.

"Nothing more can be said. The speculations as to *S. Maglia* being disease-proof are of little value, for it is known to be one of the species on which the *Peronospora* grows. Suppose our climate does suit *S. Maglia*, it is very certain that it suits the *Peronospora* too, and the *Peronospora* invades healthy plants, not sickly ones. We have in *Solanum Maglia* a plant from a humid region of Chili, and it appears to fall before a fungus which is possibly the same with the one which has been extremely destructive in a humid country like Ireland. I hope *Solanum Maglia* will do well in Britain—perhaps it may, there is a fair chance; but it is necessary to warn gardeners against much that has been written (not by Mr. Baker) about its disease-proof qualities. I have examined the diseased tubers of *Solanum Jamesii*; the disease patches appear to arise from a form of scabbing. No trace of *Peronospora infestans* was met with, but the mycelium of some other fungus was common. The tubers are in a bad state, the brown mottling in some instances going a considerable depth into the substance of the tuber."

In connection with this subject Mr. Baker's observations upon *S. Maglia* may be advantageously reproduced:—

"From all that we know it would appear that in Chili *S. tuberosum* is a plant of the hills of the interior, *S. Maglia* of the near neighbourhood of the coast. This is still further confirmed by the fact that the wild Potato found by Darwin in the Chonos Archipelago, in south latitude 44°-45°, is undoubtedly conspecific with the *S. Maglia* of Valparaiso. Original specimens from Darwin are in the Kew herbarium, and they are quite characteristic of *S. Maglia*, differing only from the plant grown in Kew Gardens just described by their larger (white) corolla and more densely hispid calyx, with more acute teeth. Darwin's note on the plant, as printed at page 288 of the 1835 octavo edition of the 'Voyage of the Beagle,' is as follows:—'Chonos Archipelago.—The wild Potato grows on the islands in great abundance on the sandy shelly soil near the sea-beach. The tallest plant was 4 feet in height. The tubers were generally small; but I found one of an oval shape 2 inches in diameter. They resembled in every respect and had the same smell as English Potatoes; but when boiled they shrunk much and were watery and insipid, without any bitter taste. They are undoubtedly here indigenous. They grow as far south, according to Mr. Low, as latitude 50°, and are called Aquinas by the wild Indians of that part. The Chilote Indians have a different name for them. Professor Henslow, who has examined the wild specimens which I brought home, says they are the same with those described by Mr. Sabine from Valparaiso; but they form a variety which by some botanists has been considered as specifically distinct. It is remarkable that the same plant should be found on the sterile mountains of Central Chili, where a drop of rain does not fall for more than six months, and within the damp forests of these southern islands.' The true explanation of what Darwin in the last sentence, with characteristic sagacity, commented upon as very remarkable, is evidently that the Chonos plant and that of the Chilian Cordilleras are each distinct species.

"The plant dealt with by Sabine in his well-known paper 'On the Native Country of the Wild Potato,' in the fifth volume of the 'Transactions of the Horticultural Society,' is also undoubtedly *Solanum Maglia*, as just described. The history of the plant is as follows:—Two tubers were sent to the Society from Chili in 1822 by Mr. Alexander Caldeleugh, Secretary to the Legation at Rio Janeiro. They were planted in the garden at Chiswick in richly manured soil, and the produce was most abundant. The two plants in a single season yielded about six hundred tubers. These were of various sizes, a few as large or larger than a pigeon's egg, others as small as the original wild ones, which were globose and under an inch in diameter. The flavour of them when boiled was exactly that of a young cultivated Potato. Sabine gives two excellent figures, a coloured one of the stem, leaves, and flowers, life-size, on plate 11, and on plate 9 figures of two tubers before and after cultivation. Although these figures are cited by Dunal in his Monograph in 'De Candolle's 'Prodromus' under *S. tuberosum*, there cannot be any doubt that they represent excellently the present type."

Mr. Arthur W. Sutton of Reading has also been making some investigations into the characters and probable value of these species, and the following letters in reference to the subject appeared in the *Times* of November 29th:—

"Lord Cathcart has suggested that you would probably consider the facts mentioned in the enclosed letter of general interest.



"I will only trespass upon your space to explain that the experiments which have been carried on during the past summer at Lord Cathcart's request have had for their object the attempt (by cross-fertilisation with distinct and hitherto uncultivated species of *Solanum*) to infuse fresh blood into the *Solanum tuberosum*, the species to which all the varieties of Potatoes at present in cultivation belong.

"The success which has thus far attended this operation in the case of *Solanum Maglia* encourages the hope that an entirely new race of Potatoes may result which shall be free from the attacks of the *Peronospora infestans*, from which the Potato crops of the country have suffered so greatly during recent years.

"*Solanum Maglia* was discovered by Darwin in the Chonos Archipelago, 44° to 46° south latitude, and is remarkable as choosing for its habitat low-lying marshy places near the coast, whereas *S. tuberosum*, from which the cultivated Potato springs, is a native of the higher Andes, where rain is almost unknown.

"In view of this fact, and that in a wet summer and autumn the Potato disease is invariably much more virulent, while in a dry season like the past its ravages are reduced to a minimum, it has been thought that the constitutional aversion of *S. tuberosum* to humidity has probably induced its susceptibility to disease. On the other hand, it is hoped that the preference shown by *S. Maglia* for a damp soil and moist climate may lead to its being a parent of a new race of Potatoes far more suitable for the climate of the British Isles.

"With this object Lord Cathcart forwarded me some tubers of *S. Maglia* and another species called *S. Jamesii*, in March, and the enclosed is a report to his lordship of the first season's work.

"Those who are interested in this question should read the two exhaustive papers which have recently appeared, one by Lord Cathcart, on 'The Cultivated Potato,' in the Journal of the Royal Agricultural Society (vol. xx., part 1), the other by Mr. J. G. Baker, F.R.S., of Kew, read by him before the Linnean Society, and since published under the title 'A Review of the Tuber-bearing Species of *Solanum*.'—ARTHUR W. SUTTON, *Reading*."

#### "REPORT TO LORD CATHCART.

"Reading, Oct. 20th.

"My Lord,—It gives me much pleasure to report to your lordship the results obtained by the cultivating and fertilising the varieties of *Solanum* which your lordship forwarded to me in March.

"Of the two varieties—namely, *S. Maglia* and *S. Jamesii*, there were respectively sixty-one and eight tubers. The former, *S. Maglia*, were divided at the time of planting into two sections—viz., section (a) consisting of tubers having a pale-coloured skin; and section (b) tubers distinctly red in colour. The *S. Jamesii* showed no variation whatever in colour.

"Knowing that Potato sets frequently fail to start if unfavourable weather follows immediately upon the planting, and being very anxious to obtain the most complete results possible, the tubers were planted in pots under glass as soon as received, and we were thus able to transfer to a carefully selected spot in the open ground the first week in June three plants of *S. Jamesii*, and forty plants of *S. Maglia*, sections (a) and (b).

"Notwithstanding the pains we took, we found it impossible to induce more than three tubers of *S. Jamesii* to start, the remainder of the sets rotting in the soil, possibly owing to their having been lifted before quite ripe, or having been stored under unfavourable conditions during the winter—i.e., before they came into our possession.

"I may here mention that in addition to the *S. Maglia* and *S. Jamesii* received from your lordship I received from M. Blanchard of Brest a few tubers of *S. Ohronii* (synonymous with *S. Commersonii*). These were treated in precisely the same manner as the others, and two plants were put out by the side of the *S. Maglia* and *S. Jamesii* on the same date.

"No difference could be seen in the two sections of *S. Maglia*, the foliage, flowers, and habits of growth being identical, and when a portion of the crop was lifted about September 5th, the produce of the section (a) was not in any way distinguishable from that of (b), the majority of tubers in each case being of a deep red colour, but here and there a few pale and almost white, resembling those planted in section (a).

"All three species made rapid growth, but *S. Jamesii* and *S. Commersonii* showed signs of ripening off about the middle of August, although *S. Maglia* still continued growing.

"In its general character and habit of growth the *S. Maglia* might easily have been mistaken for an ordinary variety of *S. tuberosum* as commonly grown in this country, although there were points in which it differed from any one of the recognised varieties.

"*S. Jamesii* was totally different in every respect, and to an ordinary observer would not have been considered a Potato at all. The height was only about 8 inches to 10 inches, the leaves excessively small, and the habit of growth not altogether unlike the *S. Capsicastrum* used for table decoration.

"The *S. Commersonii* somewhat resembled the *S. Jamesii*, although it was more robust, and in every way more nearly approaching the type of an ordinary Potato plant. This also ripened off about the middle of August. But *S. Jamesii* and *S. Commersonii* we could easily recognise from the description and plates in Mr. Baker's paper read before the Linnean Society.

"Each of the three species produced an abundance of flowers, the corolla in each case being white. It is an exception in cultivated forms of the Potato for the corolla to be white, it being generally of a purplish lilac tint, varying in depth according to the particular variety.

"As the flowers appeared every possible care was taken to fertilise them with pollen from some of our best disease-resisting Potatoes, and it is gratifying to be able to report that in the case of *S. Maglia* we have obtained three fully developed berries well filled with seed. These I hope to sow next year, watching with great interest the development of the seedlings, and noting what practical result has been obtained by thus hybridising the two species. Both *S. Jamesii* and *S. Commersonii* resisted every effort at fertilisation, and this we were not surprised at, as there was so great a difference between these species and *S. tuberosum*, a difference more strongly marked, as before mentioned, in the *S. Jamesii*.

"On September 5th a portion of the crop was lifted, and it was found that the tubers of *S. Jamesii* and *S. Commersonii* had not been materially altered by cultivation either in form or size. *S. Commersonii* was the least productive, our crop consisting only of five tubers. *S. Jamesii*, on the other hand, produced in one case as many as forty tubers from a single set, but the tubers were in most cases a little smaller than those planted. In the *S. Maglia*, however, the effect of cultivation was most marked. The tubers as received from your lordship were about the size of a pigeon's egg, but the produce consisted of tubers quite as large as an ordinary Potato, and as many as eight to twelve tubers to each plant. A few specimens were cooked and proved to be of fair quality for table.

"If agreeable I shall be happy to forward for your lordship's examination specimens of the tubers, if your lordship will inform me to what address you would wish them sent.

"I recently called on Mr. Baker at Kew, and he was greatly pleased that our first year's work had been so far successful, as were also Professors Oliver and Dyer.

"The *S. Maglia* has not hitherto been known to bear a seed berry, and we may, therefore, attribute the present result entirely to the fact of its impregnation with pollen of the *S. tuberosum*.

"There is no doubt, after the exhaustive paper contributed by your lordship to the Journal of the Royal Agricultural Society of England, and the publicity given to Mr. Baker's lecture, that this a subject that will command increasing attention, and, with your lordship's permission, I hope to forward to the horticultural press some account of the progress made.

"Apologising for the length of this letter,

"I have the honour to be,

"Your lordship's most obedient servant,

"ARTHUR W. SUTTON.

"The Right Hon. the Earl Cathcart, Thornton-le-Street, Thirsk."

#### GLADIOLUS GANDAVENSIS HYBRIDS.

THE unusually mild autumn has enabled us to leave these in the ground much longer than can generally be done. This, together with the most favourable season for their development, is eminently satisfactory, for splendid corms have as a rule been produced even with the later-planted batch, while the majority of those planted early are larger than I have ever seen English-grown ones. This to some extent was anticipated even without the remarkably helpful season, as they received all the attention which was considered necessary in order to produce good results; and the conditions under which they were grown—in all about 1500 bulbs in upwards of 150 varieties—may be briefly summed up thus: Warm, sunny, well-drained position, deeply dug or bastard-trenched ground, a good supply of decayed manure, coarse grit about the corms, and occasional supplies of water during very dry weather.

The position I consider of paramount importance, and after trying various aspects with certain well-known varieties I am more than convinced that a warm southern or western aspect is the best, and if gently sloped so much the better; indeed next season I intend planting most if not all of them in a sloping border about 10 feet wide with a fall of a foot or 15 inches towards the front, and I fully expect even better results, other things being equal. The previous preparation of the ground I hold to be most desirable, especially if wet and rather stiff. With such no time should be lost in getting it ridged as roughly as possible to ensure the sweetening effects of wintry weather. The ground I have selected for next season's planting, although moderately light and well drained, is nevertheless now turned over; but it will not be manured till the planting season, or owing to the drainage much of the goodness will be lost, which I hold to be most essential in the successful culture of the *Gladiolus*. At any rate I have been more satisfied at the result with than without manure, although some good growers urge its non-importance, and attribute some of the ills affecting the *Gladiolus* to its excessive use; but personally I am very sceptical on this point and act accordingly. Those promulgating that doctrine say that manure-fed plants never ripen their corms thoroughly, and consequently the latter fail to keep well through the winter and in the long run fail entirely. I quite believe that the instances of insufficient maturation are due mainly to late planting supplemented by selecting wrong positions; if put in at the proper time, say early in March, in well-drained sunny



places manure will assist rather than prove prejudicial. Placing coarse sand about the corms I believe is a very good practice. They turn out clean with firm coats, and the "spawn" seem to revel in it, and when lifting recently I was struck with the difference between the corms treated with and without sand.

Storing the corms through the winter is a knotty point with many, but surely there should not be much difficulty about the matter when once their requirements are understood. At least two points must be practically considered—viz., keeping the corms in a solid and plump condition, and to prevent them growing. If either of these are allowed the corms will suffer, and in proportion to that allowance so will be the loss of vitality and the subsequent and at least partial failure. A cool, steady, slightly moist atmosphere in frost-proof quarters is necessary to keep them well. Especially does this apply to those purchased from dealers, and the sooner they are got in the better, for as a rule they necessarily do not improve upon their hands, as the conditions under which they are usually kept as a matter of convenience are by no means those which I would select for the purpose. Many gardeners wait until the spring before ordering; but this is surely a mistake, because those who look ahead will have had the best corms. Rather order at the earliest opportunity and store them in your own fashion until planting time.

As to the storing of those which have been grown, that is I think, especially in private places, another matter. The following is a very simple plan. As each variety is lifted place them in pots, the label with them, and cover them loosely with a little soil or moist sand, leaving them precisely as taken up; and when all are done the pots can be stood in a cool place such as a vinery or shed, in which they may remain all winter, and it will not be necessary to remove the tops until they will fall away of themselves, most likely when being prepared for planting. It is necessary with this treatment to see that the soil or sand does not get very damp, or the corms will start into growth early in the new year, which will not be at all satisfactory, for there should not be a root emitted till they are in the proper place to succour roots—viz., mother earth. The spawn should be removed and labelled, and at the end of March it may be placed in small drills about 3 inches deep and covered with sand, when useful little corms will be produced by the end of the first season, which must be raised and stored after the fashion of the elder ones, and after liberal treatment another season many will flower the succeeding year.—T.

#### THOUGHTS ON CURRENT TOPICS.

CHRYSANTHEMUMS have lately received the lion's share of attention in the Journal, and the cultivators and exhibitors of the "Autumn Queen" have, I think, had a very good innings, and either are or ought to be satisfied with the prominence that has been accorded to the several exhibitions in which they are interested. It seems to me that the Chrysanthemum fever must have about reached its height. I have had the opportunity of visiting one show of these flowers that I perceive is pronounced a very good one, and I am bound to say that the crush of visitors surprised me, and the intensity of interest taken in the exhibits was such as I never saw equalled—not even at a great Rose Show that was held in the north last year.

A VERY prominent thought that haunted me as I examined the magnificent blooms, and it haunts me still, is that gardeners in various parts of the country, and good gardeners too, who have never seen a first-rate Chrysanthemum show, have no conception of what may be accomplished by special knowledge and great cultural skill in the development of the blooms. They have been growing Chrysanthemums for years and as they think growing them well, as I have done, and been vain enough to think that no one could grow them much better; but I have had the conceit taken out of me and have become very conscious of the fact that I have still something to learn, and I mean to learn it if I can.

BUT I think I may fairly claim to be already somewhat the wiser for my visit. I picked up a few hints that I think I should never have so well obtained by reading, and this shows the advantage of inspecting exhibitions. The older I get the more fully am I convinced of the advantage that accrues to owners of gardens by not only allowing, but encouraging their gardeners to attend two or three shows during the year at which the very best produce of gardens is to be seen. I may possibly have been more fortunate than some better men of the craft in enjoying the privilege for some years of having had my expenses to a few of the leading shows defrayed. I am quite sure the little outlay has been well invested, and if others had not thought so too, it is scarcely conceivable that the practice would have been continued so long.

No gardener is worth his salt if he is not stimulated to greater effort when he sees products superior to his own, and which he has the means of producing; nor is a man or a "servant"—if "A. F. M." prefers that good old-fashioned term—worthy of filling a responsible position if he

permitted an employer or considerate "master" to lose anything by conceding a favour now and then of the nature indicated, and which is so highly appreciated.

No earnest gardener is, as the late Mr. Robert Fish used to say, a mere "six o'clock man." He works for something more than wages, and works for hundreds of hours in a year, first to make, then maintain his reputation, and to render the garden in his keeping in the highest degree satisfactory both in appearance and productiveness. Such a man is as happy thinning Grapes at three o'clock in the morning and in attending to Chrysanthemums, for instance, for two or three hours in the cool of summer evenings, as the "six o'clock" men and those with hard task-masters are either sleeping or grumbling in their cottages.

READY, willing, cheerful service is far more effectual and infinitely more to the advantage of those who not only purchase but win it than labour can possibly be that is given grudgingly on the do-as-little-as-can-be-helped system. There is no knowing when a person commences thinking how far his thoughts will reach. Mine on the present occasion have run far beyond Chrysanthemum shows, yet not beyond their scope, for I found on inquiry, and was not at all surprised by the information, that the splendid plants and marvellous blooms that I had the pleasure of examining were in many, if not in most, cases to a very great extent the results of the attentive care bestowed in producing them in what are known as "over-hours." In some instances I have reason to believe that not one prescribed hour of labour has been withdrawn from the general work of the garden in growing Chrysanthemums that have won prizes; but on the contrary, the ordinary routine work has been pressed on more briskly in preparation for the absence that is necessary in attending the shows.

I THINK such men deserve all they win, and I think, too, it would be a mistake not to give them reasonable encouragement—a mistake in every way: on the part of the workers in suppressing their energy and skill; on the part of the masters in restricting the development of the resources of their gardens; and in the interests of superior culture and the consequent advancement of horticulture generally in placing a clog on the machinery, if the term is permissible, by which the best examples of success are achieved.

NOT a few of the men, I venture to think, have encountered difficulties at the commencement of their exhibiting career. They have had to combat the jealousy that existed lest time should be spent in indulging in a mere "fancy" or "fad;" but by the exercise of that tact which all gardeners should possess, with untiring diligence and conscientious labour, they have gained the confidence and eventually the encouragement of those who before mistrusted them, the outcome being united effort, harmony, and mutual goodwill. That is what I meant when I said that "Masters, as a rule are pretty much what men make them;" and I am *not* surprised that "A. F. M." believes the converse is true. I take him to be a master (but may be wrong), and have formed an opinion that he is a good one. I think, too, if I were his servant his conduct (judging by his sentiments) would be such as to make me a better man, and I am sure, if I found him to differ, as the doctors say, from my diagnosis of him, I should try and make him a better master. "A. F. M." has fairly gained his point on the question of terms, and I think he will not be much surprised to hear that I would much rather be the "servant" of a good master than the "man" of a bad one. That is my last thought on this subject at present.

A MOMENT'S attention is due to the remarks of your Cork correspondent "F. O." on page 480. So far from my thinking that the lifting of Peach trees in large borders is unnecessary in a district so dull and wet that the leaves are retained in the winter, I said that "No doubt your correspondent does quite right under the circumstances" (see page 458) which is the exact opposite of what he adduces as my convictions after he had read my words above quoted. I fear he does not read carefully, but I also respectfully suggested to him the desirability of restricting the roots still more, and my remarks on this subject are pronounced by your correspondent "Very good."

IT will be conceded, I think, by most, if not all, practical gardeners that the more the roots of trees are restricted the shorter and firmer will be the growth; and it follows, I think, as a natural consequence that the duller and wetter the district in which Peach trees are grown the greater the necessity for preventing succulent shoots which retain their leaves all the winter. Of one thing I am certain, that Peach trees of the size named, or 10 feet high, with a 15 feet spread of branches, can have all the support they need in borders 8 feet wide and 20 inches deep in the driest and sunniest district in the country.

WHEN Peach trees need lifting annually it appears to me pretty conclusive proof that the borders in which they are growing are, as a rule, either too large or too rich. There are exceptions we know to most rules, and these, in fact, show that the rules are sound; and an exception to the rule in question arises when by an accident or unpreventable frost the blossoms are destroyed, and no crop follows, as the trees would then grow more strongly, and even too luxuriantly, in a border that would have neither been too large nor too rich had the trees been laden with fruit. These are matters in which gardeners must exercise judgment



and act accordingly; but I am very firmly of opinion that many, if not the majority, of borders for Peach trees are needlessly large.

MR. ABBEY, in his note on 502, on the application of liquid manure, raises objections to certain methods, and answers them as he goes on; and he utters one or two truisms, such as making wet soil wetter by giving it more water, and that some of the liquid manure applied in winter drains away. On the question of applying liquid manure to trees outdoors when in a dormant state, Mr. Abbey fails to see any benefit in the practice beyond enriching the soil, "and in that way it is of great benefit, provided the soil is not already saturated." I have only to say, in reply, that when soil is "saturated," liquid manure can no more be poured into it than it can be into a tub that is already full.

WHENEVER liquid manure will pass freely into the ground in winter it may be given safely and with great effect to large fruit trees in orchards and bush fruit trees in gardens, Roses, &c., which do not grow with the freedom that is necessary for the production of good crops of fine fruit and flowers, because of the poverty of the soil. It is deplorable to see the waste of manurial drainings in winter in various places in the country under the presumption that that is the "wrong time" for applying them to the land. Then, as has been previously suggested, many cesspools can be more conveniently emptied in winter than in summer, and the contents may with "great benefit" be poured into ground at once that needs enriching. More than twenty years have elapsed since I commenced the practice experimentally, and the systematic and extensive adoption of it since have enabled me to regard with equanimity the adverse views of persons who consider the method theoretically unsound. I hardly like to tell them so, but I always have a suspicion that there is a fault somewhere in the reasoning of my friends when they endeavour to demonstrate that any method that is proved right in practice is wrong in theory; but whether I tell them so or not, that is nevertheless the opinion of—  
A THINKER.

### LATE GRAPES.

LIKE others, I should be glad to learn how late in the season Gros Colman has been kept, and what condition it was in at the latest period in which it has been preserved. I have kept it in plump and fresh condition well into February, and the fruit appeared as if it would have kept much longer. Now that its culture is becoming generally understood the value of this Grape is increasing. A large berry is always an important item in the character of any Grape, and when the Gros Colman has proper treatment its flavour is sugary, skin very thin and tender. Having during a number of years tried experiments with keeping Grapes, I have in every case found that those which were to be kept late did by far the best when ripened with plenty of heat and air, giving them a long season after they were coloured to become matured and well charged with sugar, and none which I have found takes such a long time to come to the standard of perfection as Gros Colman, and Lady Downe's next. When they have justice they do not deteriorate in flavour by bottling. I never care about using either of these varieties before the end of the year, and like the latter best when it has hung to March and onwards. Alicante, Gros Maroc, and Gros Guillaume are ripe and fit for use about six weeks before the others are at their best, though all are grown in the same structure. West's St. Peter's, for flavour, thin skin, fine bloom, and other good qualities is not easily surpassed during the winter months, and about twenty-five years, and longer, since it was one of the leading late Grapes; but growers then did not try to keep Grapes in large quantities later than February. The finest of West's St. Peter's I have ever seen were grown in vineries not far from where Mr. Iggulden sends his interesting remarks. Alnwick Seedling appears at present to be a Grape which would keep late and be a compeer with Alicante and Lady Downe's in April. The appearance of this kind is much in its favour. Large berries densely covered with bloom, strong footstalks, and a total absence up to this period of anything like shrivelling and decay is in its favour. A new kind we have for trial, named John Downie, sent to us by its namesake, is in every way more like Alnwick Seedling than any other kind we know; fruit, wood, foliage, and general habit with us seems identical. Some have said that John Downie is much like Gros Colman; with us no two black Grapes are less like each other.

To keep Grapes for consumption till May I feel sure that few will care to dispense with Lady Downe's and Alicante. We have tasted these at the end of April, kept by experienced growers their colour and general appearance being all that could be desired, but the flavour (if ever they had any) had changed to something like vinegar and water. This is not a solitary instance. We hold that Grapes early matured and well tended in the autumn, bottled after the leaves fall from the Vines, say about Christmas, and, all other things being equal, they should retain their sugary flavour till April. It is a misfortune that we

have no late shows to exhibit well-kept Grapes, or even to show the proportions of those which have been under high cultivation. Grapes exhibited in September which are not fit to be eaten till December or January is a burlesque, many being exhibited at a time which would receive no favour by the most ordinary tutored palates.—M. TEMPLE, *Carronhouse*.

### GUAVAS.

OF the several Guavas grown in the West Indies the White Guava (*Psidium pyrifera*) is esteemed the best, and is the most abundant. In its wild state it is more of shrub than a tree, but when cultivated in gardens it attains the dimensions of a tree, with a stem about 6 inches in diameter and a head of the size of a medium-sized Apple tree. The wood is very hard; the leaves are from 2 to 3 inches long, in pairs; the flower is white; and the fruit, which is as large as a hen's egg, is sulphur yellow, very smooth and perfumed. The pulp is flesh-coloured, aromatic, and grateful to the palate. This Guava is used as a dessert fruit, and is also preserved with sugar; and Guava jelly is esteemed one of the finest preserves that come from the West Indies.

The Red Guava (*Psidium pomiferum*) is a much larger tree than the White. The fruit is shaped like a Pomegranate, and when ripe has an



Fig. 88.—*Psidium pyrifera*.

agreeable odour. It is, considered, however, to be inferior to the White Guava, but is much improved by cultivation. The Mountain Guava, which is found in the woods of Jamaica, is of no value as a fruit tree, but the wood is in request on account of its dark colour and the fine degree to which it may be polished.

But the Guava which is considered of the greatest value in this country is Catley's Guava (*Psidium Cattleyanum*). This fruit was first described by Mr. Catley of Barnet in a paper read before the Royal Horticultural Society, and it has since been cultivated in many gardens in this country. The fruit is about the size of a small walnut, is nearly round, of a deep claret colour, and possesses somewhat the flavour of the Strawberry. The skin is of the consistence of that of the Fig, but thinner. The plant is also ornamental. It is propagated freely from cuttings. It is a native of China, is more hardy than the Indian species, and it ripens its fruit in warm greenhouses in this country, frequently producing two crops in a year.





THE annual general meeting of the National Rose Society will be held by the kind permission of the Horticultural Club at their rooms, 1, Henrietta Street, Covent Garden, to-day (Thursday) at four o'clock, for the purpose of receiving the report, electing the officers and Committee for the ensuing year, confirming or otherwise the arrangements made by the General Committee for the exhibitions of 1885, and the transaction of other general business.

— WE regret to learn of the death of a very worthy and well-known gardener, MR. D. JUDD, who expired last week at Shefford, in Bedfordshire, aged sixty-nine. Mr. Judd was born at Edmonton, Middlesex, and after serving as a learner at Brockett Hall, Kew, Gunnersbury, and Chiswick, he became gardener at Southill Park (Mr. Whitebread's), Althorpe Park (Earl Spencer's), Hawkstone Park (Viscount Hill's), and Brooke House, Isle of Wight (Mr. Seely's), and was for the last few years a pensioner of the Gardeners' Benevolent Institution. Mr. Judd was a thorough all-round practical gardener and an excellent man.

— MR. G. BONSALE, The Gardens, Campsount, Doncaster, writes:—"Will you please correct a mistake which appears in last week's issue respecting the YORK SHOW? Second prize, black Grapes, was stated to be awarded to G. Bateson, Yarborough, Heslington, it should be G. B. C. Yarborough, whose residence is Campsount."

— A TADCASTER correspondent sends us the following note on the WEATHER IN YORKSHIRE:—"We have had some slight winter weather hereabouts, about 3 inches of snow and some frost, but not enough to kill Pelargoniums, one or two of which in a warm border that were planted in 1883 are yet alive. We want rain badly, as springs with us, only about 70 feet above the bed of the river Wharfe, are yet very low, more so than at any other time for many years."

— GARDENERS' ROYAL BENEVOLENT INSTITUTION AUGMENTATION OF PENSION FUND.—The following third list of subscriptions to the above fund has been sent to us by Mr. Thomas of Chatsworth:—Mr. Markham, Tapton House, Chesterfield, £5; Griffiths Hughes, Esq., Victoria Street, Manchester, £2 2s.; Mr. C. Walls, Grantham Hall, West Hartlepool, 10s.; C. Markham, Esq., Tapton House, Chesterfield, 10s.; total, £8 2s.

— THE following information has been forwarded to us for insertion:—"Messrs. Sutton & Sons, who were the first seedsmen appointed by special warrant to H.R.H. the Prince of Wales, have received a royal warrant appointing them seedsmen to Her Majesty the Queen, after being honoured with Her Majesty's commands for thirty consecutive years."

— "J. L. B." writes as follows on SEPTEMBER BRUSSELS SPROUTS:—"Those who are in the habit of exhibiting generally try to get the choicest productions, and good examples that are a little earlier or a little later than usual generally have a little more weight with the judges than others that are in full season; and why should not Brussels Sprouts? I do not think the third week in September unusually early for exhibition purposes. I do not grow them for exhibition, yet I had good full-sized sprouts sent into the kitchen the second week in September this year, yet there was no grumbling because they were too early. I may add that ours are generally in by the end of September. Our seeds are sown in the open ground in February. Radishes, Cauliflowers, Lettuces, and a few other vegetables are sown at the same time, and all are covered with a frame; as soon as they have two leaves beside the seed leaves they are pricked off in the open ground, and finally planted where they are to remain for the winter. The varieties I grow are Reading Exhibition and Aigburth."

— WE regret to announce the death of the distinguished agricultural chemist, DR. AUGUSTUS VOELCKER, F.R.S., which occurred on Friday, the 5th inst., at his residence, Argyll Road, Kensington, in the 62nd year of his age. The deceased was the son of Frederick Adolphus Voelcker, and was born at Frankfort-on-the-Maine in 1823, and educated at a private school and at the University of Gottingen. He was appointed

assistant to the late Professor Johnston of Edinburgh in 1849, and Professor of Chemistry in the Royal Agricultural Society at Cirencester in 1852, which post he resigned in 1862, and became Consulting Chemist to the Royal Agricultural Society of England. Dr. Voelcker was the author of "Chemistry of Food," "Chemistry of Manures," "Lectures on Agricultural Chemistry," and numerous papers on theoretical and agricultural chemistry in the Journals of the Royal Agricultural Society of England, the Highland Society, Chemical Society, &c. His loss will be widely felt in the agricultural world.

— THE issue of the FLORIST AND POMOLOGIST for December contains the following notice:—"After regularly appearing month by month under several modified forms since 1848, the 'Florist and Pomologist' will now be discontinued. Its thirty-seven volumes, which represent thirty-seven years of labour on the part of ourselves and our predecessors, furnish a record of the floral work of that period, and its 624 plate illustrations, for which a first-class character may fairly be claimed, will remain as evidence of the advances which have taken place in the popular plants, flowers, and fruits, which have more especially engaged the attention of cultivators. To those who have aided us in our efforts to keep up the character of the work our warmest thanks are due and are hereby tendered." We are glad to learn that Mr. Moore is, to some extent, recovering from his recent severe illness.

— THE second meeting of THE LIVERPOOL HORTICULTURAL ASSOCIATION of the present session was held on Saturday evening, the 6th inst., Mr. Thomas White in the chair. The business before the meeting was papers on "The Cultivation of the Cyclamen," by Mr. Hugh-Ranger of the Aigburth Nurseries; and the "Culture of the Pelargonium," by Mr. E. Bridge of Huyton. It is scarcely necessary to say Mr. Ranger treated his subject in a very able manner, his reputation as a grower of Cyclamens having long become established. A greater proof of his skill could not be afforded than reference to the magnificent bank of plants exhibited by Messrs. R. P. Ker & Sons at the recent exhibition held in St. George's Hall. Mr. Bridge has also been a successful exhibitor of Pelargoniums at Manchester, York, and other places, and gave evidence, by his excellent paper, that he was thoroughly master of his subject. At the close of an interesting discussion a warm vote of thanks was accorded to Mr. Ranger and Mr. Bridge for their papers, and also to the chairman for presiding.

— THE LAMBETH AMATEUR CHRYSANTHEMUM SOCIETY held their annual meeting and dinner at the Bridge House Hotel, London Bridge, on Friday, the 5th inst. Mr. W. Ball presided, the vice-chairmen being Messrs. H. Ellis and C. Harman Payne. There were seventy-nine members and friends present, and a very agreeable evening was spent.

— AN American contemporary states that "Upwards of 60,000 barrels of Apples arrived in Boston in the first week of November. The shipments from Boston during the same period were 17,000 barrels, and engagements have already been made for 14,000 barrels this week. Advices from Liverpool report a decline of about 50 cents per barrel, owing to large receipts, though it is hoped later shipments will do better. The margin of profit to exporters is still quite small. Since September 1st the exporters of Apples from Boston put up about 130,000 barrels, against 8000 barrels for the same time in 1883."

— AT the ordinary meeting of the ROYAL METEOROLOGICAL SOCIETY, to be held at 25, Great George Street, Westminster, on Wednesday, the 17th inst., at 7 P.M., the following papers will be read:—"On the Reduction of Temperature Means from short series of observations to the equivalents of longer periods," by Dr. Julius Hann, Hon. Mem. R.Met.Soc. "The diversity of Scales for Registering the Force of the Wind," by Charles Harding, F.R.Met.Soc. "Report on the Phenological Observations for 1884," by the Rev. T. A. Preston, M.A., F.R.Met.Soc. As the draft list of officers and Council for the year 1885 will be prepared at the next Council meeting, it is requested that those Fellows who wish to suggest names for the new Council will send them in before the 17th inst.

— MR. J. MALLENDER sends the following SUMMARY OF METEOROLOGICAL OBSERVATIONS AT THE GARDENS, HODSOCK PRIORY, WORKSOP, NOTTS, FOR NOVEMBER.—Mean temperature of month, 41.4; maximum on the 15th, 58.6; minimum on the 30th, 21.8; maximum in sun on the 9th, 101.2; minimum on the grass on the 30th, 19.5. Warmest day, the 2nd; coldest day, 30th. Mean temperature of air at 9 A.M., 41.1. Mean temperature of soil 1 foot deep, 44.3. Number of nights below 32°,



in shade eleven, on grass nineteen. Total duration of sunshine, 41·8 hours, or 16 per cent. of possible duration. We had thirteen sunless days. Sunshine is very deficient, being less than two-thirds the average of the past three years. Total rainfall, 0·88 inch. Maximum fall in twenty-four hours on the 30th, 0·23 inch. Rain fell on twelve days. The wind has blown from all points. Out of sixty observations, fourteen were calms. Average velocity, 9·8 miles per hour; exceeded 400 miles on four days; fell short of 100 miles on seven days. November is chiefly remarkable for its small rainfall, which is barely more than half that of any November in the last nine years. (The approximate average rainfall for November is 1·97). This making the sixth dry month this year. The total fall since January is 17·86 inch. Temperature about the average, being above in the beginning and below in the latter part of the month."

— ROYAL CALEDONIAN HORTICULTURAL SOCIETY—PROPOSED WINTER SHOW.—The annual meeting of this Society was held in Edinburgh, December 4th, Mr. Downie presiding. Mr. P. Neil Fraser, Treasurer, submitted an abstract of the accounts for the year ending 30th November last, from which it appeared that the income had amounted to £1551 and the expenditure to £1491, showing a surplus revenue of £60. The receipts included £469 from members' subscriptions, and £1008 from the drawings at the spring, summer, and autumn shows, while the expenditure in connection with the shows was £633, and in prize money £753. On the 30th November the funds amounted to £1249, an increase of £43 as compared with last year. The report was considered very satisfactory, and on the motion of Mr. Dunn, seconded by Mr. Lamont, was unanimously adopted. Office-bearers were then proposed and elected as follows:—President, the Marquis of Lothian, in room of the late Duke of Buccleuch; Vice-President, the Duke of Buccleuch, in place of Lord Balfour of Burleigh; Members of Council, Councillor Clapperton, and Mr. John McKinnon, Melville Castle Gardens; Secretary, Mr. John Stewart; Treasurer, Mr. Neil Fraser; and Auditor, Mr. J. Turnbull Smith, C.A. The Chairman, in proposing that a Winter Chrysanthemum Show should be held by the Society, said that winter shows were held in various places throughout the country, and had proved very successful. Mr. Dunn Dalkeith, said he thought they could afford at least to try the experiment, and with an open winter like that of last year there was little fear but that it would be successful. They would, of course, include autumn fruit and plants in the show. He moved that the Council be empowered to carry out the necessary arrangements for holding a winter show next year. It having been stated, in reply to a question, that the last winter show under the auspices of the Society took place about sixteen or eighteen years ago, Mr. Dunn's motion was carried unanimously.

### CHRYSANTHEMUMS.

JEANNE D'ARC AND MADAME MADELINE TEZIER.—As received in this country from the continent these are undoubtedly the same, but the variety is not very constant either in shape or colour, and this may possibly account for the two names. "T. H." may safely dispel his fears as to Sir Beauchamp Seymour being identical with any old variety; it is quite distinct, and a seedling raised in this country by Mr. James Salter. I should not like to see Bendigo discarded in haste. It certainly ought not to be shown as a distinct variety with Mabel Ward; still the variety is a different sport, and I think another season will show it to be superior in colour and in petal if we give it a fair trial. If a sport shows superiority it deserves to replace the inferior one, as in the case of Mr. Bunn and Golden Beverley; but this should be thoroughly tested before being sent out, and simply sent out as an improved strain, unless of course there is distinctness enough to perpetuate both, as in the case of Golden Empress and Lord Alcester.

Glancing at Mr. Murphy's queries takes my memory back to the lessons Mr. M. wanted us to learn of the success of late-struck plants as compared with early-struck ones. His experiments on this point seem to have ended in failure, as the Elaines he speaks of have not come to the perfection he evidently desired. Elaine, like most other Japanese varieties, will produce fine blooms from late-struck cuttings if they are skillfully treated; but for the majority of ordinary growers early-struck plants will prove the best if they wish to avoid "eyes." There is only one strain of Elaine, unless it is the improved form named Mrs. Marsham, and neither of these under proper treatment should produce "eyes" instead of florets in the centre.

I do not quite follow Mr. Murphy's remarks on reflexed Chrysanthemums. La Neige in the ordinary way of growing is a hybrid Pompon; it might make a small reflexed flower if grown strongly, so would Mlle. Martbe and one or two other Pompons, but they are better in their proper section. Mrs. Forsyth, or White Christine, is looked upon as one of the best types of reflexed Chrysanthemums, and it will be a long time before those old favourites the Christines are surpassed. Sœur Melanie is not a reflexed flower, but what might be styled a Japanese Pompon or hybrid; La Vierge is a very beautiful reflexed flower, but early; Lady Selborne

is certainly not a reflexed variety. The best varieties of reflexed flowers are the Christines, Annie Salter, Dr. Sharpe, Emperor of China, King of the Crimson, Felicity, Cloth of Gold, and Chevalier Damage when it does not incurve.—N. DAVIS, *Camberwell*.

WE send you a bloom of Madame Madeline Tezier as we received it from Bouchardat. It is quite different from Jeanne d'Arc. It opens slightly incurved, but soon goes back, and we have classed it with reflexed flowers such as Christine. In all the catalogues it is a synonym of Jeanne d'Arc, which is evidently a mistake, as you will see from the enclosed leaf cut from a French catalogue. The bloom sent is evidently 833 (Mademoiselle Madeline Tezier) in the catalogue, totally distinct from 816 (Jeanne d'Arc); 833 has the appearance of a Christine style of flower, but will be much larger than that variety. There is a Madame Auguste Tezier, but that is a Japanese variety.—JOHN LAING, *Forest Hill*.

[The bloom received from Mr. Laing has much the appearance of a reflexed variety and is quite distinct in that state from Jeanne d'Arc when well grown. In the catalogue sent Mademoiselle Madeline Tezier is described as "very large and very full . . . perfectly imbricated . . . pure snow white." Jeanne d'Arc is described as having "a very large flower, snow white, with the reverse of the petals lilac." Mr. Laing's bloom is certainly not "very large," nor at all incurved, and the outer florets have a slight lilac tint.

In answer to the inquiries of "T. H., *Bristol*," page 501, regarding the distinctness of the two above-named Chrysanthemums, I may say that until a few days since I thought them identical. The plant that produced the bloom of Jeanne d'Arc, which was figured in the Journal, I had from Messrs. T. Jackson & Sons, Kingston. About the same time last spring I had plants of Madame Madeline Tezier from another place. These also produced blooms similar in character to Jeanne d'Arc; in fact, they were in all cases exact counterparts of each other in style of growth, colour of foliage, shape of flower and colour of the same, and as the one named Jeanne d'Arc corresponded with what I had previously seen under that name, I discarded the name of Madame M. Tezier and called all the plants by the former name.

A few days since Messrs. J. Laing & Co., Forest Hill, sent me a bloom of their Madame Madeline Tezier, which is entirely different from the one I previously had. It answers quite the descriptions in colour given by "T. H.," which is pure white, excepting that the bottom rows of florets have a faint tinge of colour; it is also quite different in shape from Jeanne d'Arc. Thus in my mind there are two distinct varieties in substance as well as name.—E. MOLYNEUX, *Swanmore Park*.

BENDIGO AND MABEL WARD.—I am very glad to see the merits of this so-called Chrysanthemum Bendigo discussed in the pages of your valuable Journal, as doubtless many others are, in view of having the matter cleared up, so briefly give my experience of Bendigo.

Having through the generosity of a friend received a rooted cutting last March, which was potted and grown with several other sorts, including Mabel Ward (the last-named I have grown since it was first sent out), all the plants were treated the same in every way up to the time of flowering, both Mabel Ward and Bendigo carrying three blooms each, and the flowers were from terminals, so that it will be seen that it was a fair trial to start with. The result was I felt somewhat disappointed, for as the blooms commenced expanding they really looked identical with each other, but when the flowers became fully developed the petals of Bendigo appeared rather broader than Mabel Ward, but I fail to mark any further distinction than the above-named. So much they were alike in other ways that I did not think it would be a safe policy to place both on one stand when exhibiting at the Northampton Show on the 19th and 20th ult. Perhaps others who have tried it will give their experience, so that the whole affair may get well ventilated, for such things as this cause much confusion, and especially with young beginners.—W. A. WALTER, *Lillingstone House, near Buckingham*.

### MUSCAT HAMBURGH.

In response to the invitations given at page 387 respecting our treatment of the above-named Grape, I have much pleasure in stating that it is precisely the same as that which is generally accorded to Black Hamburgh, with this difference, that when in flower we dust the bunches twice daily with a camel's-hair brush for the purpose of ensuring a good "set," or, in other words, fertilisation. I may also further add that we do not, as in the case of Black Hamburghs and other free "setting" varieties, content ourselves with one thinning-out of the berries; we rather prefer to accomplish the work of thinning by examining the bunches twice or three times, always cutting out the smallest berries. By adopting the above plan we rarely fail to secure well-shaped bunches of this very richly flavoured and high-class Grape.—J. HORSEFIELD, *Heytesbury*.

### THE CAUSE OF MILDEW ON ROSES.

THIS important subject, raised by your correspondent Mr. J. C. Clayton on page 435, is worthy of every consideration. I consider the remark made by "C. W.," that mildew is prevalent in cold wet summers, perfectly correct, for a low temperature with the atmosphere saturated with moisture is a sure cause. But this is by no means the only cause, and if we experienced many summers like the one just passed mildew would be equally as prevalent. Roses generally have suffered more from



this terrible disease this season than for some years past. There can be no question that the plants suffered at their roots by drought during the hot dry summer weather which we have had. For some years I have been interested in the cause and prevention of mildew, and this season I have made two or three journeys and have conducted a few experiments at home for the purpose of fully testing previous convictions. From past observations, and if I have judged rightly this year, plants growing upon heavy land with a subsoil of clay have been attacked worse than those upon lighter and more porous soils. Heavy soils during hot dry weather become so thoroughly baked that they crack, and the moisture is evaporated to a much more serious extent than can possibly be the case on lighter soils. Dryness at the roots is a certain cause of mildew, and how this can be prevented without an enormous amount of labour I am not in a position to detail. Sulphur and all the mildew annihilators would prove of no avail in arresting its progress or freeing the plants as long as the cause of the mischief is in a deficiency of moisture in the soil.

That mildew can be prevented by those who grow Roses on a limited scale, even on heavy land during such seasons as the past, I have proved. The surface of the soil should be stirred frequently until a good portion is reduced to dust, which will prevent cracking. A good soaking of water and the surface well mulched afterwards with manure or other material to prevent evaporation has proved effectual when the cause has been drought. If mildew has appeared before this remedy has been applied, that existing upon the foliage of the plants should be destroyed by syringing thoroughly with a solution of softsoap—1 ounce to the gallon of water, in which has been stirred a good handful of sulphur.

Not only do Roses suffer from mildew on tenacious soils during the prevalence of very hot dry weather, but they are attacked when seasons prove the opposite. I have seen plants on several occasions badly infested during cold wet summers when it was utterly impossible to find a speck on plants growing in light sandy soil, which proves conclusively that a superabundance of cold and moisture is also a sure cause of mildew. When plants suffer from drought water can be applied and the disease destroyed, but we have no control over the atmosphere and the moisture it contains, therefore we have no chance left us of stamping it out during such seasons.

I do not contend that Roses growing upon light or moderately light soils are proof against the attacks of mildew, for such is not the case, for I have seen plants as badly affected in low, cold, wet districts during bad seasons as on heavy soils. Perfect drainage is essential, but some plan that would amount to overdraining the beds and borders has been suggested to me, but as far as I am capable of judging would not prove beneficial, for the remedy would tell materially against the plants in favourable seasons. It is not difficult to determine the cause of mildew, and indoor plants can be grown free from it and an attack can be prevented by judicious management, but outside the case is different. At the present time I have light soil to deal with, resting on a formation of red sandstone, and in the majority of seasons the Roses have suffered but little from mildew, except in one place where Roses are planted, and the position and its surroundings are the chief cause which to some extent have been removed, and which will, I feel sure, prove beneficial to the plants. This season mildew made its appearance, and as soon as it was observed the surface soil was drawn back, a thorough soaking of water given towards evening, and the soil returned in as dry a condition as possible. After this the plants were syringed with the solution advised above and the mildew disappeared.

Mildew is not brought into existence only by the two causes pointed out. I have proved others to be instrumental in bringing about an attack; for instance, unsuitable soil, inefficient drainage, the soil rendered sour by too freely using liquid manure will do this. Again, positions may be selected for Roses that are unsuitable, and the surroundings may be of such a nature to exclude full sunshine and prevent a free circulation of air amongst the plants. Roses growing under such circumstances are very liable to be attacked whether the soil is light or loamy. It will then be seen that one of many causes, or a combination, may operate in the same direction to bring about a check and predispose the plants to an attack of this parasite.—WM. BARDNEY.

#### IN SCOTLAND.

FROM Bridge of Allan little more than an hour's journey conveys the visitor to Crieff, one of the most beautiful and horticulturally interesting districts in the magnificently wooded and charmingly diversified county of Perthshire. To a stranger from the south perhaps nothing is more remarkable than the richness of vegetation and grandly wooded estates of this portion of Scotland, which appears to be the natural home of forest trees, for in no other county of Great Britain are there so many handsomely developed specimens. Oaks, Beeches, and Limes attain gigantic dimensions, while Conifers can there be seen of noble proportions, and in that vigorous healthy condition which in England is unfortunately too rare. This imparts to the scenery a most distinctive character, which contrasts very strongly with the barren grandeur of the neighbouring mountainous districts. There is something imposingly majestic in the appearance of a finely developed tree which must be appreciated by all lovers of Nature. "It is no exaggerated praise to call a tree the grandest and most beautiful of all the productions of the earth," wrote Gilpin many years ago, and probably there are few who have not observed some of these giants of the forest with a feeling closely akin to awe. We may have the greatest admiration for the exquisite floral symmetry of the occupants of our plant houses and gardens, but in the

forest we approach a sublimity which no other form of vegetation can possess.

Perthshire abounds in finely wooded parks, plantations, and forests, the total space under wood reaching close upon 100,000 acres, being surpassed only by Aberdeen with 103,000 acres, and Inverness with 162,000 acres. Planting has been carried out in a most liberal and judicious manner on most of the estates, and large tracts of what was once barren land are now occupied with Larches and other timber, which are rapidly becoming very valuable. The Larch is peculiarly at home in Perthshire, for it was to Dunkeld that probably the first plants introduced to Scotland were sent, being forwarded, Sir Thomas Dick Lauder tells us, to the Duke of Athole in 1727, and "the plants having arrived with some Orange trees and a number of other Italian strangers, they were all treated in the same way, and were subjected to the suffocation of a hothouse. The unfortunate mountaineers languished, and to all appearance died, and were thrown out of the garden into a heap of rubbish," where they ultimately recovered and grew strongly. Subsequently large districts were devoted to the Larch, and the value of the land greatly increased. In a very interesting and able work on "The Woods, Forests, and Estates of Perthshire," by Mr. Thomas Hunter, is given the following estimate of the present value of the land under wood in this county, which will convey an idea of the advantages of planting judiciously carried out. "According to the latest returns there are 94,563 acres of plantations, these including both young and old wood, as it is impossible to ascertain from the returns the relative proportions and value of each. We believe, however, we are taking a very moderate estimate when we say that the woods all over the county should average £35 per acre; this would make the total value nearly three millions and a half."

But the chief object of my journey to Crieff was to see some of the gardens in the neighbourhood, and though the time at my disposal only enabled me to visit two—namely, Drummond Castle and Abercairny, I was well satisfied with the day's occupation.

#### DRUMMOND CASTLE.

In extent and beauty the Drummond estate is one of the finest in Scotland, and the fame of the princely establishment has spread far into other lands. The greater portion of the most picturesque districts of the county is included in this estate, comprising the celebrated Trossachs, several lochs, the villages of Callander and St. Fillans, with the major part of the town of Crieff. The greatest breadth is upwards of twenty miles, and the total acreage about 72,000 acres, 62,000 being hill land, or occupied with plantations, and the remaining portion is arable land. This magnificent property has been in the possession of the Drummond family for something like 800 years, as it was shortly after William the Conqueror ascended the English throne that the foundation of the fortunes of the Drummond family was laid in Scotland. It is recorded that when Edgar Atheling and his sister Margaret quitted England after William the First had commenced his tyrannical reign, they set sail for Hungary, being accompanied by a number of nobles who were personally attached to the prince, amongst whom was a Hungarian of high descent named Maurice. To this gentleman the conduct of the vessel was entrusted, and by his care the safety of the party was ensured, for being driven out of their course by adverse winds, and endangered by severe storms, they were at last compelled to put ashore in the Firth of Forth at a point now termed St. Margaret's Hope. The reigning king of Scotland at that time was Malcom Canmore, who had his court at Dunfermline, and thither the royal refugees and their attendants were invited, and treated with the greatest hospitality. Ultimately Edgar's sister Margaret became the wife of Malcom and the Queen of Scotland, grants of land being bestowed upon the nobles. One of the most favoured of these was the Maurice already mentioned, who was the founder of the Drummond family, and being granted several estates, he devoted himself to the service of King Malcom, and died fighting for his interests. The name Drummond has been variously derived from the Greek, Latin, and Celtic, but all appear to have a similar origin, pointing to the service rendered by Maurice as captain of Edgar's ship. Since then there has been a long succession of thanes and lords, many of whom have been accomplished men, and have taken a prominent part in the history of their times and the property is at present in the possession of Baroness Willoughby d'Eresby, who has gained that title by marriage.

Drummond Castle is about four miles from Crieff, about half this distance being a magnificent avenue of Beeches and Limes, such as is scarcely equalled in Great Britain, and indeed has been favourably compared with some of the most celebrated avenues of a similar kind in Europe generally. At the entrance to the Park there is a road to the left and one to the right, the former traversing the estate and the latter being the direct communication with the Castle. This is also a remarkable avenue of Beeches, its appearance being rendered still more notable by its narrowness, the width not exceeding 15 feet, except where there are sidings for carriages or travellers going in opposite directions. These trees are mostly of considerable age with massive stems, and their branches closely interlacing overhead form an extraordinary and beautiful arboreal tunnel. The road for the greater part of its length is a steep ascent. As we approach the Castle some magnificent views are obtained in a northerly direction, first of the splendidly wooded valley in which gleams the extensive lake, then of Crieff, which forms an interesting feature of the landscape, and lastly of the splendid background of the Grampians, a fitting finish to such a superb picture, the whole glowing under a bright September sun. But we cannot stay to admire this charming scene; the noble and massive Castle is reached, and in another minute we are standing upon the terrace overlooking the celebrated and magnificent



## FLOWER GARDEN.

Much as I had heard of the beauties of this garden it came upon me as a great surprise. The view from the terrace is a most impressive one, and is fairly portrayed in the accompanying woodcut (fig. 89), but both the photographer's and the engraver's arts are inadequate to the exact reproduction of its beauties. The one feature which immediately takes the attention is the bold patches of colours, not in diminutive and complicated geometrical patterns, but in oblong or diagonal blocks of considerable size, but so arranged that the whole constitutes a most symmetrical and harmonious design. It is only, however, from the upper terrace or from the tower near the entrance to the Castle that the attractions of the gardens can be fully perceived and appreciated, for in descending to the level we lose the general symmetry. The flower garden comprises about 10 acres, of an oblong form, protected on the north side by terraces which rise some 40 or 50 feet above it, and on the south by a dense hedge of Portugal Laurels and Bays, and beyond this the Park rises to a good height, through which facing the terrace a handsome vista has been cut, as is seen in the centre of the figure. The general plan of the garden is a combination of the French, Dutch, and Italian styles, and was laid out early in the 17th century under the direction of John the second Earl of Perth, who is reported

contrast with this were some broad marginal bands of *Dactylis glomerata* elegantissima, the prettily variegated foliage of which contrasted most effectively with the Dahlia. *Ageratum* Lady Jane, a very bright blue, freely flowering, and dwarf variety, is similarly employed in large quantities, *Myosotis azurea*, *Mimulus Harrisoni*, and the bright clear yellow *Calceolaria amplexicaulis* constitute the principal of the other plants, which are grown by thousands for massing in the situation named. Nearer the terrace were mixed beds of *Galtonias* and single Dahlias, which had a beautiful effect, the white flowers of the former, which grew very strongly, rising above and contrasting with the rich dark scarlet Dahlia blooms. Tuberous *Begonias* thrive admirably, and are so highly appreciated that they will be more largely grown in future seasons. Some fine beds of *Gladioli* were very attractive, and similarly beautiful were the beds of *Anemone japonica alba*. It will thus be seen that the beauty of the garden rests upon the massing of effective colours, and the result is perfectly satisfactory and unique.

A large portion of the space between the walks is occupied with extensive groups of variegated shrubs of all kinds, golden and silver Conifers being numerous represented. These are very beautiful and appear to colour admirably, some of the golden Yews being especially notable in



FIG. 89.—FLOWER GARDEN AT DRUMMOND CASTLE.

to have been an extremely learned and accomplished gentleman, and who spent most of his younger days in France. Two broad grass paths extend across the garden diagonally from opposite corners, intersecting in the centre, where an old and remarkable sundial with fifty faces is placed. Along each side of these turf paths, which are kept as neat as the closest attention can render them, and which look at a distance more like rich green velvet than grass, are the principal flower beds, oblong in form, and in some cases 10 or 12 feet long, occupied with bold masses of herbaceous plants, such as *Aconitums*, *Phloxes*, *Golden Rod*, *Lythrums*, and others of similar character, each bed being devoted to one kind only. Then near the central walk and at opposite corners of the garden are corresponding borders of ordinary bedding plants, mostly of simple form—oblongs, squares, diamonds, or circles, and these furnish a wealth of rich colours, which at the time of my visit were at their best. Very remarkable were some grand beds of a dwarf Dahlia, which formed masses of glowing scarlet, such as could be employed in few gardens with the same effect as it is at Drummond. It is very dwarf and compact in habit, being about 18 inches to 2 feet in height, and produces its large rich scarlet blooms of the show type in great profusion. Mr. John Robb, the experienced gardener in charge, sets a high value on this variety, and grows annually about 3000 plants of it. The variety, it is said, originated in the district, and has received the expressive name of *Rising Sun*. In

this respect. Another important feature is formed by the conical or cylindrical specimens of variegated Oaks, Box, Irish Yews, Hollies, and Thuias, which are kept very closely trimmed, and are so regular in form and height that they more resemble vegetable columns than trees. They are, however, well in accord with the general character of the garden, as are also the numerous statues suitably placed in the shrub groups, and serve to enlighten the appearance considerably.

The terrace walls, which cannot be seen in our engraving, are well clothed with climbing plants, amongst which the *Tropæolums* are particularly remarkable. The charming *T. speciosum* is exceptionally luxuriant, and would gladden the eyes of numbers of its admirers who try in vain to ensure its success in England. This plant is said to have first flowered at Drummond, and the walls during the summer months are festooned with its abundant scarlet blooms. *T. pentaphyllum* also grows and flowers freely, together with a good and varied collection of *Clematises*, *Jasminums*, *Lophospermums*, *Manrandyas*, *Rhodochitons*, and many others. These are trained in perpendicular lines, so that the walls appear at a distance as if striped from base to summit with varied shades of scarlet, crimson, purple, blue, &c.

The kitchen garden occupies about four acres of ground beyond the flower garden, and sloping to the south. The upper wall has a fine aspect, well suited for fruit trees, and it is intended to plant a number of Peach



and Nectarine trees against it. The glass is not very extensive, but a fine range has been erected in recent years. It is a three-quarter span, with the longer roof facing the south, and is 150 feet long in three divisions, 22 feet wide. Two of these are planted with Vines, the remaining one being at present devoted to plants. The Vines are young, but very promising, and Duke of Buccleuch is grown extremely well, the bunches and berries large and finely coloured. Golden Hamburgh, Madresfield Court, and Muscat of Alexandria are also grown very successfully. The outer garden is thoroughly well cropped, and the whole appearance of the garden affords abundant evidence of the most careful superintendence.

The Park abounds in majestic Oaks and Beeches, and a visitor would be well rewarded by a ramble amongst these grand old trees. Within walking distance, too, is the Turlum Hill, which rises to the height of 1200 feet above sea level, and is densely covered with timber to the summit; it is, indeed, reputed to be the highest and finest wooded hill in Scotland. From the top of this hill a glorious view can be obtained of the varied Perthshire scenery, and all who have the opportunity will find their time pleasantly occupied in the journey.—LEWIS CASTLE.

#### CYCLAMEN AT MESSRS. SUTTON'S READING NURSERIES

HAVING an hour to spare when recently at Reading, I concluded it would be most profitably spent at Messrs. Sutton's seed-growing establishment. November is really the worst month in the year to visit this renowned place, the Gloxinias and Tuberous-rooted Begonias being over and stored away, while it is yet too early to see the Chinese Primulas and Cyclamen at their best. The former were looking remarkably promising, and include several novelties, which I should say will prove valuable additions to the different strains which the Messrs. Suttons after several years' intelligent attention have brought to such marked perfection. The Fern-leaf varieties in particular are now much neater in growth than formerly, and the several varieties produce flowers almost if not quite equal to the ordinary types.

It was the Cyclamens, however, that I went principally to see, and about these I wish to pen a few remarks. A grander lot of plants it would be difficult to find. Several houses are filled with them, the display being maintained from the beginning of November until April. Many of the strongest plants are in 6-inch pots, and would apparently pay for another shift, as the foliage extends far beyond the rim of the pots, yet the plants are not twelve months old. They are calculated, and with good reason, to each produce from 200 to 300 fine blooms. The flowers of each strain are very fine, are borne on long and stout stems well above the foliage, and the giant strains are evidently as floriferous as those producing smaller flowers. The colours are bright and well diversified, and an equally good variety is observable in the beautiful foliage, which has been very much improved of late. Plenty of the leaves measure 4 inches across, and are as prettily veined and marbled as Begonias of the Rex type. One novelty is named Sutton's Butterfly, and should become a great favourite among Cyclamen growers. It evidently possesses a good constitution, has pretty foliage, and produces its singularly pretty white flowers most freely. Each flower when about three-parts expanded much resembles a butterfly on the point of alighting on the plant; hence the change of name, this variety being originally named Miss Lilian Cox, and as such was awarded a first-class certificate by the Royal Horticultural Society.

The Cyclamen seed is principally sown early in November in pans of fine sandy soil. It is not, as usually happens, placed in heat at once, but the pans are stood in a cool house till the end of December, by which time the seeds have swelled considerably, and when placed in a brisk heat soon germinate strongly. The seedlings are pricked off into thumb-pots, and are gradually shifted into the pots in which they are to flower, these being either 4-inch, 5-inch, or 6-inch pots, according to their vigour. The compost employed consists of three-parts good turfy loam to one part of well-rotted manure and sand. From the first the plants are kept carefully shaded from bright sunshine, never suffer from want of water, and are kept steadily growing, but not either in a dry or strong heat—a moist bottom and an intermediate temperature best suiting them. They are never mixed with other plants, and insects of no kind are allowed to effect a lodgment. They well repay for all the trouble taken with them, and well known and popular as the Persian Cyclamen is become, I yet doubt if the majority of gardeners and amateurs scarcely realise what a wonderful display can be made with the seedlings resulting from one packet of seed.—W. F.

#### NOTES ON NEW CHRYSANTHEMUMS.

NEW VARIETIES.—When visiting the various Chrysanthemum shows recently held, I made notes of several new varieties which, in some instances, I thought acquisitions to an already large family, and of which I will give the names and descriptions. Taking the incurved section first, I was disappointed in not being able to find several "new" varieties that came out with a great flourish, and which have probably been consigned to the rubbish heap. Except Jeanne d'Arc and Lord Alcester there was nothing new to record. These two varieties have proved what they were represented to be, really good additions. Both could be found in almost every stand; the former variety, through its blooming rather early, was not seen generally in such perfection as the latter variety, for in many cases the best

blooms were over, which seems to come to time without much trouble. The best blooms of Jeanne d'Arc which I saw were in Mr. Herrin's stand at the Aquarium Show.

Among the Japanese varieties the best I noted was M. Astorg a pure white flower of the Elaine type, excepting that the florets were longer, broader, and not so thickly placed, which I think an improvement. Mr. Wills showed some grand blooms of this really superb variety at Southampton.

Val d'Audorre, for which Messrs. Jackson & Son obtained a certificate at Kingston, and which Mr. Lync also showed well at the same exhibition, is a bold flower of the Dr. Macary type, the florets being longer, and the colour is a rich orange red. It is one of the best of the family of Japanese varieties.

Duchess of Albany is a full flower of a bronzy hue, having flat florets. This was numerously represented.

Fanny Richards is a variety I saw at Kingston. The name is new to me, but the flower looked much like a pale bloom of Madame B. Rendatler or Curiosity. These I presume are identical.

Baby.—What a name! A seedling shown at Kingston, with small reddish-yellow blooms, not likely to prove a great acquisition for show purposes on account of its being so small.

Beauté des Jardins is a new variety; awarded a first-class certificate at the Kingston Show, and exhibited by Messrs. T. Jackson & Sons. This is a medium-sized flower of a rich magenta purple, which will, I have no doubt, prove a grand variety for decoration.

Carmen.—This was shown by Messrs. J. Laing & Co. at the Crystal Palace, and obtained a first-class certificate. It is a variety producing blooms freely, which are of a deep rose colour with flat-shaped florets.

Cullingfordii.—This variety was sent out by Messrs. Cannell and Sons, and obtained a first-class certificate wherever it was staged. Is the brightest-coloured variety of any class we have. It is a scarlet, having a glossy dark shade suffused over the brighter colour. It is sent out as a reflexed variety, and it certainly is the grandest of all colours we have for any purpose.

The Anemone Japanese varieties are more numerous in new varieties than any of the other sections, considering the few varieties obtained till recently. As I described them in a former note in the Journal, I will now pass them by with the remark that they have only to be seen to be admired. How strange it is there are no new varieties of reflexed brought out, with the exception of George Stevens, which has not made much headway as yet as a first-class variety. I know of nothing new in the reflexed division.

Amongst Pompons the newest variety is Nelly Rainford, a lovely buff sport from Rosinaute, sent out by Mr. Davis, which is fine for all purposes.

STAGING POMPON CHRYSANTHEMUMS.—Now that the numerous Chrysanthemum shows are over for this season, and committees will soon be discussing the arrangements for another year, I think it would be well if they would take into consideration the present way that Pompons and Anemone Pompons are staged. I think that all such matters should be clearly stated in the prize lists. Often the conditions are much too vague. Take for instance the following—"Six bunches of Pompons with foliage, not less than three blooms in a bunch." Now perhaps some exhibitor would stage, say, eight, or perhaps twelve blooms in a bunch, while others would stage three blooms. In awarding the prizes all good judges would give the prize to the three-bloom advocates, providing they had good specimens of the respective varieties. Of course this decision would not please all, and what I would suggest is that the schedule should be so clearly worded that no cause for complaint can arise through having unequal numbers. Suppose the wording was thus—"Twelve bunches of Pompons, distinct, three flowers in each bunch," each society could fix their own number of bunches, varieties, &c.

CHRYSANTHEMUM LORD ALCESTER.—This very fine incurved variety has again proved itself to be one of the best that has been introduced of late years. In no instance have I heard any complaints about it running back to its parent. In all cases that I have seen it, it has been thoroughly distinct. I noticed that it was in nearly all the stands of cut blooms at most of the shows held this season. After such an ordeal as it has gone through, and that without complaint, I think no words that I can add are too much in praise of this grand addition to our not too numerous really good incurved varieties. The plant is of strong growth, neat habit, and produces flowers in abundance, of such noble proportions, combined with its delicate shade of yellow or primrose, that anyone has only to once see it and admire it always. Its free-growing capabilities render it well adapted to growing as a specimen plant, judging from the one Mr. Wills



staged amongst his handsome group of specimens at the late Southampton Show. As the majority of Chrysanthemums are not suited for culture as specimen plants, this variety is all the more welcome. I commend it strongly to all lovers of Chrysanthemums who grow for any purpose, be it for cut blooms or home decoration.—E. MOLYNEUX.

#### MUSCATS GROWN IN A COLD HOUSE.

WHEN on a visit to Clifton a short time ago I had the pleasure of seeing one of the most perfect examples of young Muscats and other late varieties of Vines cultivated without artificial heat that I ever remember to have seen. This was in the recently formed nursery and market garden of Mr. V. Down of Clifton, to whose skilful cultivation the Clifton Horticultural Society was a few years ago largely indebted for many of the magnificent examples of fruit, specimen plants, and flowers for which it then was and still is so justly noted. This nursery is situated in the village of Failand, about four miles W. or S.W. of Clifton, on an elevated and exposed plateau about six or eight miles from the Bristol Channel, the briny softening breezes from which tend no doubt in some degree to temper the harsh and violent blasts to which this locality would otherwise be subjected. The surface soil is a strong adhesive loam apparently composed largely of the disintegrated mountain limestone peculiar to the neighbourhood, with a slight admixture of the old red sandstone, and in some places its bright colour is also clearly indicative of the presence of iron. It varies in depth from 6 inches to 2 feet, and rests upon the limestone rock, from which it is chiefly formed. I mention these matters because I venture to think, after making due allowance for the undoubted skill and ability with which these Vines have been cultivated, their present satisfactory condition is in no inconsiderable degree due to the favourable soil and situation. I am further supported in this opinion, not only by the magnificent examples of Grapes which have been produced for years past at Ashton Court, which is near and similarly situated, under the skilful management of Mr. Dodds, and more recently by that of Mr. Austin, but also by the great and invariable excellence of the Grapes and hardy fruits exhibited at the Clifton shows by the gardeners in the neighbourhood, who are similarly situated in respect to soil and position.

The house in which these Vines are grown is a rather flat-roofed lean-to structure, about 60 feet long and 10 or 12 feet wide, facing S. or nearly so. Although provision has been made for heating it with hot water by means of pipes arranged along the front, yet I understood from Mr. Down that the apparatus had not been used only on a few rare occasions. In describing the condition of the Vines I do not wish to point out prominently their unusual strength, because I think that great strength in young Vines is frequently synonymous with grossness and ill-elaborated sap, or, in other words, the presence of a superabundance of pith and water; but in this case it is great strength combined with perfect development and maturation of foliage, wood, and bud.

In preparing the border, which at present is confined to the inside of the house, there was no necessity for artificial drainage or any expensive foundation, because the loose crust of the rock and the numerous clefts which pierce it freely in a perpendicular direction render such provision needless. The border is simply formed of the natural soil without the addition of any artificial and with very little animal or vegetable manures. They were planted in July, 1883, and were wholly or chiefly struck from eyes the same year. They were cut back last autumn to within about 2 feet from the ground. At the present time they extend nearly to the top of the rafters, at which point they have been stopped. With one or two exceptions they are so strong, so uniform, so hard and short-jointed, so massive, so thoroughly developed and matured, that I venture to think as well-built Vines of eighteen months' growth they have seldom been excelled. They show evident signs of careful and skilful cultivation; and although the border has not been converted into a mixen, the convenient position of a liquid manure and soapsuds tank as well as their appearance, although alas! so young, both strongly suggest that they have not been pure water drinkers.

Now arises the important question—the one for which I have chiefly ventured to pen these lines, for doing which without first asking Mr. Down's permission I must beg to apologise—is, If young Vines of Muscat, Gros, Colman, Lady Downe's, and other late varieties can be so exceptionally well grown and so perfectly matured and consolidated without the aid of artificial heat in ordinary seasons, cannot fruit of the same varieties also be produced and ripened of the finest quality in similar seasons and positions by the same means at much less expense in fuel than is generally incurred? In conclusion, I most earnestly wish, as I am sure all who know Mr. Down also wish, him, great success in his new undertaking; and if his young Vines are not entitled to wear the distinctive badge of Good Templarism, I doubt not they will ere long if cultivated with the same skill as hitherto, be fully entitled to bear the blue badge of success at many provincial and metropolitan exhibitions.—VISITOR.

#### INDIGOFERA GERARDIANA.

THERE are few gardens nowadays even of small dimensions without a wall against which could be grown plants that are reputed tender in the open ground, or are too rare or beautiful to be risked in such situations without a knowledge of their capabilities for standing cold in an average English winter. The fancy for trying plants outside from other than climates nearly analogous to our own has past, but the experience gained

show us that a vast number with the slight protection afforded by a wall pass the winter unscathed, and which would certainly be destroyed in the open, or even as standards in sheltered places. An instance of the cold-enduring capacity of a plant may be given in that of *Choisya ternata*, which we have seen in the stove doing fairly well. It also makes a good greenhouse plant, a very choice wall plant, and stands like an evergreen Oak in the open ground. The same in a lesser degree applies to the handsome *Embothrium coccineum*, and also to the *Mutisias*, all of which may stand well against a warm south wall, and such places are not hard to find in gardens where houses are numerous. The fronts of which, generally of stone or brick, may be utilised in this way by covering bare spaces and giving more room in the cool houses to plants of a more tender character, necessitating as it does no more trouble in covering the walls with good bright flowering plants than with those grown only for their foliage.

*Indigofera Gerardiana* (fig. 90), distributed both under the names



Fig. 90.—*Indigofera Gerardiana*.

of *I. coronillæfolia* and *I. floribunda*—the latter, however, being a most appropriate, and partly descriptive one—is also one of those ill-used shrubs that will bid defiance to a severe winter when sheltered by a wall; and indeed there is little reason why it should not be grown in the open air where the winter must be above the average to affect it radically, especially in the southern counties. It was introduced to this country from the Himalayas over forty years ago, and is notwithstanding very scarce in cultivation, although one of the most beautiful wall shrubs we have seen. Its bears profusely its long racemes of bright rosy red pea-like flowers—a colour almost unique in this class of plants. The branches on which the flowers are borne have all a graceful drooping habit; the leaves pinnate with eight to ten pairs of blunt ovate leaflets, which are very handsome. It flowers in July and August, and is a rapid grower, attaining from 8 to 12 feet in height against a wall.—M. S.

#### THE BEST ROSES.

"A. F. M.," page 475 of "our Journal," regrets that Mr. Mawley did not append a list of Roses having most often won individually to his valuable and very interesting tables. I am inclined to think this was hardly within the scope of his purpose, but the idea is valuable and worth working out. Having been connected with two Rose Associations for the



last eighteen years I am able to give some statistics of the kind from their shows which, to a limited extent, will give the required information. I should premise that in our Associations—under a canon enunciated, I think, originally by Mr. George Paul—the best Rose is taken to be some extra good one of some particular species represented, although the species may be inferior to others less effectively represented—*e.g.*, a marvellous Elouard Morren won at Reigate in 1882, and an equally exceptional Madame Berard at the Brockham Show in 1884, both of which are only on the borderland of good show Roses.

Looking through my lists, which are not complete, I find, as might be expected, Marie Baumann heads the poll, winning at Reigate in 1871 and 1878, and at Brockham in 1872, 1873, and 1881 (five times).

Charles Lefebvre, R., 1872, 1875, and 1881; B., 1869, winning four times. A good second.

Camille de Rohan, B., 1871, 1875, and 1883, being called in this year (1883) La Rosière.

Alfred Colomb, B., 1874 and 1882.

Marie Rady, R., 1876 and 1877; B., 1877. 1877 was evidently a Marie Rady year.

Annie Wood, R., 1873; B., 1884.

All the rest come singly:—La France, R., 1869. Pierre Notting, R., 1870. Baronne de Rothschild, R., 1874. Louis Van Houtte, B., 1876. J. S. Mill, B., 1878. Beauty of Westerham, R., 1879. Duke of Edinburgh, B., 1879. E. Y. Teas, R., 1880. A. K. Williams, B., 1880. Edouard Morren, R., 1882. Pride of Waltham, R., 1883. Etienne Levet, R., 1884.

With regard to Teas and Noisettes my records are so imperfect as hardly to enable a judgment.

Maréchal Niel won at Brockham in 1872, 1878, 1879, and 1880, and I have no notice of Reigate. On the other hand

Souvenir d'Elise won at Reigate in 1875, 1876, and 1879.

Madame Bravy, R., 1880; B., 1873 and 1874.

Gloire de Dijon, R., 1874; B., 1875 and 1877. After which we come to single years:—

Madame Margottin, B., 1869. Souvenir d'un Ami, B., 1876. Niphetos, B., 1881. Madame Lambard, B., 1882. Anna Ollivier, R., 1883. Jean Ducher, R., 1883. Innocente Pirola, R., 1884. Madame Berard, B., 1884. —ALAN CHEALES, *Brockham Vicarage*.

## JAPANESE CHRYSANTHEMUMS FOR EXHIBITION.

WITH pleasure I accede to the request of "T. H., Bristol," page 501, to give him the names of thirty-six varieties of Japanese Chrysanthemums suitable to grow for exhibition, and below I append the names of those I consider good for the purpose. The colours of each can be much better obtained from any Chrysanthemum catalogue than I can describe them.

Madame C. Audiguier  
Meg Merrilees  
Baronne de Prailly  
Fair Maid Guernsey  
Bonle d'Or  
Criterion  
Thunberg  
J. Delaux (F. A. Davis)  
Sarnia  
Golden Dragon  
Comte de Germiny  
Margaret Marrouch  
Mrs. Mabood  
Mlle. Lacroix  
M. Astorg  
M. Burnet  
Japonais  
Hiver Fleuri

Peter the Great  
Val d'Andorre  
Duchess of Albany (Jackson)  
Triomphe de la Rue des Chatelets  
Fanny Bouchard  
Mons. Tarin  
Soleil de Levant  
Mons. Desbriex  
Elaine  
Grandiflorum  
Flamme de Punch  
Madame Berthie Rendatler  
Album Plenum  
M. Ardene  
Triomphe du Nord  
M. Deveille  
Red Gauntlet  
Agrements de la Nature

—E. MOLYNEUX.

## THE INTERNATIONAL FORESTRY EXHIBITION. ESSAY AND REPORT AWARDS.

THE Executive Committee have now issued their list of awards for the best essays and reports on forestry subjects. It is as follows:—

1. On the Formation and Management of Forest Nurseries.—E. P. C. Brace, Les Vaux-Salbris (Loire et Cher), gold medal; Thomas Berwick, 56, North Street, St. Andrews, silver medal.

2. On the Formation and Management of Plantations in Various Sites, Altitudes, and Exposures.—David Cannon, Les Vaux-Salbris (Loire et Cher), France, gold medal; R. E. Hodson, Hollybrooke, Bray, silver medal; Donald Stalker, forester, Kilmun, bronze medal; D. Tait, Owston Park, Doncaster, diploma; J. W. Inglis, Myrtle Bank, Trinity, ditto.

3. On the Present and Prospective Sources of the Timber Supplies of Great Britain, with Statistics of the various Descriptions of Timber imported during the past twenty-five years.—Robert Carrick, Gefle, Sweden, silver medal; P. L. Simmonds, 35, Queen Victoria Street, London, bronze medal.

4. Report, with Specimens, of any Hard Wood likely to supply the place of Boxwood for Wood Engraving.—John R. Jackson, Curator, Museum, Kew, silver medal.

5. On the Afforesting of Mountains and other Waste Lands, with details of the method adopted and the results obtained. To be accompanied with Drawings, Photographs, or Models.—Thomas Milne, Glenburnie, Aberdeen, diploma.

6. On the Effects of Forests on Humidity of Soil and Climate, from personal observations made by the Author in any Country or Locality.—None received.

7. On the Treatment of Coppice and the Utilisation of Branches and Fragments of Forest Produce, with the view of diminishing waste.—G. S. Boulger, 9, Norfolk Terrace, London, gold medal; John Fairley, 20, Ward Street, St. Rollux, Glasgow, bronze medal.

8. On the Growth and Management of Eucalyptus Plantations, and their Economic Uses.—E. P. C. Brace, Les Vaux-Salbris (Loire et Cher), France, silver medal; P. L. Simmonds, 35, Queen Victoria Street, London, bronze medal.

9. On the Best Method of Preventing Erosion of River Banks, with Illustrations.—J. W. Inglis, Myrtle Bank, Trinity, diploma.

10. On the Comparative Advantages of the various Methods of Producing and Harvesting Cinchona Bark, with Specimens.—J. Alexander, Udapussellawa, Ceylon, bronze medal.

11. On the Ravages of Tree and Timber-destroying Insects, with Specimens and Illustrations.—J. Alexander, Udapussellawa, Ceylon, bronze medal.

12. On the Ravages of Molluscs and other Marine Timber-destroying Animals (excluding Insects).—None received.

13.—On the Destructive Influence on Wood of Fungi and other Plants.—None received.

14. On the best Method of Maintaining the Supply of Teak, as regards Price, Size, and Quality, together with the best Substitute for Shipbuilding purposes. Special prize of £50 offered by the Shipbuilders of Glasgow.—W. T. Oldrieve, 1, Stanhope Place, Edinburgh, special prize; J. Nisbet, Deputy Conservator of Forests, British Burmah, silver medal; J. C. Kemp, 86, Hill Street, Garnet Hill, Glasgow, silver medal.

15. On the Utilisation of Forest Produce in the Manufacture of Paper.—G. F. Green, 3, George Yard, Lombard Street, London, E.C., silver medal; P. L. Simmonds, 35, Queen Victoria Street, London, bronze medal.

16. On the Culture of Trees on the Margin of Streams and Lochs in Scotland, with a view to the Preservation of the Banks and the Conservation of Fish. Special prize of £10 10s., offered by J. B. Duncan, Esq., W.S.—Rev. E. Maclean, Glen Urquhart, Inverness, half of special prize, £5 5s.

17. On the Preparation and Use of Wood Pulp. Special prize of £20 offered by the Scottish Paper Makers' Association.—E. F. Cross and E. J. Beavan, Laboratory, 249½, High Holborn, London, special prize of £20; W. J. Stonbill, Ludgate Circus, London, E.C., bronze medal; J. Anderson Reid, Fordland Cottage, Weston, Runcorn, Cheshire, bronze medal.

18. The Manufacture and Use of Charcoal.—A. D. Webster, Llandegai, Bangor, N.W., diploma.

19 and 20. Fuel Plantations (two papers). Management of Coffee Soils (one paper).—No award.

21. Forest Products of Malabar.—Rhodes Morgan, Conservator of Forests, Malabar, India, bronze medal.

22. Humus and the Defertilisation of Forest Soils in India.—No award.

23. On the Vegetation of Western Australia.—A. Milne Robertson, 1, Alloa Road, Roebampton, London, diploma.

24. Witnesses of Primæval Times.—Rev. E. Maclean, Glenurquhart, diploma.

25. Reports on the Forest Productions of our own Crown Colonies or Foreign Countries, accompanied by Specimens.—On the Timber Trade of Kurnup, Assam, by A. J. Mein, Deputy-Conservator of Forests, Assam, diploma.

26. Lacquer.—By Hikorokuro Yoshida, Japan, silver medal.

[It has not been decided whether these essays will be published, as it is not yet known if there will be sufficient funds for the purpose.]

## THE GLADIOLUS AT FONTAINEBLEAU.

THERE are few places which have felt more the change of régime than Fontainebleau. It is still, as ever, the delight of French artists, the home of Rosa Bonheur, and a favourite resort of holiday seekers of the better class; but the château itself is deserted, while the surroundings are those of a military parade ground. It was not so in the days of the Empire, and still less under those of Louis Philippe, by whom it was restored in excellent taste. But this is not the only change. The forest itself suffered frightfully in the winter of 1879-80. Hundreds of thousands of trees were destroyed by either the intense frost or the *verglais* which followed. Immense gaps have been made, and some of the most cherished spots have been sadly disfigured.

The gardens are kept up in the same careful manner in which it was left by my friend Mons. Souchet, and the grouping in what is called the Jardin Anglais was carefully done, giving that air of naturalness which the French, at any rate, associate with our style in opposition to the more formal style of their own country; although, were they to see some of our geometric and carpet beds they would hardly give us the credit which they now do.

But the object of my visit to Fontainebleau was not to see either its forest or château, but to visit the gardens of Messrs. Souillard & Brunelet, the successors of Mons. Souchet and the raisers of the splendid varieties of Gladiolus with which our gardens have been enriched for many years. I knew that the time was somewhat late (September 10th), and that especially this season, when the fine summer had hurried on the bloom, it would be still more difficult to find them in bloom; but yet I know that there are always some to be found, and that even early-flowering varieties will sometimes throw a late bloom. I have had Shakespeare, which generally blooms with me about July 26th, throw a spike in September; and I am glad to say that I was not disappointed, although I did not see them at their best, nor the new varieties which are coming out this season. I saw many that I was anxious to see, and had a most delightful chat upon this grand autumn flower.

The number of Gladioli cultivated by this eminent firm is about the same as that of our great English grower, Mr. Kelway; but the bulk of their culture is at Montreux some distance from Fontainebleau, and I



have never yet visited. There the great number of the older varieties are cultivated, and from thence corms are supplied to all the leading home and foreign houses, for they are exclusively wholesale merchants, and all are supplied through other houses. At Fontainebleau they cultivate the newer varieties, and also those seedlings which they have on trial. Every year the most promising seedlings are again subjected to close scrutiny before they are propagated for distribution, and nowadays it must be something very good which is selected. Experience has convinced me that it is a mistake to decide upon the merits of those sent out by this firm. I have condemned some which afterwards proved to be really good varieties. The season there has been equally favourable as ours, and I am more than ever persuaded that the disease (for disease it is now, I think, generally admitted to be) is the result of wet, and it may be of unripened bulbs which the season before has hindered from being fully ripened. I have never lifted my own bulbs in such good condition as this year; at the same time I must say that the disease is often to be seen in the thoroughly ripened bulbs received from Fontainebleau. I have never seen much of it there, and certainly there was no trace of it this season.

That there has been an accession of any fine varieties during the past two years is evident to those who have the opportunity of seeing them; and I may here state that they are not the result of mere haphazard saving of seed, for the flowers were carefully hybridised, and the Gladiolus is perhaps one of the easiest flowers for the hybridiser to operate on. I saw here many seed pods (many had been gathered) with marks on them indicating the flowers used in crossing, and it is one of those acts in which the confessed handiness of the French is most successfully employed. Long experience has taught Messrs. Souillard & Brunelet how the best results may be obtained, and hence their success, as in all cases of careful work. Numbers of flowers which promised well have ultimately to be discarded, and out of tens of thousands of seedlings raised annually only eight or nine flowers are deemed worthy of being put into commerce. During the past two years there have been nineteen. How different to what one remembers twenty years ago, when winged flowers, as they were called, were oftentimes sent out—that is, flowers where, instead of blooms all facing the spectator, they were opposite, and required a good deal of ingenuity to bring them to the right position! Then there were flowers where considerable gaps occurred between each bloom, and others where the blooms were one over the other, so making a narrow spike; others, again, where the most that could be obtained was three or four blooms at one time. Now we have them all facing the same way, the blooms overlapping one another, so as not to leave a space of a pin's head between them, and we have heard of spikes of 26 inches long in full flower the whole way up. I have myself had them with thirteen blooms out at the same time. We are sometimes told that it would be better to grow from seed than to run the risk of having named sorts which we might soon lose. The fact that these large raisers can only get this small number each year of really good sorts shows how profitless it would be for most amateurs to attempt it. Moreover, seedlings are apt to go off as well as the named varieties, and hence I believe the best way is to rely on the spawn, carefully saving and sowing this, so that if the old corms do perish the young corms may take their place. There was one point which they mentioned, and which is generally in the French catalogue of Gladioli—that medium-sized corms give the best flowers. This may possibly be because the larger ones throw up two or three shoots; but I have for many years obviated this by cutting the corms in halves, leaving one eye to each piece, and some of the best spikes and the largest corms I have had came from corms thus divided.

With regard to the varieties sent out in 1882-83 I have the following notes:—

*Abriote*.—Large rounded petals of a quite novel colour—apricot with a slight dash of rose colour. The variety seems to be vigorous.

*Arabi Pacha*.—Bright scarlet with a very large ivory-white blotch in the centre, giving it a very distinct and striking character. Quite new.

*Bayard*.—Carmine red with white line in centre of petals; a vigorous-growing variety, although hardly first-class.

*Bicolore*.—Large flowers of bright rosy salmon colour; lower petals ivory white suffused with rose at the edges. A remarkable and fine variety.

*Fatima*.—Ivory white ground striped with bright rosy salmon, with violet blotch on creamy ground. Large flower.

*Feu Follet*.—Yellowish ground with white throat, richly tinted with carmine on the edges.

*Grand Rouge*.—A fine scarlet flower of the same series as *Hercule*, *Le Vesuve*, *Flamboyant*, &c. Very fine and effective.

*Nereide*.—A very fine compact flower, forming a long and close spike, "rose nacré," or mother-of-pearl rose, suffused with lilac; bright violet blotch. I think this to be the best flower of this series.

*Pepita*.—A small yellow flower, pretty but not first-rate, although the raisers think much of it.

The series of 1883-84 consisted of nine varieties.

*Colorado*.—This I have not grown, but saw it at Mr. Dobree's at Wellington in Somersetshire. It is a distinct variety of brilliant rosy orange flowers with large white blotch. Very distinct.

*Conquerant*.—Handsome spike, colour rosy carmine with pure white blotch, white line on petals.

*Constance*.—Good spike of amaranth-red flowers, small white blotch.

*Crépuscule*.—A grand flower; well-opened flowers, lilac-rose slightly flushed with carmine, edges of petals tinted violet.

*Gallia*.—Very long spike of rosy white flowers flushed with bright carmine. A first-rate variety.

*Medecis*.—Very long spike of large, bright, cherry rose, with well-

shaped petals, streaked white and flushed with carmine on the edges. A fine flower.

*Papillon*.—A pretty yellow flower; compact flowers of good form flaked and bordered with carmine. The best, I think, of its colour.

*Pyramide*.—Handsome and grand-looking flower; large well-opened flowers, delicate and bright orange-rose.

*Tamerlan*.—A truly remarkable flower and, I think, the best of the series; flowers good size, upper petals brownish red suffused with slate colour at the edges, under petals creamy yellow and shaded carmine. A flower of the Jupiter and Africaine series, but far superior to anything in its colour that has gone before.

The varieties to be issued this autumn, of which I know nothing, are *Ali*, *Amitée*, *Daphnis*, *Ganymede*, *Gordon Pasha*, *Latone*, *Madame Auber*, and *Thérèse de Vilmorin*. Of this last the raisers have the very highest opinion, for it is sent out at a price exceeding any that they have ever offered their corms at—28 francs. They describe it, as well they may, as one of exceptional merit.—D., Deal.

## PROLIFEROUS CHRYSANTHEMUMS.

I NOTICED a paragraph in the Journal of the 4th inst. remarking on a prolific Chrysanthemum bloom of the variety *Fair Maid of Guernsey*. I had a similar bloom of *Madame Berthie Rendatler* a few weeks ago and showed it to Messrs. Cannell's foreman, who gave it as his opinion that it was merely a deformity. The same plant had two other blooms of similar style, and very handsome blooms too. I should like to know if any of your readers have had any similar blooms, and also to have your opinion as to whether it is likely to be produced again from cuttings taken from just below the flower, and if so would it be a curiosity of any value and worth cultivation?—F. W. JAMESON.

[We regard the production of the prolific flowers as accidental. There is, however, a possibility that plants raised from cuttings as suggested might produce similar whorls of flowers round the terminal bloom. Such a variety would be a curiosity and interesting among other plants in a conservatory, but we do not apprehend it would possess any material commercial value.]

## BRITISH APPLES.

*Report of the Committee of the National Apple Congress held in the Royal Horticultural Gardens, Chiswick, October 5th to 25th, 1883.*  
London: Macmillan & Co.

THIS work, which has been compiled and prepared by Mr. A. F. Barron, is a concise, useful, and substantial record of the great event above mentioned, at which 10,150 dishes or separate lots of Apples were staged by 231 exhibitors from various parts of the country. The number of different names applied to the Apples exhibited was 2020, and the number of varieties regarded as presumably distinct 1545, all of which are described in the catalogue embodied in the Report.

We cannot so clearly indicate the characters of this admirable compilation as by giving one or two extracts. The work is divided into counties, and shows the number of varieties sent from each with the remarks of the exhibitors of them, and the observations of the Committee of Examiners. The first county on the list is Berkshire as follows:—

### BERKSHIRE.

#### Exhibitors.

- 1.—Mr. W. S. Campbell, Cowarth Park, Sunningdale, Ascot.  
Number of varieties exhibited . . . . . 44

*Observations*.—A very fine lot of fruit. *Blenheim Orange*, large and remarkably high in colour, also *Hambleton Deux Ans*, *Court Pendu Plat*, and No. 24, which was unknown to the Committee.

*Exhibitor's Remarks*.—Grown on standards and espaliers, grafted chiefly on the *Paradise*. Situation sheltered. Soil, a light sandy loam; subsoil, sand and gravel.

- 2.—Mr. T. Jones, Royal Gardens, Frogmore.  
Number of varieties exhibited . . . . . 162

*Observations*.—An exceedingly interesting collection, containing many excellent old sorts not commonly met with. The examples were somewhat small, but mostly true to name. A number of the dessert varieties were very fine, especially *Court of Wick*, *Golden Harvey*, and *Braddick's Nonpareil*.

*Exhibitor's Remarks*.—The specimens sent are not quite so large as usual, owing to the greater number of the trees having been lifted last winter. The majority of the trees were planted by the late Mr. Ingram, so that they are now getting old.

- 3.—Mr. S. Mortimer, Purley Park, Reading.  
Number of varieties exhibited . . . . . 40

*Observations*.—Examples of moderate size and quality.

*Exhibitor's Remarks*.—Some of the trees are very old standards, which bear abundantly, but we get our choicest fruit from bushes that have been planted about eight years. Some of the trees are grafted on the *Paradise*, some on the *Crab*. Situation, in a valley entirely surrounded with tall trees. Soil, a light shallow loam, on a gravelly subsoil. The varieties named are those we find most prolific and useful; a good many of the better kinds canker badly, for example, *Lord Suffield*. *Cellini* bears well, but the fruit is always very small; but none of the Apples grow very fine on this thin soil.

- 4.—Mr. C. Ross, gardener to Charles Eyre, Esq., Welford Park, Newbury.  
Number of varieties exhibited . . . . . 72

*Observations*.—A remarkably fine, well grown lot, specimens being of good size, very clear skinned and very correctly named. The following varieties were specially noted—viz., *Peasgood's Nonsuch*, very large, *Stirling Castle*, *Annie Elizabeth*, *Mère de Ménage*, *Hollandbury*, *Cox's Pomona*



Evagil, Worcester Pearmain, Cambusnethan Pippin, and a seedling variety unnamed. The bearing property of each variety was also stated on the cards.

*Exhibitor's Remarks.*—Three-fourths of the trees are grown in bush form, the average age being about twelve years. The other fourth consists of standards of about twenty-one years standing. Keswick Codlins, Northern Greening, and a few others are sixty years old. The bush trees are on Paradise, the standards on Crab. Situation is exposed to the north-east, with no shelter except a very few trees. Soil, old garden over 200 years in cultivation; subsoil gravelly. The sorts named are those which are most to be depended on for a crop, within a radius of seven miles from here. Some of them do not always bear in this garden, for many sorts canker as soon as their roots get into the subsoil. To keep the trees healthy they require to be planted shallow, and top-dressed every two years with a mixture of fresh loam and old manure.

Then follows a list of varieties suited to that county; and so the work proceeds through England, Wales, Scotland, and Ireland, but not necessarily embracing every county. From the information thus recorded information of general importance is reduced and tabulated as below:—

LIST OF 120 APPLES SELECTED THE GREATEST NUMBER OF TIMES. POLL  
TAKEN FOR THE WHOLE OF GREAT BRITAIN.

Number of returns from exhibitors .. .. . 130

60 Dessert Apples.

Name.	No. of Times selected.	Name.	No. of Times selected.
King of the Pippins.....	98	Duchess of Oldenburgh ...	6
Cox's Orange Pippin.....	89	Dutch Mignonne .....	6
Ribston Pippin .....	78	Cambusnethan Pippin.....	6
Kerry Pippin .....	56	Oslin .....	6
Blenheim Orange .....	52	Cornish Gilliflower .....	6
Irish Peach.....	48	Early Harvest.....	6
Devonshire Quarrenden ...	42	Nonpareil .....	6
Sturmer Pippin .....	41	Golden Knob .....	5
Scarlet Nonpareil .....	31	Herefordshire Pearmain ...	5
Court Pendu Plat .....	29	Boston Russet .....	5
Yellow Ingestrie .....	27	Syke House Russet .....	5
Fearn's Pippin .....	27	Russet Nonpareil .....	5
Claygate Pearmain .....	27	Ashmead's Kernel.....	5
Worcester Pearmain.....	26	Egg or White Paradise ...	5
Margil .....	23	Winter Strawberry .....	4
Wyken Pippin .....	23	Lord Lennox .....	4
Cockle Pippin.....	22	Juneating .....	4
Court of Wick .....	21	Duchess's Favourite.....	4
Red Astrachan .....	19	Reinette du Canada .....	3
Adams' Pearmain .....	18	Lord Burghley .....	3
Mr. Gladstone.....	15	Winter Pearmain .....	3
Golden Pippin .....	13	Rosemary Russet .....	3
Mannington's Pearmain ...	11	Melon .....	3
Gravenstein .....	10	Downton .....	3
Summer Thorle .....	9	Golden Harry.....	3
Lemon Pippin.....	8	Scarlet Pearmain .....	3
Braddick's Nonpareil .....	8	Mabbot's Pearmain .....	3
Early Margaret.....	8	Pine Golden Pippin .....	3
Old Nonpareil.....	7	Pine Apple Russet .....	3
Golden Reinette.....	7	Pearson's Plate .....	2

60 Culinary Apples.

Name.	No. of Times selected.	Name.	No. of Times selected.
Lord Suffield .....	101	Hanwell Souring .....	7
Dumelow's Seedling.....	93	Small's Admirable.....	7
Keswick Codlin.....	84	Duchess of Oldenburgh ...	7
Warner's King .....	70	Lord Grosvenor.....	7
Blenheim Orange .....	63	Grenadier .....	6
New or Winter Hawthorn-	52	Reinette du Canada .....	6
den .....		Tom Putt.....	6
Cellini .....	52	Rymer .....	6
Ecklinville Seedling.....	49	Winter Quoining .....	6
Stirling Castle .....	48	Gloria Mundi.....	5
Hawthornden.....	41	French Crab .....	5
Mank's Codlin.....	37	Round Winter Nonsuch ...	4
Golden Noble.....	36	Frogmore Prolific .....	4
Cox's Pomona.....	32	Royal Russet .....	4
Alfriston .....	32	Lane's Prince Albert .....	4
Emperor Alexander .....	28	Dutch Codlin .....	4
Northern Greening .....	21	Norfolk Bearer .....	4
Tower of Glamis .....	21	Queen Caroline .....	4
Mère de Ménage .....	19	Gooseberry Apple.....	3
Beauty of Kent.....	18	Hollandbury .....	3
Lord Derby.....	15	Yorkshire Beauty.....	3
Yorkshire Greening .....	12	Hambleton Deux Ans.....	3
Annie Elizabeth.....	11	Dutch Mignonne .....	3
Norfolk Beefing.....	10	Hoary Morning .....	3
Loddington Seedling .....	10	Gravenstein .....	3
Pott's Seedling .....	9	Lord Dunmore .....	3
Peasgood's Nonsuch.....	9	Minchal Crab.....	3
Betty Geeson .....	8	Lady Henniker .....	3
Waltham Abbey Seedling ..	7	Lemon Pippin .....	3
Bedfordshire Foundling ...	7	Catshead .....	3
Bess Pool.....	7		

"These Returns are valuable as showing the extent of appreciation in which certain varieties are held throughout the country. They cannot, however, be altogether accepted as complete lists of the best or most desirable sorts to cultivate in all cases. For example, many excellent varieties of Apples, through being comparatively unknown, are placed much lower in the lists than their merits otherwise entitle them; among others the following may be named, Pearson's Plate, Melon, Grenadier, Lane's Prince Albert, Bramley's Seedling, Frogmore Prolific, Lady Henniker, Golden Spire, Schoolmaster, &c., &c.

"The most popular Apple—or that which has received the greatest number of marks (101 of a possible 130)—is Lord Suffield, King of the Pippins being placed second with 98. The most popular dessert Apple in England is Cox's Orange Pippin; but it is evidently not so well known or so well suited for the colder climate of Scotland. With this exception the returns are singularly uniform, the varieties selected as most suitable for the north being also held in the same appreciation in the south. Thus the varieties of Apples that are really worthy of cultivation may be reduced to comparatively narrow limits."

Everyone interested in Apples should possess this concise, comprehensive, and inexpensive Report.

ROYAL HORTICULTURAL SOCIETY.

DECEMBER 9TH.

THE last meeting of the year was not distinguished by any exhibits of an unusual character, though several interesting Orchids were shown. Messrs. Cannell & Sons had a pretty group of Primulas and collections of other flowers, several firms also contributing small collections of plants.

FRUIT COMMITTEE.—H. J. Veitch, Esq., in the chair. Mr. Gilbert of Burghley Gardens sent a seedling Melon resembling the ordinary Spanish Melons sold by grocers, but it was not of any merit. Mr. C. Ross, Welford Park, Newbury, sent two seedling Apples, which were passed. He also sent fruit of an Apple, an American variety, which was unusually briskly acid, and which is no doubt an excellent cooking Apple. It is supposed to be Peck's Pleasant. Mr. Roberts, The Gardens, Gunnersbury, sent a dish of Negro Largo Fig, and also two plants to show its excellence as a winter bearer. The fruit was of good flavour, and the Committee awarded a cultural commendation. Mr. Hudson, The Gardens, Gunnersbury House, sent two fruits of Lord Carrington, one of Smooth-leaved Cayenne and one Queen Pine Apple, to which a vote of thanks was awarded. Mr. Charles Turner of Slough sent a dish of Round Winter Nonesuch Apple. G. F. Wilson, Esq., sent fruit of Diospyros Kaki, thoroughly ripened. It is in size and form like a Court Pendu Plat Apple, of a rich orange colour. The flesh is remarkably tender, juicy, and sweet. A cultural commendation was awarded. Messrs. James Veitch & Sons sent a variegated form of Celery, which had a blanched appearance; but it notwithstanding possessed the rank flavour of unblanched Celery. Three varieties of Celery were shown from the gardens of the Royal Horticultural Society, Clayworth Prize, introduced by Messrs. Watkins & Simpson. It was considered of excellent flavour, but not superior to others in cultivation. Covent Garden Red New Early Rose was of good flavour. Mr. Barron exhibited bunches of Gros Colman Grapes affected by the Oidium Balsamii. It comes like a mildew on the stalks of the bunches, but the berries are not affected.

FLORAL COMMITTEE.—After the usual business was transacted there was a formal discussion on the proposed amalgamation of the two sections of this Committee, and the following resolution was agreed to unanimously:—

"That the Council be respectfully informed that this Committee has endeavoured loyally to conform to regulations adopted by the Council for the present year, the chief feature of which is the division of the Committee into two sections. The Committee had no opportunity of expressing an opinion in advance of the change, but now that a year has elapsed feels bound to say that the change has proved unfavourable to the despatch of business. The Committee in its divided state cannot command the variety of knowledge and fulness of judgment that are requisite to its deliberations, and the several members, being restricted in their critical consideration of subjects submitted, feel less interest than formerly in the business that calls them together. Moreover, the restriction limits their compensation for the time and attention their work demands. Under former arrangements, the consideration of every subject by the whole body was of advantage to all, irrespective of individual opinions, and the votes finally taken.

(Signed) "JAMES O'BRIEN, *Chairman A Section.*

"SHIRLEY HIBBERD, *Chairman B Section.*"

Messrs. H. Cannell & Sons, Swanley, contributed a large and interesting collection of Primulas and Pelargonium blooms, which constituted the chief part of the display in the conservatory. The Zonal Pelargoniums were particularly fine, the blooms large and brilliant in colour, especially Advance, Ajax, and Scarlet Cloth shades of scarlet; Mrs. Robertson bright clear pink; Favourite warm salmon, large; and Mrs. Bowen pale delicate pink, very large and beautiful; the Queen of the Belgians and Le Cygne, the former single and the latter double white. The Primulas were dwarf, healthy, and well flowered, comprising Swanley White, very handsome and pure; Lilacina, lilac-purple; Swanley Red, dark rich red; Swanley Giant, rich purple, of great size and good habit; Queen of the Whites, a fern-leaved variety, pure and handsome; Princess of Wales, delicate blush pink, a charming variety; and Swanley Blue, of a distinct bluish purple shade, the blooms about 2 inches in diameter. Several pretty single and Anemone Chrysanthemums were shown. Amongst the latter Virginale, pure white, with tubular central florets, was very notable.

Messrs. Hooper & Co., Covent Garden, London, showed a basket of Carnations, including several pretty varieties, of which the best were Irma, bright rose; Zouave, deep scarlet; Chevalier, yellow, streaked with rose; C. H. Hooper, yellow edged with red; and Mademoiselle Carle, pure white, free, very fragrant, and strong in habit.

Mr. C. Turner, Slough, also sent a basket of Carnations, including the following:—Garnet, bright scarlet, shaded lighter in the centre; Emerald, rose, streaked with purple; Curiosity, rosy purple, fringed; Black Diamond, deep maroon; and Madeleine, pale salmon; and Grand Monarch, which was certificated.



Messrs. J. Veitch & Sons, Chelsea, showed several new plants, *Adiantum Collisii* being a very graceful Fern with fine hair-like divisions of the fronds and bright green oblique pinnules. *Rhododendron Queen of the Roses* is a pretty variety of the greenhouse hybrid section, the colour of the lobes being a delicate shade of pink with white tubes. Flowers of a late-flowering Japanese *Chrysanthemum* named *Maid of Athens* were also shown by Messrs. Veitch & Sons. The florets are pure white and flat or slightly twisted. Mr. W. Bennett, Shepperton, showed three plants of *Rose Her Majesty*, which had single stems 9 or 10 feet high, and were growing in 32-size pots. The plants were said to be six months old, and had been grown under glass, the stems being nearly half an inch in diameter. Messrs. W. Paul & Son, Waltham Cross, sent two plants of *Abies Douglasi glauca* for comparison with the ordinary green form, the variety remarkably distinct in glaucousness and much more ornamental. Messrs. J. Laing & Co., Forest Hill, exhibited a collection of *Chrysanthemums*, including several single varieties, Japanese *Anemones*, and the useful *Pompon Val d'Or*, which was certificated.

Sir Trevor Lawrence, Bart, M.P., Burford Lodge, Dorking, exhibited several Orchids, amongst which the curious reddish brown *Houlletia odoratissima*, with a spike of five flowers, was very notable, and several *Calanthes*, including *C. bella*, *C. tineta delicata*, and *C. Sandhurstiana*, the last-named being certificated. F. A. Philbrick, Esq., Oldfield, Bickley, sent a plant of *Odontoglossum Andersonianum* variety with flowers 4 inches in diameter, white finely dotted with chocolate, the spots on the petals being much smaller than those on the sepals. W. Lee, Esq., Downside, Leatherhead, was awarded a cultural commendation for a plant of *Dendrobium Leechianum* in a basket 6 inches square bearing two growths with about twenty flowers each. This was considered too much like *D. Ainsworthii* to be certificated. It is, however, a very handsome Orchid, the lip being highly coloured and the flowers large. Mr. G. F. Wilson, Weybridge (H. Chamberlain, gardener), sent a panicle of *Odontoglossum Alexandræ* with forty-five blooms, mostly small, white with a few brown spots. Mr. C. Woodham, gardener to R. Davis, Esq., Earlsfield House, Wandsworth Common, sent a seedling *Primula* named *Cloth of Gold*, the leaves deeply edged with yellow. Mr. W. Allan, Gunton Park Gardens, Norwich, exhibited a basket of *Comte Brazza's White Neapolitan Violet*, for which a cultural commendation was awarded. The flowers were of great size, pure white, and very sweet. Baron Schröder, The Dell, Egham, showed several Orchids, including a spike of *Vanda Sanderiana* with seven large blooms, and a spike of *Aerides Rohanianum* about 18 inches long.

First class certificates were awarded for the following plants:—

*Cattleya bulbosa grandiflora* (Baron Schröder and Mr. H. James).—A charming and valuable variety, with large rich crimson purple flowers.

*Calanthe Sandhurstiana* (Sir Trevor Lawrence, Bart.).—A very beautiful form with large flowers, of a rich rosy crimson colour. One is the darkest coloured forms of the *vestita* section.

*Odontoglossum Alexandræ flaveolens* (Baron Schröder).—A beautiful variety of a distinct yellow shade, with brown spots, the general form of the flowers being excellent.

*Cypripedium insigne violaceum punctatum* (F. A. Philbrick, Esq., Oldfield, Bickley).—A beautiful variety, with a very large dorsal sepal, broadly edged with white, and having a dozen or more large purple spots outside the green central portion which is spotted with brown. The plant shown was a very healthy one, and had eighteen fine blooms.

*Rhododendron Conqueror* (Veitch).—One of the greenhouse hybrid section, with large flowers and rounded lobes, in a loose umbel of fourteen reddish scarlet blooms. Very strong and handsome.

*Carnation Grand Monarch* (Turner).—Large blooms, dark crimson maroon, full and handsome.

SCIENTIFIC COMMITTEE.—Sir J. D. Hooker in the chair.

*Hoya and Sparmannia Roots Clubbing*.—Mr. McLachlan reported upon these roots, sent by Mr. Plowright to the last meeting. They appear to be due to *Rhizoglyphus Robini* (?) (gen. of *Tyroglyphidae*). Mr. Albert Michael reports that it has appeared this year in numerous places and is doing much damage to bulbs. The individuals are considerably smaller than most, but this is not unusual in *Acari*. He suggests that they are not so well nourished as by bulbs. Mr. McLachlan adds that he could find nothing in the hard swellings, but only in those that were softened by incipient decomposition. He suggested that inundation at intervals, if practicable, might do good, or saturation of the soil with kerosene or bisulphide of carbon, as used for the *Phylloxera*, might be tried at intervals, so as to destroy the eggs as well as the developed mites. He further remarked on the *Tyroglyphidae*, that they have been supposed by some to be parasitic on the *Phylloxera*, but that this idea is not entertained by Mr. Michael. They usually attack the Lily bulbs between the scales, apparently giving rise to a resinous exudation not uncommon on bulbs. Mr. Smith reported on the same roots that he had discovered nematoid worms only in the green parts, but not in the corroded.

*Floral Monstrosities*.—Dr. M. T. Masters exhibited drawings of *Vicia americana* and *Cypripedium Sedeni*. In the former the calyx had stipular processes developed between the lobes; the petals were simple or variously lobed, five to seven in number, with little or no distinction between the standard, wings, and keel. The stamens were variable in number, some consisting of simple threads devoid of anthers, others bearing at the top two to three petal-like lobes; when three in number the central one bore an abortive anther. The pistil was stalked with more or less foliaceous carpels, without ovules. The *Cypripedium* had the three sepals distinct; the two lateral petals were arranged diagonally, unequal in size. A lip-like petal was slightly calcarate at the tip. The column had the two lateral stamens perfect, but no staminode. Each stamen bore a petaloid wing.

*Diospyros Kaki*.—Mr. Wilson exhibited five scarlet fruits of this Japanese tree of good flavour.

*Odontoglossum Alexandræ*.—He has also showed a fine spray of this Orchid bearing forty-five blossoms.

*Passiflora fatida*.—Mr. Lynch showed fruits of this species, remarkable for the pectinately divided bracts covered with glandular hairs and surrounding the globular yellow fruit.

*Malva umbellifera* and *Abutilon igneum*.—Mr. Lynch showed specimens of these fine-flowering plants from the Cambridge Botanic Gardens.

*Evergreen Plane*.—Sir J. D. Hooker referred to a species described by

Pliny as growing in Crete, and of which he had just received foliage and unripe fruit. It closely resembled *Platanus orientalis*.

*Drawing of Egyptian Mummy with Wreaths in situ*.—He also exhibited a drawing sent by Dr. Schweinfurth, showing the Lotus leaves and wreaths in situ on the Egyptian mummies. The wreaths and plants contained in them were described in *Nature* and elsewhere.

*Sclerotia in Potatoes*.—Mr. Murray said he had repeated his experiment, and still failed entirely to corroborate Mr. Smith's and Mr. Wilson's observations as to the presence of a protoplasmic body within the shell of calcium oxalate. It was proposed that they should make a joint examination, and report upon the result at the next meeting.

*Viola acuminata*.—Mr. Ridley exhibited a germinating specimen in which a tuft of flowers were appearing in the place of the plumule, and observed that the cotyledons were first of a pinkish hue but became subsequently bluish green, the colour not being due apparently to chlorophyll.

*Grapes attacked by Oidium Balsamii*.—Mr. Barron sent specimens in which the peduncles were attacked by this fungus, which, however, did not appear to affect the fruit. It was described by Mr. Smith in the *Gardeners' Chronicle* for September 6th, 1884.

*Red-spotted Potatoes*.—A communication was read from Yorkshire to the effect that "a large crop, of fully 10 tons to the acre, was badly attacked by this disease. It was a first crop after breaking up a common where formerly Heather and Fern grew. The soil was light and sandy. The worst affected appeared to be from the earliest planted seed. (A similar attack has occurred in Potatoes grown in old soil). The land was worked well and manured with a dressing of long dung, and about 6 cwt. per acre of a mixture comprising sulphate of potash, muriate of potash, dissolved bones, and sulphate of ammonia; this mixture having proved to be eminently suitable in sandy soil."

Information was also received from Kent, where the disease has occurred since 1879, when it attacked *Early Rose*, since which year it has appeared more or less annually. In 1882 "Myatt's Ashleaf" was badly spotted, but it did not at all affect its growing qualities, for the produce from them was entirely free from it. This year the worst is *Magnum Bonum*, but several varieties are more or less attacked. The soil is a light sandy loam on a high and dry situation. Different manures appear to have no effect in either producing or reducing the spots."

Another writer near Clevedon "has discontinued growing *Victoria* on account of this particular disease, which is very bad in dry seasons. The soil is a sandy one more or less in every place where they were grown. Manure appears to have nothing to do with it." The coincidence of red-spotted tubers with a sandy soil, and the agreement that manure has nothing to do with it, is thus far noticeable. Further observations or experiences are desired, and communications are requested to be sent to Rev. G. Henslow, Drayton House, Ealing.

#### NATIONAL AURICULA (SOUTHERN SECTION), CARNATION AND PICOTEE SOCIETIES.

A GENERAL meeting of the above Societies was held in the conservatory at South Kensington, on Tuesday last, for the consideration of the report of the Sub-Committee that had been appointed for the preparation of rules for the government of the Societies, and the arrangement of the schedules for the exhibitions of the year 1885. There was a considerable attendance of members, and it was very apparent that the resolutions passed at the meeting appointing the Sub-Committee were not by any means to meet with general acceptance. Mr. Shirley Hibberd was unanimously elected chairman, and it was in a large degree due to his ability and tact that the business was transacted so amicably.

The business of the Societies had hitherto been conducted without any rules, Mr. Dodwell having been the Treasurer and senior Secretary; and he, it must be observed, was opposed to the promulgation of any rules at all; while Mr. Richard Dean, who through an accident did not receive a notice of the October meeting, protested against its validity. Mr. Dodwell made various protests more or less irrelevant, but eventually an opportunity was provided for the Secretary, Mr. James Douglas, to read the minutes of the last meeting, and a vote was taken—the crucial vote of the occasion—that those minutes be confirmed. This was carried by a majority of one, Mr. Dodwell having succeeded in bringing up a number of members who do not usually attend the meetings to support him in his action. The narrow defeat was accepted in a manner to which no possible exception could be taken, and eventually the meeting was made special for the consideration of the rules, Mr. Hibberd being again called upon to preside. Various suggestions of Messrs. Dodwell, Pohlman, Dean, and Dr. Hogg were considered, and the chief alterations effected were that four instead of six shall form a quorum exclusive of the auditors (see draught rules page 508 last week); that persons whose subscriptions are in arrear shall not vote at the general meeting, be added to Rule 3; that the subscriptions of members be 10s. annually, but they may at their discretion increase the amount, be added to Rule 5. Rules 6 and 7 were expunged, and the remaining rules referred to the Committee as "conditions" for the guidance of exhibitors. It was also understood that an annual meeting for discussion be held at the close of the exhibitions. The meeting terminated with a cordial vote of thanks to chairman, proposed by Mr. Charles Turner.

#### TALL LOBELIAS.

AMONGST the many flowering plants now used for bold and effective grouping where a rich display of colour is wanted, few, if any, are to be compared with these rare and striking denizens of our gardens. The group of *Lobelias* proper, and to which the *Cardinal Flower*, *L. cardinalis*, *L. splendens*, *L. fulgens*, *L. syphilitica* belong, together with a host of varieties obtained from them by intercrossing in recent years, are all extremely valuable garden plants; the more so owing to their readiness in adapting themselves to ordinary circumstances in the smallest gardens. In positions where the soil is naturally heavy or damp good drainage will be the principal requisite, and in dry localities the only serious attention required will be occasional waterings. They are exceedingly handsome border plants, where, if placed at intervals, they will lighten up and show off to advantage flowers of duller hues. They are also very effective in



clumps or beds isolated on lawns, &c.; and although reputed tender, they may be safely wintered in their permanent quarters, and keep free from damp and cold by conical heaps of coarse ashes, and which is the easier effected by the stalks dying down in winter. The one represented in this Journal last week belongs to the group *Tupa*. *Lobelia Tupa*, and also distributed under the name of *Tupa Feuillei*. This group, although not large, comprises a number of extremely pretty and striking plants, and which with attention to the above directions may be quite safely carried through the winter in the open. For this section, however, the warmest and driest situations should be chosen, rich light soil, and unless in the vicinity of a wall or a hedge, deep planting resorted to. They are said to be very virulent and poisonous, affecting the eyesight so as to cause blindness; but we have not heard of this being verified since its introduction into this country; on being bruised or cut, however, they emit a viscid milky juice, which has a very unpleasant smell.

With us it grows from 6 to 9 feet; leaves alternate, lanceolate, borne on the stem, the whole being covered with a minute pubescence. The flowers, which are borne singly from the base of the smaller leaves near the point, are about 2 inches long, tubular, but splitting at the back nearly the whole length into three or five petals, but which remain joined at their points. They vary in colour, from red tinged with yellow to blood red, very handsome, and covering from 18 inches to 2 feet of the stem.—M. S.

### ENEMIES OF THE ROSE.

IN writing on this subject I indirectly alluded to the weevil, which "A. F. M." has graphically noted. Of late years I have not been so troubled with it, possibly because with my fondness for dwarf Roses I had given up budding—the back having struck work entirely. This autumn I have put in some Briars, not because I like them, I never shall, but at any rate my old back can stand them, and I hope again to give myself the pleasure of budding. I may then again notice the depredations of this little pest, which, like his numerous cousins—and their name is legion—are all mischievous. There is not, so far as I know, a redeeming point in the large weevil family; some are beautiful, extremely so, the diamond beetle for instance, but all mischievous, and any long-nosed beetle, large or small, may be squeezed with advantage whenever met with. Many of the weevil tribe are said to be diurnal; this they may be as regards movements, whilst, as "A. F. M." remarks of our bud-destroyer, he feeds at night. Many years ago I recollect having my Peach blossoms devoured. Nightly they decreased, and daily I searched under leaves and scanned the wall for trails of slugs, which I believed the culprits, but without avail. Then I adopted the nocturnal search with a lantern, and found the depredators to be several of the large black weevils. I easily trapped these by a little moss at the root of the tree to which they daily retired, and were as regularly destroyed. I thank "A. F. M." for this reminder of our little enemy's feeding time.

As to our friend, or rather enemy, at the end of a shoot, I know him not in his perfect state, but am disposed to think him one of the weevil family from the appearance of the grub; and ignorant of the perfect insect, I devote my attention to the larva, destroying that whenever I see it.

My experience does not favour the idea that aphides prefer a sickly plant. When I have noticed them in greatest profusion it has been on strong-growing succulent shoots—shoots that can almost be seen to grow. I am certain that chickens will often peck off the aphides from Rose shoots, but alas! there is a great want of discrimination in the process, and I am afraid their attentions are not an unmixed good. If "A. F. M." by using only an aphid brush simply brushes them on to the ground I fear a large proportion will return. Certainly after dosing them with a garden engine on wall fruit trees and bringing them thus unceremoniously to the ground, if the ground be not diligently raked afterwards the wall is soon covered by troops returning to the attack, and if so, why not after brushing them off? Early detection of the first aphides and slaughter of same, and later on the petroleum solution, I believe to be the surest means of success.—Y. B. A. Z.



### HARDY FRUIT GARDEN.

SEASONABLE HINTS.—Let wall trees first have attention in the pruning, dressing, and training, which should now be done as fast as the weather admits of. Do not, however, keep men at such work when it is too cold, for not only will they suffer, but the trees will suffer too; fingers benumbed with cold can neither strike straight blows, make clean cuts, nor tie and trim neatly. The manager of a garden who compels his assistants so to work shows both want of right feeling and of resource. We retain a lively recollection of many a bitter hour spent in our youth at such work during a long frost and with much snow upon the ground. Pears, Plums, Cherries, and Apricots may all now be taken in turn, and the pruning should receive much thought and care, every branch, shoot, and spur being passed in review, and not one of them retained unnecessarily. Our end and aim in fruit culture is the production of full, but not crowded crops of fine

fruit, and upon closely pruned trees the growth is more healthy and the fruit more abundant and finer if we keep ample space among both spurs and branches to admit light and air freely among them, and instead of having the branches thickly studded with short spurs to have long spurs well set with fruit buds thinly disposed upon the branches, for this is the way to obtain fine fruit and plenty of it. Who that has watched the radiation of heat from the surface of a brick wall in summer can doubt that fruit on the tips of spurs a foot long will be as fine in flavour, colour, and form as the fruit touching the wall? The effect of heat radiation from walls upon the fruit of Pears is remarkable. Plant two trees of any sort of Pear in the same garden, one against a wall and the other away from it, and the wall fruit will always be superior in size, form, and appearance, and in most instances in flavour, but not in all. Waste not a foot of your walls and outbuildings, then, but plant single cordons 18 inches apart against them and upon every aspect. Remove and destroy old shreds and string which may contain the larvæ of insects. If the walls are old and the courses much perforated with nail holes unnailed the trees and give the entire surface of the wall a thorough dressing of limewash made with lime fresh from the kiln and coloured to any quiet tone with ordinary paint colours. The branches of the trees can then be replaced in position, and a fresh trim neat appearance of trees and wall will be the result, and the offensive glare of whitewashed surfaces be avoided.

Espaliers, bush, and pyramidal trees should also receive the necessary winter pruning now, and the training of young trees examined closely and faulty work set right before the growth becomes rigid, and alteration is impossible without new growth. Standards and other trees of free unpruned growth may require a slight thinning of branches and clearance of growth from the interior, which must be kept open. See carefully to the supports of young standards, and protect the stems from cattle or sheep with bushes bound on neatly with small withes.

*Bush Fruit.*—Prune and tie Raspberries, and apply the annual surface dressing of manure to them, and to all bush fruits. We cannot too often repeat that after Raspberries and Gooseberry and Currant bushes are once established in the soil the roots must be left undisturbed by digging, a surface dressing of rich manure at this season of the year being all that is required. This fact shows how important it is that the soil be carefully prepared before the bushes are planted. It must be drained, thoroughly enriched with manure, and if it does not contain plenty of stones a heavy dressing of coal ashes must be well worked into it. Then when the soil settles down, no superfluous moisture can accumulate in it, and we can apply our surface dressings of manure with the assurance that the roots will derive full benefit from it, and the bushes will continue healthy and thriving.

### FRUIT FORCING.

*Figs.—Early Trees in Pots.*—Where the Fig house was closed in November and fermenting Oak leaves placed loosely in the pits the trees will now have the terminal buds swelling. The roots influenced by the genial heat obtained from the fermenting materials will also be producing young feeders through the new compost placed around the pots. When this stage has been reached the Oak leaves should be examined, and if the heat does not exceed 75° they may be firmly trodden down round the pedestals and bottoms of the pots preparatory to the introduction of a fresh supply from the reserve heap, which should be properly worked and warmed before being taken in. The heat and moisture given off by these leaves will greatly facilitate forcing by reducing fire heat. When the external temperature ranges very low the night temperature should not exceed 50°, and make up for any deficiency of night temperature by a corresponding higher temperature by day from sun heat. Syringe the trees and walls with tepid water on fine mornings, and again about 2 p.m. if the house be light and inclined to dryness; but in nearly all houses at this dull season one good syringing over a bed of fermenting leaves will be found sufficient until the trees begin to push fresh foliage. Keep the glass clean and free from condensed moisture by ventilating on all favourable occasions with fire heat turned on to keep the air in motion.

*Succession Houses.*—Lose no time in completing the pruning. Cut back or entirely remove old spurs, and thin out the least promising shoots that have reached the extremity of the trellis to make room for free growth and the full development of wood and foliage. Spare no pains in cleansing the trees, paint, and walls, particularly if brown scale has been troublesome. The Fig delights in heat, moisture and generous culture; it also requires light and a free circulation of air to insure high colour and quality, without which the Fig is the most insipid fruit cultivated. As an insecticide there is none, perhaps, equal to petroleum in the proportion of a wineglass to three gallons of water, providing it be kept well mixed with the water, and in using it to be sure that it reaches every part of the trees. In bad cases it is necessary to repeat the application.

*Cucumbers.*—When the temperature outside is low it is a difficult task in many places to maintain a temperature of 60° to 65° at night without having the pipes heated to near boiling point, which is highly injurious, it being false economy to have little piping, as the more there is the less is the need to heat them so highly, and what is expended in the first cost of piping is more than counterbalanced by the saving in fuel. Where there is any difficulty in keeping up the heat recourse should be had to mats or other protecting material over the lights in severe weather. Then in very severe weather the house should be seldom entered, as by opening the door much cold air is admitted, and when this occurs several times a day and night the loss of heat is considerable, and the effect is soon apparent in the plants. In order to lessen the necessity for entering the house the thermometer should be placed in such a position that it can readily be seen outside either by day or at night with a lantern. Remove all superfluous fruits from the plants and secure the shoots to the trellis.



Not much stopping will be needed now except on vigorous plants, the object being to encourage free growth. Keep a sharp look-out for mildew, dusting the infested parts with flowers of sulphur, and maintain a somewhat dry atmosphere. Should red spider appear sponge the leaves with softsoapy water. If green or black aphides be troublesome, dust whilst wet with tobacco powder, or if fumigation be resorted to it must be performed very carefully and moderately at this season, or the foliage will be seriously injured. Maintain a bottom heat of 75° to 80°, and give copious supplies of tepid liquid manure to plants yielding heavy crops, especially to those having their roots in limited space.

Some fermenting material, consisting of two parts Oak or Beech leaves and one of stable litter, including the manure, should be thrown together, with which to make a hotbed at the end of the present or beginning of next month, which may be turned over twice and damped if necessary to induce fermentation, and the turning will sweeten and allow the rank steam to escape before making into a bed, where no better means exist, to raise young Melon and Cucumber plants, and subsequently to plant them in.

**PEACHES AND NECTARINES.**—*Early House.*—When the flower buds begin swelling a slight increase of temperature may be given by day, particularly when the weather is mild, under which conditions there is no difficulty in raising the temperature to 55° or even 60° with open ventilators, but the heat must be turned off so as to allow the temperature to fall to between 45° and 50° at night, or even a few degrees lower. The Peach is impatient of dry fire heat, hence gentle syringings backward and forward are of great benefit, and a little extra attention to the frequent turning of and additions to the fermenting materials will be repaid by the gentle warmth imparted to the surface roots and the genial humidity of the atmosphere. Where the roots are confined to the inside borders the latter should be examined where most likely to become dry by boring down to the drainage, and in the event of any part having escaped previous waterings no time must be lost in getting it properly moistened with tepid water a few degrees warmer than the house. It sometimes happens that the compost during the resting period shrinks from the boundary walls, and the water applied to the surface escapes without entering the solid border. To prevent this the extremities should be well rammed before the house is closed for forcing. One of the most important details in Peach culture is liberally supplying water and nutriment to the roots.

*Succession Houses.*—Follow up pruning and cleansing trees in houses intended to be closed by the new year. Lay in the wood thinly to admit of the full development of the foliage, as fine fruit of good colour and flavour cannot be obtained where the young growths and leaves are deprived of light and air. Keep all doors and ventilators open in late houses during mild weather, particularly where fire heat had not been provided for protecting the blossom in the spring. This is a great mistake, for should the weather prove wet and cold when the trees are in blossom there is a fear of the set not being satisfactory, and which the means of affording a slight warmth and a circulation of air would do much to obviate; besides, in a cold wet late summer and autumn the means of affording heat would admit of the wood being well ripened and the bloom buds plumped, thereby reducing failure to a minimum.

#### PLANT HOUSES.

*Cyclamens.*—Plants that have been kept cool up to the present time, and are wanted in flower, should be introduced to some structure where the temperature can be maintained at 50° to 55°. They should be arranged as near to the glass as possible, or the flower stems will become tall and weakly. Free ventilation should be given on all favourable occasions. Weak stimulants may be applied to these as well as later batches that are to remain under cool treatment for some time longer. Young stock in small pots should be kept slowly growing, and if they have been subjected to cool treatment they will do this in a night temperature of 45°. They must be near to the glass to keep their foliage dwarf and sturdy. Take care that plants in small pots do not suffer by the want of water, and on the other hand the soil must not be saturated. Watch for aphides, and if they appear on the under side of the foliage destroy them at once, either by fumigating with tobacco or dipping them in a solution of tobacco water. For a stock of flowering plants another year seed should be sown at once. A pot or pan may be prepared, according to the quantity of seeds to be sown, by draining it thoroughly, and then nearly filling it with light soil that has been passed through a fine sieve; a suitable compost is equal parts of loam and leaf soil with a liberal addition of sand. Sow the seed evenly upon the surface and just covered with fine leaf soil. If the soil is in a proper state of moisture no water will be needed for at least a week after sowing, if the pan is plunged in a heated structure and covered with a square of glass. Care must be taken to avoid the soil becoming dry after the seed is sown. After the seedlings appear above the soil they should be gradually exposed to the light and grown close to the glass.

*Begonias.*—Such varieties as *B. manicata* and *B. heracleifolia* are much hardier than they are generally supposed to be, for we have up to the present time kept our plants in a cold vinery, and we could not wish for them in better condition. Plants under such conditions should, however, be removed without delay where the night temperature will not fall below 50°. The atmosphere of the house in which they are placed should be kept comparatively dry, or their foliage is very liable to damp. A portion of the stock may be placed in a temperature 10° higher, so that the whole of the plants will not be in flower at the same time. When bringing the earliest into flower is the only time these plants are subjected to stove treatment. They are admirable for conservatory decoration, especially *B. heracleifolia*; although scarcely so light in

appearance as the former, its pink stems and flowers are very effective, rising above other plants of a dwarf nature. Such varieties as *B. parviflora* and *B. weltoniensis* that have been resting in a cool house may be placed in a heated structure, as advised above, when they will soon commence growth. A batch introduced into heat at the present time will come into flower either for the stove, the conservatory, or to supply flowers for cutting at a time when they will be found most serviceable. These are easily grown, only require an intermediate temperature in which to start them, and after they have fairly broken into growth they should have the old soil partially shaken from their roots and repot in the same sized pots in a compost of loam, one-third manure and leaf soil, and a liberal dash of sand. The remainder of the stock can be kept in any cool house.

*Chrysanthemums.*—After flowering it is necessary to keep one or two plants of each variety for stock according to the number of plants required next year of each kind. Those required for this purpose must not be stood outside after flowering, but carefully preserved in the same cool structure. If strong healthy plants are required another year and fine large flowers are anticipated, it is utterly impossible to expect them if the plants are cast out and poor cuttings only obtained to start with. One of the secrets of success is sturdy vigorous cuttings, and to obtain these the stools from which they are to be taken must be well cared for by supplying them regularly with water when they require it. They should be kept as cool as possible and frost just excluded from them. Late varieties that were kept outside as long as possible and are now developing their flowers under glass should be kept as cool as possible by having the ventilators open day and night when the weather will allow of this being done. Varieties that were expanding their flowers about Christmas last year are in an advanced stage this season, and to retain them in good condition until that date they will have to be retarded as much as possible.

*Tea Roses.*—Plants that were housed early in October and have been in a cool airy structure up to the present time are now breaking freely into growth. The mild autumn has been very advantageous to these plants, and if they are now started in a temperature of 50° to 55° at night they will in a short time produce buds in quantity. The day temperature may be allowed to rise 5° or 10° higher, or higher still in preference to admitting cold draughts to the younger tender foliage, for no other cause will predispose these plants to be attacked by mildew sooner. A little air admitted to the plants will be beneficial when the weather is mild and will allow of this being done. Water the plants at their roots carefully, and avoid giving them too much or allow them to suffer by an insufficient quantity. The water used should be of the same temperature of the house or a few degrees warmer. Syringe the plants daily or when the weather is favourable with the softsoap mixture so frequently recommended, and all other conditions being favourable no mildew will attack them.

*Chorozemas.*—These are very useful for conservatory decoration, and are invaluable, because they can be brought into flower just when many of the autumn-blooming plants are over. *C. cordatum splendens* is the earliest to flower, and small plants trained bush shape by the aid of a few stakes are most serviceable in from 5 to 8-inch pots where those of a larger size cannot well be employed. The flowers individually are not very showy, but when plants are profusely flowered their orange and red pea-shaped blooms render them very effective. Although these plants are of loose slender growth, and more suitable for training upon trellises, in which form they do not, where effective arrangements are required, show themselves to the best advantage, they can be kept in due bounds and grown into bushes by a judicious use of the knife after flowering and before they start into growth again. These plants will bear gentle forcing to bring them into flower, such as advised for *Epacris*. Those required for spring and late flowering should be kept cool as advised for other greenhouse plants.

## THE BEE-KEEPER.

### STEWARTON HIVES, OCTAGON AND SQUARE.

WILL "Lanarkshire Bee-keeper" kindly tell me where I may obtain Stewarton hives (octagon or square) fitted exactly upon the same principle as those described in his letter of the 20th ult., with prices?

Possibly he would not object to give measurements and drawings that I may manufacture one for myself. I have tried to understand the construction of his hives from his description, but cannot. For example, the "four posts are to be lined half way down." With what, and for what purpose? "The floor 2 inches deep." How fixed on the legs? Is the floor solid, or a frame 2 inches deep, and of what size? &c., &c. The lateral slide also I cannot understand. If your correspondent would minutely describe the stool and hive in his next letter, with exact measurements and plans, it would render me a great service.

I take this opportunity of thanking your correspondent for his answer to my last letter. May I also say that I do not understand the words "ragged" and "slotted?"—BASIL.

[In reply to "Basil" Stewarton hives can be had from Messrs. George Neighbour & Sons, 149, Regent Street, London, who keep a supply of these hives to serve customers at the same price as they can be had from here after carriage on single hives has been paid. The price depends entirely upon the quality and completeness; where yellow pine and brass fittings are used adds to the price considerably. But I infer from his letter that it is the square hive he inquires after, which is cheaper than



the octagon. The price is also regulated by its quality and completeness. If "Basil" forwards his address to me, along with an order for a pattern square or octagon hive, I will forward to him a sample box floor and stand, price to be stated after, which I think will not exceed from 5s. to 7s. I think it will suit his purpose as well as drawings, which I think are unnecessary for so simple a hive. I may add from being single-cased that it is the most serviceable hive, but requires covering or protection by an outside case or bee-house.

I will now endeavour to answer "Basil's" direct queries, impressing him first that the size of all hives are regulated in their width by the number of combs. Thus, a hive inside measurement containing nine combs,  $1\frac{1}{2}$  inch each, will measure  $13\frac{1}{2}$  inches, but it is necessary that the two outside combs should be the same distances from the walls as one comb is from another, so these outside combs should have an extra quarter inch. This will make the inside measurement 14 inches. The sides of the hive being five-eighths of an inch will now measure  $15\frac{1}{4}$  inches outside. Hives of this size do not require dividing-boards, and are better adapted for bees in every respect than broad hives, which are more liable to have an excess of drone comb than narrow hives. In the absence of drawings, and to make the construction of the hive easily understood, let "Basil" take a piece of timber of suitable length about 13 inches broad, square these in pairs to  $15\frac{1}{4}$  inches, dovetail the front and back, draw in, and put together in the usual way. Gauge one and cut off to  $6\frac{1}{2}$  inches for a body box, another at 2 inches for the floor, and the remainder for the stand, which will be ready to receive the feet from 6 to 8 inches long, which must be firmly nailed. Though the foregoing gives a proper idea of what is wanted, and makes it more easily explained and understood, it by no means conveys to the reader all the necessary details required. Nor can the hive be made as above described, serving only as a foundation to build upon, noting carefully that the size of the stand floor and hive are of the same material, held together either by back-flap hinges or straps of hoop iron regularly punched. If brass screws are used rust will give no trouble when they are withdrawn. It is not absolutely necessary to have these screwed unless when in transit. "Basil" will easily understand from the foregoing what the stand should be like.

The floor requires a little explanation. The upper edges must be flush, and the zinc, five holes to the inch, tacked on to it; a groove, however, before being dovetailed must be run in two of the sides on the lower edge to receive a three-eighth-inch sliding floor. Here it will be observed that the side of the floor where the bottom comes out must be three-eighth inch less than the three other sides and the dovetails on it. If "Basil" examines a drawer having a flush bottom he will see an example, and with a pair of five-eighth inch match ploughs he will effect his purpose in grooving and tongueing the floor now finished, unless he wishes to insert a feeder, as I have described in another article.

The body boxes, of which there should be three, the size already explained, should be all alike, having a slide for a doorway. The width of the hive is half an inch deep, the same planes serve to make the slide and groove. The under doorway should be the only one employed, but the bees may be allowed to enter at any one point. I prefer their doing so at one end, and in hot weather it may be extended the whole width or ventilated from below. A window may be cut in the front and back of the hive. A thin shutter with a pivot at each end, these pivots let in flush and a staple driven in keeps them in position, acting as a hinge, is cheap and effective for the purpose of a cheap hive. A principal thing to be observed is that the dovetails or pins must be made on the front and back of the hive. When this is strictly observed the front of the hive has its under edge unbroken for the slide. As I use half-inch bars for the combs the upper edge of the front and back should have the first dovetail at least half an inch down, so that when the upper edges are rabbeted or checked to receive the end of the bar, there will be no opening. This rabbet or check should therefore be half inch deep, and a quarter inch in the thickness of the wood, which will leave three-eighth inch solid. Now take a piece of strong tin  $15\frac{1}{4}$  inches long by about  $1\frac{1}{2}$  inch broad, place between two pieces of iron, of which the edges are straight, leaving a quarter of an inch free, now bend over, and you have the proper angled tin. A hole at each end and one in the middle for screw-nails are sufficient, but a piece of strong hoop an inch or so long, with a hole in the centre like a button, will keep the tin straight. Cut some pieces of wood 1 inch broad by one-eighth inch thick, and of a proper length to slide underneath the tin, and the whole is complete. The top bars should be  $1\frac{1}{4}$  inch broad, the hole to receive the end piece should be bored so that there will be a quarter inch space between it and the front and back of the hive. These end pieces may be about seven-eighth inch broad, quarter inch thick, and an inch or so shorter than the depth of the hive. A number of these clamped together for tenoning should be shouldered square; these tenons dipped in glue and driven in the round hole of the top bar are all that are required, except the groove for the foundation, which should be either done with a saw or plough plane before receiving the ends.

The alighting board is supplied with brass hinges to the floor, and the ladder is attached to it by a piece of bent hoop iron, having an oblong hole in one end, through which passes a staple, and is further held down by a pin passing through it and above the iron; but hinges may be employed, though not so useful. I trust the foregoing will elicit the desired information, and if "Basil" succeeds and wishes for information how to execute an outside case for it, I will give the directions at another time. "Basil" will observe that the lateral slides being of the full length of the hive hold down the frame, so that if the hive is inverted none would fall out; but as the tin does not cover the top bar, any frame may

be lifted out for examination on pushing the lateral slides aside. It might be an improvement if a dividing board were kept constantly at one side for the purpose of giving room when manipulating. This form of hive has been examined by many experienced bee-keepers, and is highly approved of, particularly for the purposes for which it has been designed, as well as the form of supers described at page 472. These are not new. I have had them in use for twenty years, and have exhibited them during the past ten years. Now that bee-keepers have seen that the bees abhor sections with a broad bottom rail, the above section or divisible super will be more in repute.

The term "raggle" is right, and any carpenter or joiner will show you what it means; but "saw serp" would have been better than "slot," which is scarcely correct. By using such supers and emptying them of bees with carbolicised paper they only require to be lifted off, and if full several may be lashed together, the crowns covered with a thin board, papered up, and stored or sent off to market in a cheaper and more expeditious manner than sections; while the only glazing necessary is a sheet of glass, while the removal of one or more sections does not mar the beauty of the whole as a complete super. Then there is no obstruction to the bees entering these, neither should there be any divisional tin, wood, or glass used, all of them being great hindrances to bees, which greatly reduces the yield of honey.—LANARKSHIRE BEE-KEEPER.]



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

**Creepers for Conservatory (T. J., Chester).**—If you will state the number you require, or the height and extent of the wall you desire to cover, we will endeavour to answer your question. It is impossible to do so usefully in the absence of the suggested information.

**Peaches for Wall (J. W., Ryde).**—One of the late varieties, we think, will be quite sufficient. An excellent early Peach is Hale's Early, and a good variety for succeeding it and preceding Royal George is Early Gros Mignonne.

**Scale on Fruit Trees (A. B.).**—Your trees are infested with the muscle scale. Scrubbing the branches well with brine will destroy it, as will a solution of soft-soap and petroleum, dissolving 4 ozs. of the soap in a gallon of water, and stirring well in a wineglassful or more of the oil. Apply it quickly and quite hot, and the scale will vanish.

**Abnormal Primulas (Y. Z.).**—It is not unusual for the calyx of the flowers to develop into leaves, as in the case of some of the examples before us, though we have seen such freaks occasionally. The same peculiarity is observable in that curious form of Polyanthus known as the Galligaskin. All the flowers you have sent are good, and indicate that the plants have been well cultivated.

**Gros Colman Grape (R. C.).**—This variety is longer in colouring and finishing than most others. Want of colour may be the result of deficient heat, injured foliage, or overcropping. Gros Colman does not usually ripen well in a cool house, nor is the quality so good as when what is termed Muscat treatment is accorded.

**Seedling Pclargonium (H. Everitt).**—As is usual when the petals are not gummed, they had all fallen from the trusses by being shaken in transit through the post. We could, however, see sufficient of the freedom and colour of the variety to enable us to form a favourable opinion of its usefulness. You will be quite justified in naming it, but at the same time we doubt if it possesses any material commercial value, as there are others closely resembling it in cultivation.

**Gardener Leaving (A. K.).**—We sympathise with you, but under the circumstances you cannot claim any expenses. In reference to your other question, we advise you to do nothing of the kind suggested, except under the advice of a solicitor. It is much easier to get into trouble than out of it in a delicate matter of that kind.

**Cucumbers and Melons (Twenty-years Subscriber).**—We have had excellent crops of Cucumbers in summer in a house facing the north, but have not tried Melons in a similar position, which we do not consider suitable. No doubt the plants might be made to grow very well, and possibly to ripen some fruit, but we should not expect it would be of superior quality.



**Botany (E. P. C. B.).**—You cannot do better than continue the course you have adopted, the work in question being an excellent one. One of the best dictionaries for your purpose is Carrière's "Encyclopedie Horticole."

**Meconopsis nepalensis (Idem).**—The seed of the *Meconopsis nepalensis* may be sown early in spring in sandy loam, and the seedlings should be pricked out in a cold frame which can be well ventilated during the summer. In the winter care will be needed in supplying water, as the plants are very liable to suffer from damp. In the following spring the plants can be transferred to a rockery or thoroughly drained border. It is a good plan to make an annual sowing of seed, as the plants are sometimes lost during the winter, and established plants are also liable to suffer in wet seasons.

**Japanese Chrysanthemums (W. N.).**—The following twelve varieties are dwarf in habit, free bloomers, and well adapted for greenhouse decoration:—Lady Selborne, early, white; Elaine, white; Mdle. Lacroix, white; Triomphe du Nord, crimson-maroon; Bouquet Fait, pale rose; Peter the Great, lemon-yellow; Tendresse, chamois; Fleur Parfait, satin rose; Flambeau, orange-crimson; Grandiflorum, bright yellow; La Nympe, peach, very fine; and Simon Delaux, rich crimson-red.

**Scale on Plants (W. A.).**—The leaves sent are seriously infested with scale, and if the insects spread to the Vines will do great injury. All the large leaves should at once be sponged with a solution of softsoap, Gishurst compound, or other insecticide of that nature, and if a little petroleum is added (about half a wineglassful to a gallon) the application will be more effectual. The Oranges and Oleanders are evidently much infested, and no time should be lost in banishing the filthy pest from the house. Small leaves that cannot be washed should be well syringed with the mixture, keeping it well stirred, and preventing by some means much of it draining to the roots. It is best used warm, or rather nearly hot, syringing the plants an hour afterwards with clear water, and shading them from the sun if it is bright.

**Starting Vines (J. P.).**—Very much depends on the condition of the Vines in determining the period of starting them, and on that point you say nothing. If they have had a complete rest, and the wood is exactly as it should be—hard, brown, and with bold eyes, you may keep the house close now, and proceed as has been directed in our "Work for the Week" columns; but unless the Vines are well prepared for forcing, they would in all probability be better if not started till January. By starting them now you would have Grapes ripe from a fortnight to three weeks sooner than they were last year, but much depends on the weather. We have seen very fine Grapes on Vines that produced roots from the stems freely. These are the result of a moist atmosphere mainly, and some persons consider they indicate defective root-action in the soil.

**Trees, Shrubs, and Plants for an Island (Reader).**—Of trees take White-stemmed Birch, Weeping Willow, Horse Chestnut, common Ash, Japanese Alder (*Alnus firma multinervis*), common Alder, Marsh Oak (*Quercus palustris*), Pinus maritima, Deciduous Cypress (*Taxodium distichum*), Silver Fir (*Picea pectinata*). This is liable to lose its leader growths from spring frost on an island, but we have one which recovered and is now fast becoming a fine tree. Thuja Lobbi is so accommodating to all sorts of situations as to be worthy of a trial, the tall green columns being wonderfully effective among deciduous trees. Mountain Ash answers well close by the water, and when in berry is most striking. If the soil is free from lime then let Rhododendrons be your principal shrub. We have two islands clothed with them, and the growth is positively rampant, the branches overhanging by the waterside. With them try a few Arbutus, Berberis, and Ligustrum. A charming fringe of plants may be had by mingling together *Osmunda regalis*, *Phormium tenax*, and for colour *Phormium tenax Veitchii*, which in Sussex grows faster than the green form, Pampas Grass, *Arundo donax*, *A. conspicua* (the New Zealand Reed), and the common Reed (*A. fragilis*), *Iris Pseud-acorus*, Meadow Sweet (*Spiraea Ulmaria*), Purple Loosetrife, and Bullrush. The last five plants may also be planted in a foot or two of water if it is so shallow near the island, and thus render the fringe still more picturesque.

**Manure for Mushrooms (J. G., Clitheroe).**—The following extract from Wright's "Mushrooms for the Million," the third edition of which will be published shortly, conveys the information you need:—"The manure must be procured from those stables where the horses are fed chiefly or entirely with hard dry food. Let the manure be gathered precisely as the grooms remove it from the stalls. On the arrival of the stable refuse at the preparing ground let it be forked over, casting aside the long and comparatively clean straw only, such as in itself will generate but little heat if placed in a moderate-sized heap; the remainder, which may consist of from one-half straw and one-half droppings to two-thirds of the former and one-third of the latter, to be mixed and formed into a heap as if building a hotbed for a frame. It will seldom be necessary to water it, except perhaps when prepared in August, or early September, and in very dry weather in spring; still, if water is needed to accelerate decomposition apply it. In the course of from four to six days, according to the nature of the manure and the weather, fermentation will be active and the mass hot. The work of turning and purifying must now commence, the former to be carefully done or the latter will not be effected. Every lock of straw and flake of manure which adheres together must be separated, the whole being thoroughly incorporated, the outside portions of the heap being placed in the centre. For the purpose of making the lower part of an ordinary hotbed, one turning after this will often suffice; but it will seldom indeed suffice for a Mushroom bed, first because the material would not be sweet enough, and secondly because decomposition would not be sufficiently advanced. For insuring both these conditions, which are important, from four to six turnings on alternate days are necessary. By this practice the mass is sweetened and the straw broken and partially decayed with the least possible loss of ammonia. The object should be to retain as much of this as possible consistently with the dissipation of other gases that are obnoxious alike to man and to Mushrooms. The right condition of the mass for making up in the beds can only be determined by its appearance and by the sense of smell. It is possible that a heap of manure may be sweet and yet not be quite sufficiently decomposed for our purpose and on the other hand it may be in a proper state of decay and yet

not be sweet; but usually, if the work of turning and mixing is done with care and intelligence, purity and texture will be synchronous; both conditions will be attained at once, and the mass will be ready for use. As the manure and its preparation constitute the very foundation for success in Mushroom culture it is necessary to bestow careful attention on this matter. Persons having experience in heating with fermenting materials can without difficulty determine when the mass can be safely used; but it is certain that all who attempt to grow Mushrooms do not always employ the best medium for the purpose. They either reject too much straw, a frequent occurrence, or when they include it in the mass they make the beds too soon—that is, before the requisite degree of decomposition has been attained. It may be stated for the benefit of the inexperienced as nearly as possible the condition the material should be in for the purpose in question. In appearance there should be a homogeneous or inseparable mass of straw and droppings, the former preponderating, and broken in particles, none of which should exceed 9 inches, and few 6 inches in length, the majority being shorter; the mass should have a slightly greasy appearance, be warm brown in colour, and more than "warm" as regards temperature—in fact it should be as hot as the hand can be borne in it. And now to the test for purity. This is simple. Draw a large handful from the interior of the bulk and apply it to the nostrils; if the result is in any degree offensive another turning is needful, but if no impurity is detected then the mass may be regarded as sweet. That is a negative test. A positive test is this—a rather pungent and somewhat agreeable scent having a suspicion of the odour of Mushrooms. When this is the result we have the most tangible evidence of possessing a medium in the best manner suited for the production of Mushrooms. There is yet another element that must not be overlooked—namely, that of moisture. If the mass is too wet its decay will be too rapid; if it is too dry a steady and continuous heat will not be maintained. Generally speaking, however, when a heap of fermenting manure is well managed the four important requisites—texture, heat, purity, and moisture, will be present in the proper relative proportions; but still, with the object of making that matter plain to all, it may be said that the material must be sufficiently moist to be pressed into a firm adherent mass, yet not so wet that a drop of water can be squeezed from a handful of it by the greatest muscular pressure. As clearly as possible the various tests have been submitted, in order that the uninitiated may be able to start on a firm and sound basis, with good hope of deriving profitable returns sooner or later in Mushroom culture."

**Names of Fruits (Capt. A. P. Rogers).**—1, Blenheim Pippin; 2, Fearn's Pippin; 3, Lucombe's Seedling. (*H. Osman*)—1, King of the Pippins; 2, Dumelow's Seedling. (*J. F. W., Deal*).—The Pear is, we think, Doyenné Boussoch. We do not undertake to name Chrysanthemums, which are varieties of florists' flowers.

**Names of Plants (W. F. T., Gibraltar).**—*Odontospermum* (*Asteriscus*) *maritimum*, a member of the natural order Compositæ, and useful for its autumn-flowering character. (*C. B.*)—Both specimens were small and withered, but 1 resembles *Mucuna pruriens*; 2 we cannot recognise. (*R. P. O.*)—1, *Davallia canariensis pulchella*; 2, *Davallia canariensis*. (*G. F. K.*)—1, *Cypripedium longifolium*; 2, *Celogyne obesa*; 3, *Saccolabium denticulatum*. (*A. G.*)—One of the sprays is of *Begonia insignis*, the other *Eupatorium Weinmannianum*. (*A. T. B.*)—*Osmanthus ilicifolius*.

#### COVENT GARDEN MARKET.—DECEMBER 10TH.

HEAVY consignments of St. Michael Pines to hand, prices considerably reduced, and also Nova Scotia and Canada Apples. Business dull.

##### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. .. .	½ sieve	2 6 to 3 6	Oranges .. .. .	100	4 0 to 6 0
Chestnuts .. .. .	bushel	16 0 0	Peaches .. .. .	per doz.	0 0 0
Cobs, Kent .. ..	per 100 lbs.	60 0 0	Pears, kitchen ..	dozen	0 0 0
Currants, Red ..	½ sieve	0 0 0	„ dessert .. ..	dozen	1 0 3 0
„ Black .. .. .	½ sieve	0 0 0	Pine Apples English ..	lb.	1 6 2 0
Figs .. .. .	dozen	0 0 0	Plums .. .. .	½ sieve	0 0 0
Grapes .. .. .	lb.	1 6 4 0	Strawberries .. ..	lb.	0 0 0
Lemons .. .. .	case	10 0 15 0	St. Michael Pines ..	each	3 0 5 0

##### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes .. ..	dozen	2 0 to 4 0	Mushrooms .. ..	punnet	0 0 to 1 6
Beans, Kidney ..	lb.	0 3 0 0	Mustard and Cress ..	punnet	0 2 0 0
Beet, Red .. ..	dozen	1 0 2 0	Onions .. .. .	bunch	0 3 0 4
Broccoli .. ..	bundle	0 9 1 0	Parsley .. .. .	dozen bunches	2 0 3 0
Brussels Sprouts ..	½ sieve	2 6 3 0	Parsnips .. .. .	dozen	1 0 2 0
Cabbage .. .. .	dozen	0 0 1 0	Potatoes .. .. .	cwt.	4 0 5 0
Capsicums .. ..	100	1 6 2 0	„ Kidney .. ..	cwt.	4 0 5 0
Carrots .. .. .	bunch	0 3 0 4	Rhubarb .. .. .	bundle	0 4 0 0
Cauliflowers .. ..	dozen	2 0 3 0	Salsify .. .. .	bundle	1 0 0 6
Celery .. .. .	bundle	1 6 2 0	Scorzonera .. ..	bundle	1 6 0 0
Coleworts .. ..	dcz. bunches	2 0 4 0	Seakale .. .. .	per basket	2 0 2 6
Cucumbers .. ..	each	0 4 0 8	Shallots .. .. .	lb.	0 3 0 0
Eradive .. .. .	dozen	1 0 2 0	Spinach .. .. .	bushel	2 0 4 0
Herbs .. .. .	bunch	0 2 0 0	Tomatoes .. .. .	lb.	0 6 0 9
Leeks .. .. .	bunch	0 3 0 4	Turnips .. .. .	bunch	0 4 0 6
Lettuce .. .. .	dozen	1 0 1 6			



#### IMPORTANT LITTLE THINGS.

##### FARM BUILDINGS.

UTILITY before all things is required in farm buildings, and this test is never applied more forcibly to them than at this season of the year, when it becomes imperative that all the animals of the farm



shall have means of shelter and protection from inclement weather and excessive cold. Such buildings should be spacious, yet snug and warm, airy, and with thorough ventilation without being draughty. Now, if ever, they should be in thorough repair; sound roofs, secure doors and shutters, walls, partitions, floors, and drains all in order, and every attention given to promote the health and comfort of the animals. On some home farms with costly and complete farm buildings this advice may appear superfluous, but there are plenty of such farms in existence with inferior buildings of a very makeshift pattern. Not to new buildings but to the condition of old ones do we now desire to look closely. Have we made all snug and safe for winter? Stockmen are frequently careless about trifles which seriously affect the health of animals under their care, and managers of home farms should see carefully and often to the condition of all the buildings and enclosures. We like large loose boxes for horses, deep roomy lodges for cattle, plenty of snug pens for calves and delicate cows, warm clean pigstyes, and convenient poultry houses. Every yard and enclosure should have a gate or moveable panel for access to manure with carts. We have this convenience even in the small bull and colts yards, so as to remove all the manure with carts, and avoid the use of wheelbarrows. We have many lodges with boarded sides, all of which have had the annual dressing of hot tar well rubbed in. A large old barn which was comparatively useless in its original form has become one of our most useful buildings since we had the interior divided into pens for cattle, and compartments for roots and fodder.

The storage of grain in rat-proof buildings is another important matter. Rats are migratory animals, and we are seldom quite free from them. When we took charge of the farm now under our care we found a large granary over the cow house, which was much infested by rats, although the building was a lofty one with substantial stone walls. Ivy had been let grow up the walls, and this formed a convenient ladder for the rats, but what was even worse was the existence of a ceiling of plaster in the cow house under the floor of the granary. The space between the floor and ceiling must have long been a paradise for the rats, for it proved to be almost full of the husks of corn. The removal of the Ivy and the ceiling rendered the granary safe from further incursions of rats, and we only mention the matter as an instance of stupidity and carelessness leading to a serious waste of grain. Granaries of galvanised iron would appear cheap and desirable buildings for the purpose, and quite vermin-proof. But we believe them to be decidedly objectionable from the fact of the iron sides and roof so frequently becoming much colder than the interior air, the natural result being a condensation of moisture, which falls upon the corn in sufficient quantities to do much mischief. The remedy would be an interior lining with a space between it and the roof and sides.

The smoking house will now be required for the curing of hams and bacon. So plain a building is seldom out of order, but care must be taken to have the adjoining shed well stored with oak sawdust, quite free from any mixture of fir sawdust, which must never be used in the smoking house, or the flavour of the bacon is spoiled. To obtain an equable temperature in the slaughter house in summer we have had the roof thickly thatched with Heather at a cost of 5s. per 100 square feet. Fine perforated zinc shutters and doors have also been prepared for summer use in this building to exclude insects and to afford a free current of fresh air.

IMPLEMENTS.

Costly labour-saving appliances are now common to most farms, and it is only reasonable to expect that due care shall be taken of them, yet it is the fact that a well-managed set of farm implements is the exception and not the rule. This is a matter demanding immediate reform, and this is the best season of the year to examine tools and to have all necessary repairs and painting done. Far better is it to set labourers at work with a paint brush on wet days than that they should lose time, for implements are of necessity so much exposed to wet that an annual coat or two of paint is clearly necessary. As ploughs, cultivators, horse hoes, and harrows come off the land the iron parts should be scraped, the whole made clean and examined, all repairs seen to at once, painting done as speedily as possible, and then each implement is in suitable condition to be put aside with a feeling of certainty that it is ready for use at a minute's notice. We always keep a set of navvy barrows and 2-inch planks on hand for land work. If much used the wheel blocks and sides of such barrows require some repairs annually; the planks, too, should have a band of 2-inch iron hooping nailed round the ends, which tends materially to preserve them and prevent splitting. If reaping, mowing, and tedding machines and horse rakes were not examined and put into thorough repair immediately after haymaking and harvest it should be done now, and great care taken to overlook no flaw or worn part now that there is ample time for deliberate inspection and sound repairs. The full importance of close attention to these matters is well known to all practical men, for he is indeed fortunate who has

never had a breakage of machinery in the midst of harvest, and the vexatious loss of time, which is then indeed most precious.

WORK ON THE HOME FARM.

*Poultry.*—The supply of eggs from the farm is now very satisfactory, a daily supply of about twenty fresh eggs being steadily maintained. So far this is right, but we have not enough eggs, owing to the fact of two serious failures elsewhere, only five eggs being forthcoming from the gamekeeper's poultry house last week, and not an egg from the ornamental poultry house where the Silver-spangled Hamburgs are kept. The cause of the failures is owing to a want of pullets saved from the earliest broods of the year; only in one instance out of three have we been able to have our repeated orders obeyed, that enough strong early pullets should be reared and saved to afford a full supply of winter eggs. The bailiff's wife is triumphant; the other caretakers are so clearly proved to be incompetent or careless that if they are allowed another trial it must be upon the understanding that they are bound to succeed where success is so clearly possible, or resign their charge to the hands of really competent persons. There is really no special treatment necessary to induce pullets to begin laying early in autumn and throughout winter. They must of course be strong and healthy, but early, regular, and frequent feeding insures this. We have before now told how our first batch of pullets this year began laying when they were only four months old, but then it must not be forgotten that they always had the first meal at 5 A.M., and were fed again throughout each day at intervals of about three hours, and so had always eaten and digested one meal in the morning before many chickens have had any food. At one time our losses of spring chickens from gapes amounted to upwards of a hundred yearly. We now avoid this fatal disease altogether by taking hens and chickens right away from the old rearing yards out into the meadows, keeping them there till the chicks have the quill feathers well developed and are safe.

Very heavy demands for chickens for cooking told so heavily upon our forward broods, that in order to avoid complaints of the size and quality of the later chickens we have for several weeks had the fattening coops in full use. The birds are put in these coops three weeks before being killed. They are fed three times with a mixture of oatmeal, boiled potatoes, and chopped suet mixed with milk, and are crammed with bolts of the same mixture steeped in warm milk every evening. This fattens them quickly and renders the flesh very tender and juicy. A somewhat similar process to this is practised at Heathfield, which is the centre of the Sussex chicken trade. The yards of the farmers and many of the cottagers there are crowded with fattening coops, and the fact of fifteen tons of dead chickens being sent off weekly from Heathfield station gives some idea of the magnitude of this profitable business.

*AMERICAN FARMING.*—Two cattle kings of the Pacific coast, Messrs Miller and Lux, are rated at 8,000,000 to 10,000,000 dollars, and were poor men twenty years ago. They have about 90,000 head of cattle and 115,000 head of sheep, of which latter they kill 6000 per month. They own an irrigating canal worth 1,000,000 dollars, fences 300 miles in length (a fortune in itself), in California 600,000 acres of land, in Nebraska 10,000 acres and 15,000 acres of Alfalfa Grass.—(*American Cultivator*.)

*SEEDS AND ROOTS AT THE SMITHFIELD SHOW.*—We learn that splendid displays of seeds and roots are on view at the Smithfield Cattle Show in the Royal Agricultural Hall, arranged by such firms as Messrs. Carter and Co., Sutton & Sons, Webb & Son, and others who contribute so materially to the attractiveness of the exhibitions, but as we have again to note the non-receipt of press tickets we are unable to refer more particularly to the exhibits.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
		Baromet- er at 32° and Sea Level	Hygrome- ter.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Tem- perature.		Radiation Temperature.		
Dry.	Wet.		Max.	Min.			In sun.	On grass.			
1834.		Inches.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	In.	
Nov and Dec.											
Sunday .....	30	30.070	30.2	29.7	S.E.	38.8	37.9	29.3	42.2	26.9	0.790
Monday .....	1	29.882	34.7	34.4	E.	38.2	37.8	30.4	36.7	30.9	0.049
Tuesday .....	2	29.834	35.0	34.8	S.E.	38.2	49.5	32.4	48.4	32.1	0.208
Wednesday ..	3	29.427	33.7	52.2	S.W.	39.3	55.2	34.8	59.7	35.3	0.174
Thursday ....	4	29.254	47.5	44.8	S.W.	41.9	51.4	41.6	62.3	34.9	—
Friday .....	5	29.765	38.9	37.6	S.W.	41.5	47.1	37.2	66.7	32.0	0.413
Saturday ....	6	29.707	52.2	51.2	W.	41.3	55.5	38.3	55.6	34.3	0.024
		29.706	41.7	40.7		40.0	47.8	34.9	53.3	32.5	1.658

REMARKS.

30th.—Fair early, slight snow at 3.30 P.M.; snow or rain all the evening.  
1st.—Sleety rain in morning; dull and damp afternoon and evening.  
2nd.—Dull and drizzly, with frequent showers; much warmer.  
3rd.—Dull morning; fine about noon; wet afternoon; fine night.  
4th.—Wild day with some rain; also some sun in morning.  
5th.—Bright cold day; rain in evening.  
6th.—Warmer, but dull and damp.  
A warmer week than the two previous ones, and one of the very few wet weeks which we have had this year. In fact, the only weeks with 1½ inch of rain have been those ending June 7th (2.57), September 6th (1.63), and December 6th (1.63).—G. J. SYMONS.





18	TH	Royal Society at 4.30 P.M.; Linnean Society at 8 P.M.
19	F	
20	S	
21	SUN	4TH SUNDAY IN ADVENT.
22	M	
23	TU	
24	W	Christmas Eve.

## CYCLAMENS.

[Read at the Monthly Meeting of the Liverpool Horticultural Association December 6th, 1884, by Mr. Hugh Ranger, Aigburth Nursery, Liverpool.]

**T**HIS genus of plants has at different times occupied so much attention that I think the subject is almost exhausted. I do not think, however, that Cyclamens have received more attention than they deserve, either at the hands of the cultivator or from the pen of the scribe. Far from it, for it is almost impossible to over-estimate the value of these plants for decorative purposes, inasmuch as the several species and varieties are adapted for the rockery, the open border, the greenhouse and conservatory, and window decoration; and, moreover, may be had in flower all the year round.

It is not my intention in this short paper to minutely describe the species and varieties, nor to attempt to arrange them in their proper order, but simply to notice briefly the hardy and tender species in their respective classes, and to offer a few remarks on their cultivation. But I may here remark that there exists, and always has existed, some confusion in the nomenclature of Cyclamen. Various authorities have at different times taken the matter in hand, and have named and described several of the species and varieties, but not one of them has succeeded in arranging them in a manner which has met with general acceptance, notwithstanding that the names of Linnæus, Gerarde, Clusius, and Sweet were associated with the early history of Cyclamens. Much later, about the year 1842, the Hon. A. W. Strangways, perceiving the confusion then existing, ventured to arrange them, but apparently only to his own satisfaction, for in the following year another admirer of these beautiful plants—who claimed to know very much about them, having studied them for many years—classified them according to his ideas, and some certainly do not agree with his classification. But we all agree in this: that there are both hardy and tender species, and that both are valuable in our gardens, and that they both amply repay for any care and attention the cultivator may bestow upon them.

Cyclamens, then, as you all know, belong to the natural order Primulaceæ, and are natives of Greece, the Greek Isles, Italy, and Switzerland, where it is said they are found in great abundance. I will briefly notice the hardy species first, which I think are the least known, and certainly the least popular, and I may say the least useful. I will divide them into two sections—viz., winter and spring flowering and summer and autumn flowering, and will commence with the winter and spring flowering section. These are *Cyclamen Cœum*, *C. ibericum*, *C. vernal*, and the hybrids, *C. Atkinsi*, *C. A. album*, and *C. A. roseum*, their time of flowering being from December to the end of May. The only successful way of propagating Cyclamens is by seed. I say the only successful way, because it is possible to increase them by dividing the corms; but this latter mode is, at the best, very slow and very unsatisfactory. The seed of this section should be

sown as soon as ripe, which will be about the month of June, in shallow pans in light rich soil, and placed in a cold frame shaded from the sun, or they may be put in a shaded place out of doors. The young plants should be allowed to remain in the seed-pan till about the end of July or the beginning of August in the following year. The young corms should then be turned out of the seed-pans and potted in store pots or pans about 1½ inch apart, covering the corms about half-inch below the surface of the soil. The pots or pans should then be placed in cold frames turned towards the north. I advise this position of the frames for about two months, as it affords partial shade without obstructing the light. Ventilate freely at all times, and at the end of September the frames may be turned round facing the south, and the light may be taken off on all favourable occasions; in fact, should only be put on in very wet weather or in the case of frost.

The young plants may remain in the store pots twelve months, by the end of which time the corm should be the size of an ordinary *Crocus* bulb. About the middle of August the corms should be placed singly in 3-inch pots, burying the corm fully half an inch below the surface of the soil, and the pots should then be plunged in ashes in a cold frame turned toward the north, as before recommended, and well ventilated. When the plants have fairly started into growth the lights may be taken off as often as the weather will permit, and the frames may be turned round facing the south about the end of September. The plants will now be about two years old, and if they have done fairly well will produce a few flowers for the first time; and when they have done flowering, say the middle or end of May, the pots should be placed outside on a bed of ashes on the shady side of a wall or hedge to rest for eight or ten weeks, during which time they should be watered sparingly, but water should not be withheld altogether. About the beginning of August they should again be repotted and plunged in frames turned towards the north and treated as before advised, giving them pots a little larger according to the size of the corm.

Treated in this way this section of Cyclamen will increase in size and value for many years. This is the system which was practised some fifteen years ago with great success at the Warminster Nurseries, Wilts, where these plants were great favourites of the late Mr. George Wheeler. I have frequently seen them in the frames during the months of January, February, and March, a complete mass of flowers. If planted outside on the rockery, sheltered nooks should be selected, and to preserve the plants it will be necessary to protect them with handlights. If planted in the open border a warm position must be chosen sheltered from the north and east winds.

The summer and autumn flowering sections are represented by *Cyclamen europæum*, *C. hederæfolium*, and *C. macrophyllum*. These may be treated in much the same manner as that recommended for the winter and spring-flowering section, and which I need not repeat, except that the time for sowing the seed will be about the month of March instead of the month of June, and the time of potting about February or March instead of August. By reason of their time of flowering this section is best adapted to outside culture. If planted on the rockery shaded nooks should be selected, or if in borders they will be found to thrive best in positions shaded from the mid-day sun. In addition to the bright-coloured flowers and ornamental foliage of these Cyclamens, most of them possess a very agreeable perfume.

Having dwelt so long upon the hardy Cyclamens, I will now offer a few remarks on the better known and more popular species called *C. persicum*. This species appears to have been introduced into this country from Cyprus about the year 1731, and I suppose at no period since that date were they more popular and extensively grown than at the present time. I also venture to assert that they are found in greater perfection now than they have ever been since their



introduction, in habit, size, with brilliancy of flower, and purity of colour, and this I believe to be due almost entirely to careful cultivation. We have all heard of Veitch's strain, Williams' choice strain, Carter's superb strain, Sutton's prize strain, and the Aigburth strain, and I believe they are all very good, comprising, as they do, good habit and large flowers of various shades of colour, from purest white to deep crimson.

*Cyclamen persicum* and its varieties may be had in flower from the beginning of September until the end of March, or even the end of April. In order to grow them successfully very careful treatment is required. The seed should be sown in September in shallow seed pans, and the pans placed on a shelf close to the glass in a warm greenhouse or cool stove, where the temperature will be about 60°, shaded from the sun, and the soil kept constantly moist. The seed will germinate in about six weeks, and as soon as the first leaf is developed the seedlings should be placed singly in 2-inch pots, and still kept in the same temperature close up to the light, but shaded from the sun. They may remain in these pots until the beginning of February, when they should be shifted into 3½-inch pots, and still kept in a similar temperature, and sprinkled occasionally in the mornings of bright days; and as the season advances the young plants will make rapid growth, which must be encouraged, and great care must be taken to avoid giving them a check in any way. The plants will do in these pots till about the beginning of June, when they may be placed into warm pits for ten days or a fortnight, and then transferred into 5 or 5½-inch pots.

After potting they should be kept close, syringed, or sprinkled with a fine-rose watering can, and shaded for a time until the roots have taken to the new soil, when air may be admitted freely. They should still be shaded from the sun, syringed twice a day, and the house closed at night. The larger size pot will be a good one to flower them in, but if extra large plants are required the best and largest of them may be potted again about the end of July or the beginning of August, this time into 7-inch or 8-inch pots. By the end of October the plants in the smaller pots will be 10 inches across, and those in the larger pots 15 inches across, carrying from 100 to 200 flowers each, provided the plants have done well. Thus by following the course I have indicated, *Cyclamen persicum* can be grown 15 inches in diameter in thirteen months from the time of sowing seed. To flower them well they should be placed in a light airy house with the temperature from 50° to 55°.

If *Cyclamens* are required to be kept and grown for more than one year they should be allowed to rest for about two months after flowering, and they might be either planted out or stood out in the pots in a partly shaded position. In this latter case the soil should not be allowed to become dry, but be watered regularly though sparingly. If planted out they will be less trouble in this respect; and as soon as they show signs of starting into growth again they should be potted without reducing the ball much, placed in a cold frame, and shaded from the hot sun, at the same time plenty of air should be admitted. They must be kept perfectly free from insects, and if the plants can be induced to make free growth they will be exceedingly fine, and produce an abundance of flowers; but if they have been subjected to the high cultivation I have recommended they will barely be worth counting on after the first year, as the corms will be much exhausted, consequently they seldom start freely into growth, and young seedlings are much more reliable for making good plants.

The soil I have found to suit *Cyclamens* best is a mixture of three parts good fibrous loam, two parts good leaf mould—the latter not too much decayed—and a sprinkling of silver sand, with the addition of a little Clay's Fertiliser, say, a 5½-inch potful to a barrow-load of the compost.

*Cyclamens*, like most other plants, are subject to several insect pests. Green fly, red spider, and thrips are the most troublesome. Red spider will be kept down by free unchecked

growth. Green fly and thrips may be kept under by fumigating with tobacco paper, or if the plants are in shallow pits where fumigating will be difficult and hazardous, the plants should be constantly syringed with a weak solution made by boiling quassia chips, and mixing softsoap with the liquor. We are told that *Cyclamens* are the favourite food of the wild boars of Sicily, hence the English name 'Sowbread.'

#### RENOVATING EXHAUSTED VINES.

OF the different causes that occasion the exhaustion of, or decline of vigour and fruitfulness, in Vines, probably the most common one is to be found in the system of training the rods too closely together, or, in other words, overcrowding the wood and foliage. Overcrowding and overcropping are unfortunately too often combined. Examples are sometimes seen where one or two small houses are devoted to Grape-growing, the objects evidently being to secure as much fruit as possible from the limited space at command, with no regard to the permanent vigour of the Vines. The crops, too, it need hardly be added, whether as regards size of bunch and berry, flavour or finish, are always inferior to the crops of such Vines as are allowed sufficient space, all other details being attended to.

What adds very materially to the weakening effects of overcrowding is the strain put upon Vines suffering in this way when they are started into growth early in the season with fire heat. Early forcing is necessarily weakening to the strongest of Vines, and it is on this account that the system of forcing permanent Vines has, in many large places, been discontinued, the early supply being kept up from pot Vines.

In some cases, when means are being used for the renovation of Vines which have become exhausted by overcrowding, it is to be feared the real cause is not recognised. In one instance I know of the border was renewed, while the branches or rods, which were only some 18 inches apart, were left undisturbed. A year or two afterwards nearly half of the old rods were removed by a new gardener, and forthwith the Vines improved rapidly, simply because the increased vigour of the top growth was accompanied by correspondingly vigorous root-action. Despite the advantage of a new border, the improvement in these Vines could never have been so marked had the overcrowding system been continued. I have known Vines wonderfully renovated in the course of four years without resorting to the usual remedy of renewing the border, by a careful system of removing old and training up young rods annually. Not only was the improvement very remarkable at the end of the time referred to, but a supply of fairly useful fruit was maintained from the time the renovating process started. With reference to the border, it was often remarked that it must have been composed of thoroughly good material, and also well constructed mechanically. The Vines were thirty years old at the time to which the above remarks refer, and with the exception of covering the border in winter nothing had been done to it from the time they were planted.

There are two large vineries in the gardens on the ancient estate of Enterkine, near Ayr, which afford a striking example of the recuperative powers of old exhausted Vines. According to information furnished by one of the oldest gardeners in this county, these Vines are upwards a century old. As to their history for the greater part of that time I have no knowledge, but the present gardener, Mr. Hill, informed me that when he took charge of them about eight years ago, so overcrowded and neglected was the appearance of the houses that they reminded him of a Bramble bank. Nothing daunted, however, Mr. Hill, with characteristic energy, addressed himself to the task, if possible, of putting them into a more satisfactory condition. In renewing the borders the roots were not disturbed, but were simply laid bare, so that they might readily lay hold on the compost of which the new border was made. Young wood has been encouraged and trained up, and the old wood removed. During the last few years, so great has been the improvement on these Vines, that Mr. Hill's employers remarked that he had wrought a miracle on them. On visiting the gardens last summer early in June, the earliest house was far advanced, a few of the bunches being ripe. The Vines were carrying a very creditable crop, and no trace of red spider was visible. Overcrowding is not tolerated, Mr. Hill's idea being that every leaf on the Vines should be exposed to the light.

The effect of regular top-dressings in producing surface roots, which greatly promote the health of Vines, is noteworthy. Shortly after the subject was brought before the readers of the Journal last January by one of the most reliable authorities on



Vine culture, the outside and inside borders of a span-roofed vinery were examined. For a considerable number of years past a good dressing of cowdung was regularly applied to the surface of the inside border, which was found full of roots; while in the outside border, which has had no attention in this way, very few roots were found within 18 inches of the surface. As the vinery is being gradually furnished with young rods, the formation of young rootlets may also be expected. The nutritive properties of the soil being apparently extinct in the surface portion of the border, the young roots would be of little or no advantage, therefore means will be taken as soon as possible to induce them to the surface. The above particulars connected with the renovation of Vines were taken note of as being likely to prove useful to myself; and on the principle advocated by Mr. Temple in his interesting and instructive article on fruit trees in the Journal of the 4th December—that a plain statement of facts is better than theorising, I have thought it not inappropriate to place them at your disposal on the approach of the pruning season.—D. M.

### ROSES.

LAST autumn, as soon as the wood was matured, cuttings of the different varieties, consisting of Hybrid Perpetuals, Teas, Noisettes, and Hybrid Teas, were taken off, in selecting which only those were chosen which were moderately strong and thoroughly matured and having a heel or joint at their base. They were inserted into a sandy border on the western side of a wall and covered with ordinary handlights. When inserting the cuttings the soil was made as firm as possible round them; a moderate watering was then given with clear limewater, as as to prevent worms working amongst and disturbing them. The tops of the handlights were allowed to remain on them for a few days, being removed at night; they were also shaded from intense sunshine, so as to preserve the foliage as long as possible. After being so treated for three weeks the lights were allowed to remain off altogether, except to protect the cuttings from heavy rains and severe frosts. On examination in March it was found that 90 per cent. had formed roots; they were then placed in 4-inch pots in sandy loam, mixed with a small portion of well-decayed leaf mould, and placed in a cold frame, in which they were allowed to remain until the end of July, giving them abundance of air at all times, except during heavy rains, from which they were protected.

In the month of June they were placed into 6-inch pots, using the same kind of soil as before. In growing, if an occasional shoot showed a tendency to exuberance the point was immediately pinched off, by doing which compact sturdy plants were formed. They were removed from the frame early in August and placed on ashes in a position fully exposed to the sun. At this period each of the Tea, many of the Hybrid Teas, and some of the Noisettes and Hybrid Perpetuals, began to show buds on the lateral growths. At this time they received an occasional supply of weak liquid manure made from soot and sheep manure largely diluted with water, which caused them to develop good foliage and flower buds. They were transferred to the Rose house early in October, from which date up to the present it has been exceedingly gay. These miniature plants, each bearing half a dozen good-sized Roses, are found very useful for decorating the drawing-rooms, and for filling small vases they are exceedingly chaste and pretty. Since they have been in the Rose house a little fire heat has been used in wet weather and on cold nights, just sufficient to expel damp cold air, and moderate ventilation has been given at all times.

As this method is so simple and inexpensive, I beg to recommend it to your amateur readers who are desirous to prolong the Rose season to Christmastide. The following are the most free and effective:—Madame Lambard, Niphetos, Marie Van Houtte, Alba Rosea, Perle des Jardins, Anna Ollivier, Catherine Mermet, Isabella Sprunt, Safrano, Jean Ducher, Madame Bravy, Madame Falcot, Madame Margottin, Princess of Wales, Souvenir d'un Ami, Duke of Connaught, Earl of Pembroke, Marechal Niel, Caroline Kuster, and La France.—VITISATOR.

### THE NUTMEG.

OF immense commercial importance is the Nutmeg tree, *Myristica moschata*, or *M. aromatica*. It is also ornamental by its clusters of berries or fruit. The plant is not commonly met with in this country, and it is seldom grown except in botanical or officinal collections. Its cultivation, however, is not difficult. It thrives in a sandy loam and brisk heat, and cuttings strike freely inserted in sand and placed in heat under a bellglass.

Of the Nutmeg tree Dr. Hogg has written as follows in his "Vegetable Kingdom":—"It is a native of the Moluccas and neighbouring islands, but is now cultivated in Java, Sumatra, Penang, the Isle of Bourbon, Mauritius, and other parts of the East, and in Cayenne, Martinique, and some of the West India islands. It attains the height of 30 feet, with a straight stem and a branching head. The leaves are oblong-oval, glossy on the upper surface and whitish beneath, and with an aromatic taste. The flowers are male and female on different trees, insignificant, and of a yellowish colour. The fruit is round or oval, about the size of a small Peach, with a smooth surface, green at first, but becoming yellow when ripe. The external covering, which may be called a husk, is thick and fleshy, containing an austere astringent juice; becoming dry by maturity, it opens in two valves, and discovers the nut covered with its aril, or mace, which is of a beautiful blood-red colour; beneath the mace is a brown shining shell containing the kernel or Nutmeg.

"A plantation of Nutmeg trees is always made from seed, and it is not till the eighth or ninth year that the trees produce flowers. The sexes



Fig. 91.—*Myristica aromatica*.

being on different trees, after the plants are two years old they are all headed down and grafted with scions taken from the female tree, reserving only one male stock for fecundation. The natives of the Moluccas gather the fruit by hand, strip off and reject the pulpy husk, detach the mace carefully, and expose it to the sun, which soon changes its beautiful blood-red colour to a light brown; it is then sprinkled with sea water to render it flexible and preserve it. The nuts are first sun-dried and then smoked, until the kernels rattle against the shell. This shell being removed, the kernels are dipped twice or thrice in lime water, laid in heaps for two or three days, wiped, and packed in bales or barrels. The unripe fruit of the Nutmeg is frequently preserved in sugar in the East; and before doing so it is necessary to deprive it of its acrid properties by soaking it in spirits."

### FUMIGATING.

It appears to me that the operation and effects of fumigating are still misunderstood, although there has been a great deal written on the subject from time to time. Even "B.," who is an adept at insect-killing, clings to some of the old notions, as witness his otherwise admirable article at page 498.

Most people have an idea that all you have to do is to fill the



house as quickly as possible with smoke, limiting the density only according to the nature of the plants it contains. Now, I believe it can be clearly proved that it is not the quantity of smoke which kills either insects or plants. No amount of smoke from good material will injure the most tender Fern if the operation is properly carried out. On the other hand, plants may be very much injured when a small quantity of smoke only is produced. I think I understand the subject sufficiently for all practical purposes, but I am not able to describe it in a scientific manner. However, I will do my best to make my impressions understood.

It is not the smoke which kills at all, but something which is liberated during the process of combustion, possibly nicotine, and the slower in reason combustion goes on the more potent are its effects. When combustion is rapid a twofold evil is committed—the nicotine, oil, or whatever the active principle may be, is consumed without reaching the insects, and the fumes being driven off at a great heat injure the plants.

A good fumigator is quite as essential as good material to use in it. One made the shape of a saucepan but rather deeper answers perfectly; 10 inches deep and 8 inches across is quite as large as it ought to be for the largest house; rather use two such than one of very large dimensions. Three or four quarter-inch draught holes are made near the bottom, and a flat loose lid should have half a dozen smaller apertures. It is very important to have this lid.

Charcoal may be used as recommended, but it is more convenient to get a bright red hot coal from the stokehole; one piece less than the size of a hen's egg is ample. This is placed in the middle of the bottom of the pan, a handful of narrow strips of tobacco cloth laid over before it is carried into the house, and then begin putting a sufficient quantity in, which experience only can teach; no further attention is necessary. It may be one, two, or three hours burning out if it is left to itself. No damping is practised, but flaming with the limited draught I allow is unknown.

If the operation has been properly performed the lid and a good portion of the sides of the pan on the following morning will look and feel as if they had been fresh tarred. If this appearance is absent we may be sure that combustion has been too rapid, and plants will probably suffer more than insects. The white fly which infests Tomatoes is killed by a very little smoke, but of course the eggs are not touched by it. I do not know whether any naturalist has studied this insect, but I am of opinion that the female is wingless, and it as well as the eggs will be found on the leaves.—WM. TAYLOR.

### THE MOST POPULAR APPLE.

In the list of 120 varieties of Apples selected the greatest number of times by 130 exhibitors at the National Apple Congress, reprinted in the last number of the *Journal of Horticulture* from the official report of the Congress, an interesting fact appears to have escaped observation.

It is recorded that the most popular Apple is Lord Suffield (a culinary variety), it having obtained 101 marks of a possible 130. King of the Pippins is placed second, or the leading position in the dessert class, with 98 marks, this being only five points in advance of the third favourite (another culinary variety)—namely, Dumelow's Seedling or Wellington. On referring to the report, it will be seen that either Lord Suffield or King of the Pippins should be displaced in favour of the fine Oxfordshire Apple raised by one Kempster of Woodstock, and now generally known as Blenheim Orange or Blenheim Pippin. It is not difficult to conjecture the reason why this variety obtained 52 marks as a dessert variety and an additional 63 as a culinary sort, and it may be worth while to point out what its position in the poll actually is. The majority of exhibitors choose to class it as a culinary Apple, and this brings it into competition with Lord Suffield, or the one so far described as the popular Apple that obtained 101 marks. Now, granting it should take its place in the second section, the 63 marks should be supplemented by the 52 marks that it obtained in that of the first. This would place it in the premier position, with a majority of 14 marks over Lord Suffield; or if, on the other hand, considered as a dessert variety, it would surpass King of the Pippins by a majority of 17 marks. In either class it would be at the head of the poll with only 15 marks below the greatest possible total, and occupy either as a dessert or a culinary kind the position of first favourite or the most popular Apple.—S. P. E. S.

### ROSES AND LEGITIMATE MANIPULATION.

ACCORDING to the reply sent to the Leek Rose Society, or rather the letter to the horticultural papers from the Honorary Secretaries of the National Rose Society, it is probable that some regulations will be issued by the latter Society as to what amount of manipulation or trimming—and no word expresses the performance better—the Rose may be subjected to without running the risk of disqualification. Possibly, then, some ventilation of the subject may be advisable.

It must come, and that most naturally to every lover of flowers in watching the steps that Nature takes in the development of a bloom, to perceive that certain of these processes may be retarded or precipitated

by very slight manipulation; indeed, in its strict sense this latter word is scarcely applicable, as without any touching of the hand a well-directed breath may unfold a bloom that but for the process would have remained *in statu quo* for hours. In the Rose tribe this condition is far more marked in the Tea varieties. I recollect on one occasion at a small exhibition seeing a class of single specimens in which the Judges, not being special Rose-growers, hesitated a long time over the awards. Amongst the exhibitors themselves there was little hesitation in awarding first position to a grand bloom of Marie Van Houtte, taking for second a very pretty but scarcely open bloom of Catherine Mermet. The Judges felt disposed to award the premier honours to a Maréchal Niel, very large, but decidedly past its best; however, they ultimately awarded first to Marie Van Houtte, and second to Maréchal Niel. Commenting on the decision to a nurseryman subsequently, the latter took up the bloom of Catherine Mermet, and turning to the exhibitor, a young aspirant, said, "If you had done this," and he blew into the bloom, which immediately expanded, "your chances would have been far greater." There was not the slightest doubt that the puff had been like the touch of the magician's wand, and had disclosed beauties unseen before.

Again, a bloom in opening gets one petal tied or stuck down, and a drop of moisture is equal to effecting this sometimes—the bloom, unless this petal be eased from its position, will be more or less deformed. Here, again, a puff or a small paperknife passed between the fastened petals releases the imprisoned portion of the bloom, and allows its expansion. Even the most punctilious would allow that either of these positions is honest and fair.

Tying up blooms to prevent too rapid expansion, or to assist blooms to bear the shakings of carriage and transit, is another form of interference with a flower, which, provided it be removed before judging is commenced, cannot be considered unfair. At the same time I am not prepared to say that it is always a success. Not a few flowers appear to resent the treatment, and having been interfered with in development manifest a disposition that even the "move on" of Policeman X would fail to alter; whilst others, again, released from their bondage rapidly pass into the eye-opening stage so fatal to success. All these points have to be calculated, and experience on them has to be learnt, and most often through failure, but it cannot, I think, be maintained that there is in them anything dishonest or illegitimate.

The addition of foliage to a Rose is now considered by many a sufficient cause for disqualification; but although added foliage may be a disqualification, supports of various kinds from sticks to wire are passed over. The latter, however, does not pretend to be any meddling with the bloom itself, and many Roses would discard all such assistance. Some Roses of peculiar habit are feeble in the flower stalk, notably the prima donna in the last general election, Marie Baumann, whilst many blooms of Maréchal Niel have also a pendant habit, which makes it often difficult to place these Roses in a tube so that they will retain the desired position. It would be sometimes possible to accomplish this by stuffing the hole with moss, but as in the hurry of this performance a stray leaf may be included and appear as "added foliage," the exhibitor may thus very unintentionally run the risk of disqualification. Such aids as stick or wire supports are not alterations or additions to the bloom itself, and seem to me much in the same category as the paper or card adornments of Asters, Picotees, and other flowers staged for exhibition. Or, again, how rarely is a plant exhibited as a specimen plant without numberless sticks and supports; all these have been used to bring the plant into a certain form of growth, and so far I have never heard anyone object to these additions—they serve to show the beauties of the plant in the best possible light. So with the wire or stick, without interfering with the bloom itself they place its beauties in a favourable position, and such aids I apprehend must always be considered legitimate.

Let us get on a step further. Is the removal of one or more damaged petals (generally on the outer part of the bloom) a reason for disqualification? I recollect once talking to a nurseryman when I had been defeated in a 'single-specimen' class. He remarked, "Your Triomphe is a very pretty Rose, but if you had removed these two petals (soiled) you would have had a better chance." As this removal of petals is a matter most difficult to detect, and also possible to be naturally simulated in some blooms, I do not fancy this will become a cause of disqualification. It will have to be left to the conscience of each exhibitor, and doubtless some will reason that as it is perfectly legitimate to pick off a dead or damaged leaf from a specimen plant, there can be no harm in removing a petal from a bloom. Each exhibitor must decide this knotty point for him or herself. Personally I have no hesitation in saying that were I judging I should be disposed to favour the bloom shown as cut from the plant. Having now glanced at legitimate or possibly legal manipulation, I may hereafter venture on the ground beyond the legitimate limit. I should much like to see the whole subject well discussed.—Y. B. A. Z.

[The rules prepared by the National Rose Society, and adopted at the annual meeting on Thursday last, appear in another page, and it is scarcely necessary to add that our correspondent had not seen these when writing his remarks.]

### GRAPE MUSCAT HAMBURGH.

THE remarks on the above Grape by Mr. Iggulden some time since are interesting, proving how widely the same variety varies in different soils. My experience of the variety in question is not of very long duration, for previous to my taking charge here seven years since I had



never been employed where it was grown. I have not, like Mr. Iggulden, had any difficulty in getting this Grape to set. With us it sets and swells freely enough in a house chiefly devoted to Black Hamburgh, and where no fixed temperature is maintained, this being to a great extent varied with the weather; but the failing point here is in its colouring badly. We have had bunches weighing over 2½ lbs. each with berries regular in size, but quite red. I once saw this Grape exhibited at a Yorkshire show by a Mr. Muir, I think, in faultless condition. Every berry was perfectly black and of the full size; in fact I think the bunches are models of what a black Grape should be. Unfortunately I have never yet been able to produce anything like them.

When I took charge here this Grape was pointed out as subject to shanking. The roots were then partly inside the house and partly out, and remained so for twelve months afterwards, when the roof of the vinery was extended, covering the whole width of the border, so that I have had a little experience with the Vine under two conditions. The one season which I grew it with its roots partly outside there was some shanking, but since the whole of the border has been under glass I have not observed a shanked berry. Though this Grape is not a vigorous grower, it is somewhat of a gross feeder, and will well repay the trouble of removing, every alternate year at least, all top soil down to its roots, and supplying good rich soil. I am now trying this variety worked on the Black Hamburgh, but not, as it is generally done, close to the ground or on the stem below the foliage, but several feet from the bottom of the stem; below the union the Black Hamburgh will be allowed to bear leaves and fruit as before the grafting took place. I am inclined to think that if the stock is not allowed to carry some of its own foliage it is questionable whether the scion will derive much benefit from it after the lapse of a year or two. The growth worked on the Black Hamburgh last May is very much more vigorous than that on the older but healthy Vine on its own roots.

Are the roots of the Vines under Mr. Iggulden's charge outside? In his writings on kitchen garden matters he speaks of having to deal with a cold heavy soil. If the roots are outside, and the Vine borders have been made of turf taken from such a soil, that may account for the bad setting of this Grape. Mr. Barron speaks of it as "First-class in quality and appearance, but somewhat delicate." I can endorse the first and last items of description, but unfortunately I have not yet been able to get it first-class in appearance. If there is any little secret in the cultivation of this Grape those possessed of it would be doing a service by divulging it.—T. A. B.

### ELEPHANTS AT HOME.

THE elephants of which I wish to say a few words are not those of the animal kingdom but of the vegetable world, and the elephants of my present remarks are truly noble in many instances, and are kept by Mr. James Cypher of the Queen's Road Nurseries, Cheltenham. This famed collection of plants contains some grand specimens, and right proud is the owner of them. The Azaleas in their way are giants, and are good all round, not stiffly tied into shapes; their growth is short, and good plump buds in the earliest of them speak of the waning months of the year. Huge examples of Brilliant, Flag of Truce, and Apollon, 4 feet in diameter, were noticeable, and in a lean-to house adjoining there was some grand colour left in Rhododendron Duchess of Edinburgh, a specimen such as few possess. The plant in question has done good service among greenhouse flowering plants at several leading exhibitions of late, and has illustrated in a remarkable manner what can be accomplished when the treatment is thoroughly understood. To say the least, this Rhododendron is beyond doubt the finest of all summer-flower greenhouse plants, and as an exhibition plant for August and September it is unique. A fine example 2 feet 6 inches high, and as much in diameter, had no less than forty-five trusses of its brilliant and glittering orange-scarlet flowers, which are sufficiently vivid to produce a lasting impression on all who behold it. Then the eye rests on an assemblage of that useful variety known as Princess Royal, the soft delicacy of colour contrasting well with the dazzling brightness of the first-named. The latter is here largely used for bouquet work, for which it is so well adapted.

Now I turn my attention to some of those veteran prizewinners which suggested the heading of these notes. I mean the Heaths, the collection of which is doubtless the finest in Europe, a collection which has conquered in the past, and which it is only fair to presume will with the same skilful management and care add in the future many more victories. Erica Parmentierii rosea, a grand example, some 5 feet through, had done its work, as had some smaller specimens of the same variety, all very healthy. Then came E. depressa, a remarkably vigorous plant, which is claimed to be the finest extant; it is 3 feet through and 3 feet 6 inches from the pot, and certainly the most compact all-round plant I have seen. There is a flowering giant of E. Austiniana, 5 feet through and 4 feet high, which was *en masse* with its flowers, and was at the time of my visit, September 9th, in its prime, which sufficiently illustrates the long-continued season of flowering to which these plants are prone. Then in turn came E. Marnockiana, E. æmula, well furnished, and E. obbata. Another fine specimen of the genus was found in E. MacNabiana, which was covered with flowers; next it was a grand piece of E. ampullacea Barnesii, which had ceased flowering, and which is some 5 feet through. Just imagine this monster, 4 feet high, so densely covered in pure white flowers that its foliage is almost hid from view, still this is exactly what thousands of people witness yearly in many parts of England. Among others I may mention E. Candolleana, E. tricolor dumosa, and E. Lindleyana, all good plants of enormous proportions. I may in passing briefly state the system which is here adopted. In the first place each plant has its work marked out, and from long-continued practical experience in these matters Mr. Cypher is duly qualified in marking out the course for each; these would seem to fit themselves to their requirements with remarkable precision. When they have completed their allotted task they are not allowed to distress themselves by flowering to their utmost

extent, but at the earliest opportunity their flowers are carefully removed, and the strength which would otherwise have been sacrificed is thus retained. In cases where these specimens are in the open the pots are well matted round to prevent the sun scorching the tiny fibres around the sides.

The Crotons in their way are alike remarkable both for size and colouring. These Crotons evidently thoroughly enjoy plenty of heat, abundance of moisture, and full sun. These are the great essentials to the production of fine, vigorous, and well coloured plants. Here were specimens of C. majesticus and C. Queen Victoria 6 feet high in each case, and richly coloured. Then came C. angustifolius, 6 feet high and the same in diameter, one which holds its own still in many an array of foliage plants. This is simply perfection. It is large and old age, but does not lack vigour, for it seems as though it might appear in as many a competitive group as it has done hitherto; but one thing is certain—it is destined to become no larger than it now is, for it is no slight undertaking to carry it conveniently from place to place. This, with the others, receives annual pruning, which is done by a skilful and yet a heavy hand. It seems hardly credible that these grand specimens, which as I write these remarks are clad with splendour, should, ere this appears in type, be devoid of a leaf; indeed, some were already pruned—e.g., Disraeli and Queen Victoria—though some excellent men do not approve of it to the extent it is here carried out; but the proof is in the results, and these are well known. The last two of these fine plants I shall name are C. interruptus aureus, a distinct plant, and C. Sunset; the latter, I was informed, requires careful culture, but without doubt surpasses all the rest for colour when seen in perfection. The habit is erect, the leaves somewhat lanceolate and from 12 to 15 inches long and 1 to 2 inches broad, the upper surface is of a deep bronzy green, the margins and midrib of a vivid crimson scarlet, with occasional blotches of golden yellow. It is certainly a Croton of great promise, and it has a constitution which but few possess. These Crotons are all pruned annually when they have finished their round of exhibitions, and potted if necessary, breaking almost immediately; they make abundance of free vigorous shoots by the end of the year; and being at all times near the glass, exposed to all possible sun and light, they commence colouring early in the year, and are ready for use when required, the richness of their markings being much improved by the newly made growths, which have necessarily a clean fresh appearance.

The collection of Ixoras in themselves are indispensable in a collection of stove flowering plants. With these are associated various kinds of Dipladenias, which in their time have puzzled not a few growers of stove flowering plants. Many fine examples are contained in their respective groups. Among the former were the white-flowered Colei coccinea in flower and Williamsii. To give the reader some clear conception as to the extent of pruning here practised, I may state that one of the specimens of Ixora Williamsii which has figured at various shows during the present year, when its dimensions were 6 feet high and through, is now a mere skeleton, and is not more than 2 feet high and as much through, so that 4 feet of growth have been pruned away, for which Mr. Cypher claims that he gets stronger shoots, better foliage, and, above all, more massive and prominent trusses. More than this we cannot desire, and I am sure the results are highly gratifying. Ixora Westii and I. salicifolia are so widely distinct from all the rest as to call forth special notice, the former from its pale salmon pink trusses and dark thick coriaceous leaves, and the latter from its long linear acuminate willow-like leaves.

The next house inspected was filled with a variety of useful plants, among which were abundance of Impatiens Sultani and many Dendrobiums. Though an ardent believer in the free use of the pruning knife, Mr. Cypher is strongly opposed to pruning Dendrobiums. Some pieces of D. Ainsworthii, Wardianum, and others were shown me which had been experimented with, and pitiable objects they were too. I was next shown into a cool house—a reserve, so to speak, for flowering exhibition plants. Here the plants are hardened, especially those which continue some time in perfection, before going their respective journeys. The first to meet the eye was Ixora Williamsii in fine condition and carrying fully one hundred massive trusses, and beside it was I. Pilgrimii, a hybrid from the first-named and raised by the late Mr. Pilgrim of Cheltenham. The trusses are well-formed and compact, and it is in all respects a first-class Ixora. Next to these came a series of different forms of Anthuriums, the champion being Anthurium Cypheri. This is no exaggeration, for we have before us the typical Schertzerianum; then Veitchii, then densifolium. Next in order of merit we will place Wardii, and at the head of the list comes the unique specimen bearing Mr. Cypher's name. The colour and size of the spathe are enormous. This variety has produced spathes this year 8 inches in length and 5 inches in breadth, the colour being of the most intense crimson-scarlet. This has been deservedly awarded a first-class certificate. Passing hurriedly over specimen and half-specimen Heaths in abundance, among which were good plants of the E. ventricosa section, we came to a fine lot of Cypripedium villosum and insigne in cold frames, healthy and vigorous and exhibiting numerous flower scapes, and then we came upon that far-famed and noble example of Erica Cavendishiana 6 feet high, which in its old age continues to flower with remarkable freedom. Further on were Azaleas, Genetyllis, Erica affinis, and a nice little batch of Acrophyllum venustum.

Among Palms and Cycads Pritchardia pacifica, Latania borbonica, Cycas circinalis, and Encephalartos villosus were growing over a tank of water, the three last-named each having a spread of leaves 16 feet across. Some four species of Kentias and one or two Dasyliirions were among the occupants of the conservatory, where Lilium speciosum was flowering abundantly in pots. Allamandas were well represented, and were in good-sized well-flowered plants.

Another department of considerable importance contains the Orchids. These are in numbers and generally well done. First to be seen in flower was Mormodes laxatum eberneum, flowers creamy white with purple lip, and slightly fragrant. Cypripediums were in excellent condition, especially such as C. Lawrencianum C. niveum C. hirsutissimum, C. Spicerianum, and C. punctatum violaceum. Aerides Rohanianum, a rare plant which as yet has not flowered, is showing a good spike; many spikes were to be seen on plants of Saccolabium Blumei. Aerides Leonii, a rare species, is also here, and Dendrobium barbatulum was remarkable for its vigour, having growths fully 13 inches long. This seems a fastidious species, and one which



cannot be induced to produce blooms after the imported pseudo-bulbs have flowered; but, judging by the growth made this season, which surpasses the old pseudo-bulbs considerably. Among a host of other species of *Dendrobiums* were batches of *D. bigibbum*, *D. Brymerianum*, and *D. Goldiei*, all doing well, together with a magnificent specimen of *D. formosum giganteum*. *Lycaste Skinneri* and *Odontoglossum madrense* were flowering, the latter having seven of its fragrant whitish flowers on a spike. *Oncidium varicosum Rogersii* had a fine spike bearing thirteen lateral spikes. *Barkeria Skinneri*, with delicate rosy mauve-coloured flowers, was among the few occupants of the *Cattleya* house in flower. Then there are hosts of *Odontoglossum* looking well, and *Masdevallias* bearing them company. Among many species of the latter were gatherings of *M. bella*, *M. Shuttleworthii*, *M. Reichenbachiana*, *M. Chimæra*, and *M. tovarensis*, the last-named being a satiny white and a profuse bloomer. A healthy plant represented the rare form known as *M. racemosa Crossii*.

The cut flower trade forms a considerable item. In the first instance abundant supplies of flowers are always wanting, and quantities of Maiden-hair Fern too, each of which receive special attention. White flowers with delicately toned shades of flesh and rose are greatly in demand. In this department Mr. Cypher has in his daughter a lady whose skill and refined taste for the arrangement of choice flowers in bouquets and dinner table decorations finds few equals, which may be gleaned from the fact that during the past few years several hundred prizes have been awarded her from all parts of the kingdom.—E. J.

### DRESSING FRUIT TREES IN WINTER.

WHERE any fruit-bearing tree has been attacked by insects in summer when the leaves were abundant and green it is a difficult matter to destroy the insects without killing the foliage or injuring both it and the young wood; but in winter, when the leaves are off and the wood matured, strong dressings and brushings may be applied without injuring the trees. There is then less harbour for the insects than when the foliage is in the way, and for these reasons wherever insects exist and it is possible to get at them they should be destroyed now. To do this we could name some scores of insecticides which have been invented from time to time, but we will limit our list considerably. Of all we only deal with three—petroleum, Gishurst compound, and lemon oil. The two former are well known, and the latter is a recent introduction of much promise. The petroleum is a cheap and excellent insecticide, but it requires careful handling, as besides being a certain and deadly insect-killer it will injure the leaves and the wood too if applied too strong or not washed off in time. Mealy bug, scale, and American blight are the worst of all fruit tree insects to destroy, and the petroleum will do it more effectually than anything. To every gallon of water add one wineglassful of the oil and half an ounce of washing soda; mix them all together, and then apply it with a sponge, a syringe, or a brush. Tall trees may be syringed; very badly affected parts should be brushed, clean young shoots may be sponged. Rough spurs of Vines and knots or cankered parts on Apple and Pear trees should be hard scrubbed. The oil mixes much better with the soda and water than in the water alone, and the soda itself is a good cleanser.

A common way of applying the oil is to add one wineglassful to four gallons of water, agitating it with the syringe and then applying it. This may be allowed to remain for five minutes, and then it is washed off by syringing; but although this will destroy thrips, green fly, and red spider, it will not kill all the mealy bug, scale, and blight, and these are the worst. They cannot, however, resist the slightest drenching at the rate of one wineglassful to a gallon, but it must not be allowed to remain on more than one or two minutes. In fact, as it is put on from one bucket it should be immediately washed off by tepid water from another, and all will be well with the trees. Its touch is instantaneous death to the insects, and it need be left no longer. In using it on Vine rods one man should brush it on while another follows with clean water to sponge it off. Peach trees in the open and under glass should be treated in the same way, and Apples, Pears, or any hardy fruits should be treated in the same way. It is a good plan to use the syringe in dealing with wall trees, as very often the insects are harbouring in the joints of the stones and bricks, and it is well to include them.

Gishurst compound is a safe insecticide to work with, as unless applied at the full strength it is harmless to the wood, but it is not so deadly as the oil to the insects, and we cannot do better at this season than advise all who have any troublesome pest on their trees to dress them at once. If they are afraid of the oil doing harm let them try it on one or two trees this winter and be guided by their experience afterwards.—M. M.

DURING the season of rest an opportunity is afforded of carrying out many operations necessary to remove any defects in fruit trees due to soil, roots, growths, or insects. These I shall treat of under their respective heads.

Soil.—This is undoubtedly the most important factor in fruit

culture. If it be wet the tree will make long-jointed sappy or watery growths, being late in starting into growth in spring, and continuing the growth until late in autumn, keeping the foliage until destroyed by cold, and even then it is retained in its browned condition for a considerable time. The trees will be sterile and cankered, and if the climate be moist there will be an abundant growth of moss and lichen on the trunks and branches. Drainage in this case is the only remedy, and is the first and most important means of improving land. In order to ascertain if the soil requires drainage holes should be dug 4 feet deep in different parts of the ground, and if water stand in them for any length of time the necessity for drainage is apparent. The drains should not be nearer the surface than 3 feet, and need not be deeper than 4 feet. In a stiff clay soil they should not be more distant apart than 15 feet, in a strong loam 18 feet, and in a shaly soil they may be 21 to 24 feet apart. Three-inch pipes are best, and the mains should be proportionately large, all having proper fall and outlet. Two-inch pipes or even less are sometimes used, but I have so often had to take them up and employ the larger size that I shall always give preference to the latter, which, though somewhat more expensive, are decidedly cheapest in the end. Drainage increases the temperature of the soil, and secures the percolation of water and air. Poverty of soil sometimes is the cause of unprofitable crops; the trees make but little wood, form an abundance of fruit buds, and bear enormously, but the fruit is small and crab-like. The remedy is, of course, to enrich the soil, and this can best be done by surface dressings of rich material. The loose surface soil may be loosened down to and scraped off the roots, then 2 or 3 inches thickness of decayed manure applied, or a similar depth of the thoroughly decomposed rubbish with the woody portions charred, which is also improved if a tenth of lime has been added. The old soil may then be returned, or as much of it as will cover the manure. In the case of orchard trees a top-dressing of manure, or if the ground be mossy preferably of the compost above described, will be of great service, and if repeated will soon effect improvement. Winter surface dressings should be afforded between November and March. When manure or rich compost is scarce, the contents of the cesspool or manure tank emptied on the ground about fruit trees will greatly enrich the soil.

Soil may be too rich and too loose to obtain satisfactory crops of fruit. The remedy in this case is to make the soil firm by treading or ramming. This will have a tendency to check growth, cause shorter-jointed and sturdier wood, and induce fruitfulness, which when attained is the best corrective of undue luxuriance. It generally happens, however, that root-pruning has to be resorted to before the growth is sufficiently checked, and the soil firmed at the same time so as to effect a good result.

Occasionally fruit trees are neither strong, weak, nor stunted in growth, the blossom is abundant, but it falls without setting, or is cast for the most part in stoning. In some instances this arises from dryness of the soil, perhaps due to the roots being under a path. Making holes in the surface of the pathway with a crowbar to a depth of 18 inches, and filling these repeatedly with liquid manure until the ground is thoroughly moist, has, in several instances, been attended with the best results. It is a practice well worth pursuing in the case of trees against high buildings with gutters to carry off the wet, as the soil for some distance from the wall becomes very dry, and a good soaking in spring before the blossoms expand, again when the fruit is swelling, with another or more between then and the last swelling, would, in most instances, well repay for the labour.

But we sometimes see fruit blossoms fail to set, or they fall instead of stoning, without, in either instance, apparent cause, for the trees are in every other respect satisfactory; they neither make too much wood, nor can it be attributed to weakness or want of moisture or nutriment in the soil. I once had some Cherries against a wall some 100 yards in length, and they were very disappointing. The usual remedies were tried, such as lifting, root-pruning, firming the soil, applying manure or water, and mulching, but the results were just the same. The whole garden of about two acres had been heavily manured and cropped, and it was considered advisable to bring in some fresh maiden loam, but as this is very difficult to procure in most places, I had to be content with lime, which was applied with the manure as usual. The Cherry border had more than its share of the lime; it must have had a bushel per rod. The Cherries bore abundant crops, and I found a similar result attend the application of lime to Apricot, Plum, Peach, and Nectarine tree borders. So pronounced was the result of the application of the lime that I became a firm believer in its potency. In calcareous matter we undoubtedly have an important aid to successful fruit culture, and soils deficient of it should have it afforded not more distantly than every third year, and not in great quantity at a time



a peck per rod being sufficient, applied in the fresh slaked state, which is different to applying it in the old mortar or chalk condition, as we do in the formation of fruit borders, one part in ten not being too much, especially for the Vine and Fig. The best time to apply lime is in spring or early autumn, and when the ground is in good working condition, merely pointing it in, as the lime will find its way down quickly enough without putting it in deeply in the first instance.

There is another aspect in which to consider the soil of fruit tree borders—viz., when they are under other crops as well. We seldom think of having two crops on the same ground at once, yet we are not content with fruit trees against a wall or in the open in gardens, but we must crop the borders with vegetables. This necessitates heavy frequent manuring and digging, the surface being kept loose. As a result the trees make much wood, causing work for the knife in summer, and considerable winter pruning under such circumstances is no light affair if the trees are to be kept in proper form and to have the full benefit of light and air. The crops are thin through the roots being deep and running riot in rich loose material; and though everybody knows that to crop Vine, Fig, and Peach borders where these are grown under glass is injurious, the old practice still obtains with respect to outdoor fruit trees. If a border be necessary for a fruit tree grown under glass and kept exclusively for it, surely it is equally essential for one grown outdoors. But there is no denying the fact that outdoor borders are far too extensive, and were they reduced two thirds far better results would follow. A tree against a wall 12 feet high does not need a border 12 feet wide, as one-half that width would answer just as well, or better; indeed one 4 feet wide is ample, and the soil of that part kept for the trees, so to allow of mulching, watering, &c., independent of other crops, there would be less necessity for the knife, less food wasted, and more certain and satisfactory crops attending it than the present.—G. ABBEY.

(To be continued.)

#### NOTES ON CHRYSANTHEMUMS.

CHRYSANTHEMUM BENDIGO.—I note on page 505 the remarks on the above-named Chrysanthemum and Mabel Ward by Mr. Herrin. It is the only corroborative statement I have yet seen on the variety Bendigo from anyone, and this statement to my mind only tends to show still more the necessity of proving thoroughly a variety in all its stages of growth preparatory to sending out under a new name. The two as grown and sent out by Mr. Herrin are not from plants under the same treatment. Plants from cuttings struck at various times and grown under different conditions alter so in character as to be not at all like the parent plant, as at the present time we have plants of Alfred Salter grown similarly to those by Mr. Herrin, and now they are in bloom are nearly white. Plants grown in the ordinary way, too, vary much in blooming, particularly if the buds are taken at different times on the same plant. The flowers from the earliest so taken always come much lighter in colour—that is, if they are taken rather out of the ordinary course of things. I know that blooms of Mabel Ward which are produced very late are of a much deeper yellow than those produced earlier in a general way; as, for instance, I send you a bloom of Thunberg which was grown on a very late shoot, and you will see the colour is quite different from the one grown on a branch and developed much earlier. I think this will in a great measure account for the difference in colour of Mr. Herrin's blooms, as he will be able now to procure strong cuttings of both at the same time if he grows them exactly under the same conditions and blooms them from the same kind of bud: he will then have a much better opportunity of testing them than he has had this season upon the small plants. That in my estimate is the correct way to test any Chrysanthemum as to its proper character. If the one called Bendigo is distinct why does it require so long to prove it as such? Surely with the great number of people that have tried it this season someone must have had representative blooms to bear out the descriptions given of it. Everyone cannot be mistaken, and what can be the object of decrying the variety were it correct? As a rule growers are always ready to welcome any addition, particularly to the incurved class; take, for instance, Lord Alcester or Jeanne d'Arc.

I noted the bloom of Bendigo quoted by Mr. Herrin, and staged at the Crystal Palace and Kingston Shows by Mr. Gibson, that it was a particularly well-developed one both in size of the petals and colour. Those blooms, to my way of thinking, were contradictory to the variety being the true Bendigo, for the simple reason that the florets of each bloom bore no trace of Mrs. Heale in shape, as they were very nearly round at the point, and, as is well known, the petals of Mrs. Heale are particularly sharp-pointed with no trace of roundness in them. This variety, Mrs. Heale, we are led to believe, is the parent of Bendigo; why, then, does it not bear some resemblance to its parent in shape of flower or petal? as all the varieties which I am acquainted with that are sports bear the mark of their parentage, particularly in the shape of the florets. I do not know of one that is otherwise.

I now come to the most condemning point of all in the matter—that is, habit of growth, colour of the wood, leaves and shape of the same. There is not the slightest trace of Mrs. Heale in the growth, but it is the exact

counterpart of Eve. I have tested the matter with people that are considered to be fairly well up in the family of Chrysanthemums, but they have failed to detect any difference in the growth of Bendigo, Mabel, and Eve, and nothing to connect it with Mrs. Heale its supposed parent. The idea I entertain—and I must see more than I have seen to alter that opinion—is that Mr. Ridout in the first place had a plant of Mabel Ward given him for one of Mrs. Heale, and by the growth he did not know that it was not Mrs. Heale. The plant may have had two blooms differing in colour on it by having them on buds of different stages, hence the confusion.—E. MOLYNEUX, *Swanmore Park*.

[There is quite as much difference in the colour of the two blooms of Thunberg referred to as was apparent in the two flowers sent by Mr. Herrin as Mabel Ward and Bendigo, but the latter was distinct in the form as well as the colour of the florets; these, however, were not pointed like those of Mrs. Heale.]

LATE CHRYSANTHEMUMS.—Herewith I beg to forward a fair sample of flowers of the variety Miss Maréchaux; and that you may be able to form a correct estimate of its merits I send along with it a similar sample of Princess Teck. Both varieties are grown entirely for decoration and cut-flower purposes without any special care having been given to either of them. The flower marked No. 1 was given to me nearly a week since by my friend Mr. Grix, gardener to James Kitson, Esq., jun., Headingley. This flower will enable you to judge what the variety is capable of becoming when under the care of a first-rate grower.

I may mention that my stock this year numbers 1734 plants, all in from 9-inch to 12-inch pots, and comprises most of the varieties that have been exhibited at the principal shows. I am wishful to add still further to my list, more especially the late-flowering kinds; if the Journal can render me any assistance that way I shall be thankful.

The following are some of the varieties I have likely to do me good service for some time to come. White Incurved—Miss Maréchaux and Princess Teck; White Anemone-flowered—Fleur de Marie; White Pompon—Princess Matilda or Snowdrop. White Japanese—Mary Major, Meg Merrilees, and Mrs. C. Carey. Crimson Japanese—J. Delaux. Yellow Japanese—L'Incomparable, L'Or du Rhin, Thunberg, Grandiflora, Boule d'Or, and Bend Or. Crimson Reflexed—Purpurea Elegans, Progne, Crimson Velvet, and King of the Crimson.—ROBERT FEATHERSTONE, *St. Ann's Nursery, Burley, Leeds*.

[The blooms sent are very good for such a late period of the season. No. 1, Miss Maréchaux, is especially fine, the florets well incurved and pure white, and it is evidently a useful variety. No. 2, Princess Teck, is also very good, the blooms smaller but very neat and compact.]

POMPON CHRYSANTHEMUMS.—As the Chrysanthemum shows of the present season are now over, one or two questions with regard to the treatment of Pompons for exhibition may not be out of place. The schedules this season, in which prizes have been offered for this section, have required "three stems as cut to form a bunch," and in most cases these have been shown as grown—i.e., not disbudded at all, which seems to be the proper method of exhibiting them; but at the Kingston Show the first prize in the class for Pompons was awarded to a stand of highly developed blooms, and these had been disbudded to a single bloom on each stem. This treatment, I maintain, should not be encouraged, as it tends to do away with the true type of Pompon by developing large flowers, of which we have ample variety in the proper large-flowering sections; whereas Pompons not disbudded but grown with three to six or more flowers on a stem make a distinct and attractive class, as the exhibits of other competitors in this class fully demonstrated.

It is also a disputed point as to whether Hybrid Pompons, such as La Pareté, Sam Slick, Rose Marguerite, and others are eligible to be shown in competition with true Pompons. Perhaps some of your readers may have something more to say on this subject, which I think should be definitely settled and explained before another flowering season comes round.—L. H.

THE NATIONAL CHRYSANTHEMUM SOCIETY'S SHOW.—In a general sense I am pleased with the work taken in hand and executed by the National Chrysanthemum Society—such a society has long been wanted; but still many people will continue to argue, What is the use of a "National" Society like the one now instituted? Its rules cannot be binding on other societies; still I think, now that the love of Chrysanthemums is so rapidly increasing, that we ought to have a leading society to assist other societies, if necessary, and act as a pioneer in this branch of horticulture.

The meetings held by the select Committee to adjudicate on new varieties of Chrysanthemums, award certificates to deserving varieties, detect old ones under new names, &c., are all good objects, but I think such meetings should not be held at a time when gaslight must be used, as judging colours by that light must lead to blunders. If the Committee were to choose an hour some time during the day their decisions would give much more general satisfaction. Such a committee ought to be composed of men thoroughly experienced in the different races, sections, and peculiarities of Chrysanthemums. When so formed the public have confidence in them that any new flower submitted to their consideration will meet with its just reward be it good or bad. Is the Committee of the National Society so formed?

At a National show we expect everything to be done in the best style—arrangement of the various exhibits, &c. I cannot say that such was the case at the recent show held by the Society of which I had the privilege of inspecting during the afternoon of the first day, and I thought that



better taste might have been displayed than having the tables covered with red cloth. Green baize or cloth seems far better adapted to the purpose. I did not approve of the way the tables were arranged; in my opinion they would have been more effectively placed had they been narrower—just of sufficient width to admit of one row of boxes down each side, and a row of small plants down the centre, such as are used for dinner-table decoration, raised, say, 6 inches above the level, enough to relieve the otherwise monotonous flatness of the stands of cut blooms. I noticed that the boxes of cut blooms in many instances were placed in a double row on the tables one box behind the other, which seemed to my mind not quite the correct thing for a National society. In the class for forty-eight blooms, where the handsome sum of £15 was given as a first prize, this style of arrangement was manifest. Placed in this way it was difficult for visitors to see at once which were the competing stands in all the classes. The flowers in the front row of boxes stood in great fear of being bruised by the constant stream of people desirous of inspecting those blooms in the boxes behind. Still there was much to admire in the show as a whole, for there was some very beautiful flowers staged, and the Society is to be congratulated upon bringing together such a large quantity of fine flowers. I do not write this in a carping spirit. I wish to point out in a good-humoured way the defects which I saw. We expect a national society to carry out properly all the details connected with a large exhibition, and in a way that may be copied by other younger societies, of which there are many now springing up in nearly all parts of the country.—OBSERVER.

**THE FUTURE OF THE CHRYSANTHEMUM.**—The success this year of the autumn shows of Chrysanthemums at Chelmsford, Colchester, Saffron Walden, and other places in Essex, the exhibitions of staged plants at the Temple and Hackney, and the grand displays at the Westminster Aquarium and the Crystal Palace, have amply proved, if proof were necessary, how general both the cultivation and the appreciation of the Chrysanthemum have become in the south of England. There is, however, some fear that fashion will lead to degeneration in the standard of excellence for this beautiful flower. Who that appreciates the form, colour, and habit of some of the Pompons and smaller incurved varieties, but has marked with a kind of awe the vast expanse of bloom developed in a prize specimen of the modern Japanese type? The Chrysanthemum, we all know, is a gross feeder, and much depends upon cultivation, but we may be tempted to ask in doubting amazement before one of these blooms, "Upon what meat does this our Cæsar feed that he has grown so great?" While each new variety is bred with the special object of being first of all bigger than his neighbour, and some ninety new varieties are produced each year, there is no doubt about the result as it will affect the future of the Chrysanthemum. The larger sorts only being cultivated, it will soon become utterly unfitted for any but decorations on a grand scale, and the small amateur who has anything less than a Palm house for a conservatory will quietly fade away from the ranks of exhibitors.

We have always admired the Chrysanthemum from a higher standpoint than mere size, and would gladly see it saved from the fate alluded to. Why should we not adapt it as far as possible to decorate the table and the hall? The first step towards this end is at any rate within the bounds of the practical. As the prize list sets the fashion, let the promoters of next year's shows offer prizes for Chrysanthemums grown in pots of 32-size, on single stems, not trained, and tied only to a central stick. One class would be required for Pompons, with which might be included the smaller hybrids, and a second for incurved or reflexed varieties. This would probably be welcomed as a novelty both by growers and the public; it would bring into notice many beautiful varieties now looked upon as useless, and having set up some other standard than size for which to grow, it would tend to a general improvement in the cultivation of the species.—(*Essex County Chronicle*.)

**MABEL WARD AND BENDIGO.**—Having grown a quantity of the latter, I fail to distinguish how it differs from the former. It cannot be a sport from Mrs. Heale, as stated by some writers, because it has no resemblance to Mrs. Heale in general character, or habit, or size of flower. I always found Mrs. Heale a tall grower, and my experience extends over eighteen years. Bendigo I find is a dwarf grower like its parent Eve. Jeanne d'Arc or Madame Madeline Tezier are identical. I have grown both for three years, and fail to find any difference (only in name) in habit, size of flower, shape, colour, or time of blooming, hence my reason for using only one name—i.e., Jeanne d'Arc, in future in my catalogue.—ROBERT OWEN, *Floral Nurseries, Maidenhead*.

**CHRYSANTHEMUM QUERIES.**—Now that showing is almost if not wholly at an end, and the memories thereof fresh in observers' memories, it would seem to be an excellent time to clear up any doubtful point or add to our stock of information. It was probably from this point of view you permitted me, under the above heading, to ask in your issue for the 4th inst. a few queries. My first duty is to thank Mr. Davis of Camberwell for so kindly replying thereto, and to ask permission to add a few additional observations that may serve to elucidate the apparent difference between us. Referring to his memory of my recommendation in the Journal some time since of late as compared with early struck cuttings, he says, "his experiments on this point seem to have ended in failure, as the Elaines he speaks of have not come to perfection;" the query referred to being "is there a strain of Elaine that does not show a centre?" I was speaking of Chrysanthemums for decorative purposes at the time referred to, and I am still of opinion that March or April is

time enough for that purpose. If I had a doubt on the point I have only to turn to Mr. Davis's own "Guide to Cultivation," page 20, to find, "Cuttings struck in March often give the best of blooms, especially such as Elaine, James Salter, &c." But Mr. Davis may say I did not skilfully treat my plants, but it was a neighbouring gentleman who does that drew my attention first to this query, and who had his plants from him. May I again ask, Is it the general experience that any strain of Elaine, if struck early and skilfully treated, will not show a centre?

As to the best reflexed or recurved white Chrysanthemum. I cannot say I am quite satisfied with Mr. Davis's answer, though he should know. We cannot be too precise in queries of this kind, so I will, with your permission, quote Mr. Burbidge's definition, from his new book on the Chrysanthemum, of a reflexed flower. "The florets are strap-shaped, but curving outwards from the centre, so that the inner surface of the florets only is exposed." Now, though I dearly like the Christines, and the white variety (synonymous with Mrs. Forsyth) especially, they do not coincide with this definition. The Christines at their best, cut, and drawn on paper, say with a pencil, will form an almost exact semi-globe—not a single floret will be either reflexed or recurved, or falling outwards. The petals stand upright, as they do also in Sœur Melanie; and if from this point of view, if the latter is a Japanese so is the former, though later and larger. I like the shape of Emperor of China much better, and it comes nearer the above definition, but the colour is not pure white. Neither is Felicity, which has a shade of lemon-yellow; it is highly spoken of by Mr. Cannell, but Mr. Burbidge classes it among incurved. My ideal reflexed Chrysanthemum is one with the outer ray florets very long, the next lying flat on those, and a shade shorter, and so on to the centre. I know no white recurved Chrysanthemum, large, of this description but Snowdrop, and a few of the small Pompons come near it. I cannot help regretting with your correspondent Mr. E. Molyneux, page 531, "how strange it is there are no new varieties of reflexed Chrysanthemums brought out." Might I ask, in conclusion, What has become of that beautiful Japanese Chrysanthemum Gracieuse (Delaux)? Except in Mr. Burbidge's book I do not find it in any of the catalogues.—W. J. MURPHY, *Clonmel*.

**PROLIFEROUS CHRYSANTHEMUMS.**—In answer to Mr. F. W. Jameson (see page 533, Dec. 11th) I may say that here several varieties of Japanese Chrysanthemums produced flowers of the "hen and chicken" type. The most noticeable were Fair Maid of Guernsey and Curiosity, the latter bearing five or six bunches on the same plant. In our case I believe it was caused by the crown buds being taken too early in the season. Other plants of the same varieties with buds taken later bore perfect, though of course later, flowers. I have no doubt that if it were thought desirable such flowers could be produced next season if the same means were employed. For my part, I infinitely prefer a well-shaped flower, and hope to avoid such deformities in future by taking buds two or three weeks later.—T. W.

I HAVE noticed paragraphs from Mr. F. W. Jameson and others respecting the proliferousness of Chrysanthemums, and I may mention that a few years ago I found James Salter produce flowers as mentioned. I have frequently seen Fair Maid of Guernsey bearing side flowers. In my case the plants were struck in November, or rather inserted in November, and the buds taken very early in August. I have not seen these flowers produced on plants struck in spring, or on plants that had been cut down as recommended by many practical growers.—J. PITHERS.

I NOTICED in the Journal of the 11th inst. Mr. F. W. Jameson wishes to know if others have had deformed Chrysanthemum blooms this season. I had twelve deformed blooms of Madame Berthie Rendatler. They were on three plants, four blooms on a plant, and those blooms were from the July bud. I counted upwards of sixty blooms and buds from one terminal bloom, the lowest were projected 8 inches. They became smaller towards the centre, and the smallest bud never opened. It was quite a bouquet in itself. I had one more plant of the same which had perfect flowers, but these were not from a July bud. I have never had any deformed Chrysanthemum blooms before the present season, and I have never seen any elsewhere.—N. CAMPANY.

**CHRYSANTHEMUMS JEANNE D'ARC AND MDLLE. MADELINE TEZIER—PROLIFEROUS FLOWERS.**—I have enclosed two badly grown blooms of Jeanne d'Arc. They are side flowers. Are they any different from the Mdle. M. Tezier sent by Mr. Laing? I thought perhaps the cultivation might make a difference. I see by the last issue of the Journal that Mr. Molyneux has pronounced them distinct, so I should think they are, he ought to know. I have also enclosed a dead flower of a proliferous Chrysanthemum, Madame Berthie Rendatler. I have had several this year. In this morning's Journal I can say in answer to Mr. F. W. Jameson, that it is a common occurrence for this variety, also Fair Maid of Guernsey and Mons. Ardene, to come in this curious manner. All buds taken early have that tendency, especially of the former variety, hence it is being distributed under the name of Curiosity, a name that ought to be discontinued by all growers. The terminal buds are the best to depend upon for this variety, unless the crown bud did not show until the third or fourth week in August.—C. ORCHARD, *Coombe Leigh*.

[The blooms before us have a far closer resemblance to that sent by Mr. Laing as Mdle. M. Tezier than to those of Jeanne d'Arc as exhibited with incurved varieties this year. Perhaps Mr. Molyneux will grow a plant from Mr. Laing with the true stock of Jeanne d'Arc at Swanmore. The "dead" example of Madame Berthie Rendatler referred to, com-



prised one large and sixteen smaller flowers, the latter on a level with and quite encircling the large central bloom.]



A GRAND INTERNATIONAL FLOWER SHOW is to take place in Paris in May 1885, under the auspices of the French National Horticultural Society of France, of which M. Leon Say, *senateur*, late Minister of the Exchequer, has just been elected President. Further particulars will be published shortly.

— THE following is a fourth list of subscriptions collected for the GARDENERS' ROYAL BENEVOLENT INSTITUTION AUGMENTATION OF PENSION FUND by Mr. Owen Thomas, Chatsworth Gardens. Per Mr. G. Scrimshaw, Chatsworth Gardens, £2 2s. 6d.; Mrs. Wayte, Bornhill, Tamworth, £1; Mrs. Jones, Chatsworth, 10s.; Mr. Clements, Brambling House Gardens, 5s.; ditto Life Member, £10 10s.; total, £14 7s. 6d.

— THE schedule of the ROYAL BOTANIC SOCIETY OF LONDON for the two spring shows of 1885—namely March 25th and April 22nd, is now issued, and from it we learn that the usual prizes will be offered in the ordinary classes, but that in addition eight special prizes are offered for Amaryllises. These are contributed by "an amateur anxious to encourage the cultivation of this fine race of plants," and all the classes are open. Two prizes of £2 and £1 are offered for the best seedling. Similar prizes are offered for the best six Amaryllises, £1 and 10s. being offered for the two best dark and light varieties in this class.

— THE members and friends of the KINGSTON CHRYSANTHEMUM SOCIETY had their first annual dinner together at the Sun Inn, Kingston-on-Thames, on Thursday night last. There was quite a crowded meeting, Mr. Drewitt, the Editor of the *Surbiton and Kingston News*, ably presiding, supported by his brother, the Treasurer of the Society. It is not many floral societies which enjoy the support of gentlemen so able and earnest as these, and their effectual services are, as they ought to be warmly appreciated by the members. The Society is also managed by a Committee thoroughly practical, and the Secretary, Mr. J. Jackson, is admittedly the right man in the right place. With such a directorate and the good support accorded, the Kingston Society will maintain its high position in the Chrysanthemum world. As an example of the progress made during the last eight years, and also as evidence of the increasing popularity of the favourite autumn flower, it may be stated that while the amount taken at the doors at the first Kingston Show was only £13, the sum taken at the last Show was £132, £30 of this being paid in sixpences in one hour during the evening. The gathering was in every way a gratifying success.

— THE fifty-fourth ordinary meeting of the ESSEX FIELD CLUB will be held in the Great Hall of the Loughton Public Hall, Loughton, Essex, on Saturday, December 20th, 1884, at 7 P.M. The following paper, as well as shorter notes, will be read:—"The 'Salting-Mounds' of Essex," by Henry Stopes, F.G.S. In accordance with Rule iv., the Council and officers for 1885 will be nominated, preparatory to the fifth annual general meeting to be held on January 31st, 1885. The Hall will be open at 6.30 P.M. for the convenience of exhibitors. As stated in former circulars, every facility will be afforded to those bringing microscopes and specimens, &c. The Hall is only a few minutes' walk from the Loughton railway station, and the usual reduction on return tickets may be claimed at Liverpool Street, Stratford, and Woodford stations. The library remains at the headquarters, 3, St. John's Terrace, Buckhurst Hill, and is open every Thursday evening during the winter session from 7 to 9 P.M.

— THE prospectus of the ROYAL AGRICULTURAL COLLEGE, CIRENCESTER, issued during the past month, gives full particulars concerning the course of instruction provided in technical and scientific subjects, which appears to be ample for the requirements of the agricultural students. External examiners are appointed for the final examination of students for the diploma, and there is a Board of Studies, in which are

several professors otherwise unconnected with the College. The number of students is steadily increasing, and among them are several Indian scholars sent by the Governments of Bengal and the North-West Provinces. The Governments of the Indian Presidencies also encourage some of their civil servants to pass through the College course when on leave of absence in this country.

— THE second annual report of THE METROPOLITAN PUBLIC GROUND AND PLAYGROUND ASSOCIATION is just to hand, and from it we judge that much good work is being performed. That the objects of the Association are appreciated by the public is also proved by the fact that from January 1st to June 21st of the present year the subscriptions amounted to £586, and at the closing of the accounts for the half year this left a balance of £140 at the bankers. A large number of open spaces in the most crowded portions of the metropolis have already been secured for the use of the people, and numbers of others are under consideration. In several cases where permission has been granted by vestries or other bodies to open certain spaces to the public, the Association has undertaken the charge of the grounds, providing seats, &c. In an appendix we notice that a rather unsatisfactory list of trees and shrubs that "will live in London" is given, and we should think that the Honorary Landscape Gardener of the Association, Mr. J. Forsyth Johnson, has not revised it, or he would never have passed it in its present state. For example, amongst "Evergreen Shrubs" are included Pampas Grass, *Iberis*, "Hesperus," Vincas, London Pride, *Dianthus*, *Arabis alba*, and "French Willow Herb," while several of the trees, such as *Salisburia adiantifolia*, *Magnolias*, and others, are quite unsuited for the purpose named.

— IN a recent issue of the BULLETIN DU CERCLE HORTICOLE DU NORD there is a description of carpet and other bedding which contains some names of plants familiar to English cultivators, but which have undergone a strange transformation in their passage from England to the Continent. One of the most amusing of these is "Pyrethrum Golden Pheather," which is rather suggestive of one of the American humourists' style of orthography. In "Ageratum Thum-Thum" we recognise the variety Tom Thumb without much difficulty, but it was only by a sudden inspiration that "Geranium Hopitoug" was determined to be the well-known "Happy Thought."

— A CORRESPONDENT writes:—"I visited OSBERTON MANOR, NEAR WORKSOP, recently, and there saw a fine batch of *Calanthe Veitchii* nearly in full flower. The plants were arranged the full length of the stove, forming a complete border. There were upwards of eighty spikes expanded. The effect was very pleasing, and a striking illustration of what may be done by massing certain colours instead of mixing other flowers with them and producing incongruity. On a Vine of *Gros Guillaume* in one of the vineries at the same place, and hanging on opposite sides of the main stem, and nearly exactly opposite each other, were two of the handsomest bunches of Grapes I have ever seen. They might have been twin bunches; they were about equal in weight (not less than 10 lbs. each) in the general contour of bunch, size of berry, and equally excellently finished. The quality of the general crop of Grapes speaks volumes for Mr. Woods as a Grape-grower."

— "J. L. B." writes on PEAS AND CELERY as follows:—"I am growing Suttons' new Gem Dwarf Celery this year rather largely. An illustration of it in their catalogue induced me to try it, and I find the description a very faithful one. Although very dwarf, it is a good size. There seems quite as much in a head of this as in the taller varieties, which require much more room to grow. One great advantage is that it can be earthed-up to within 3 inches of the top of the leaves, so that frost and snow cannot easily injure it. This seems to me an improvement on Sandringham Dwarf White. Can anyone recommend a good dwarf red similar to the above, or the best red for general purposes? Can anyone recommend a better Pea for earliness and productiveness than Suttons' Ringleader or Ne plus Ultra for quantity and quality for a main crop? or than Veitch's Perfection for the latest?"

— A WINCHESTER correspondent sends us a number of pods and scarlet seeds of *IRIS FOETIDISSIMA*, and remarks, "The flower is insignificant, but the open pods filled with brightly coloured berries look very showy, and at this dull season are exceedingly effective amongst the green foliage. We have several large clumps here which yearly produce abundance of pods, which are valued for cutting, and when associated with foliage of shrubs, &c., in a vase have a most pleasing effect, and they last a considerable time."



— MR. W. H. WILLIAMS, Hon. Secretary of THE WILTS HORTICULTURAL SOCIETY, informs us that the date of the above Society's Show for next year is fixed for Thursday, August 20th, and will be held at Salisbury.

— "E. B., *Streatham*," writes:—"The WEATHER here to-day December 13th, has been remarkable for the middle of December. The temperature outside has been over 50°, rising to 55° at mid-day; and although there has been but little sunshine the day has been particularly light. Thrushes have been singing as if it had been spring; and in the pleasure grounds I discovered a beautiful flower of Général Jacqueminot Rose fully expanded, such as would have been welcome in the month of July."

— THE ST. PETER'S HAMMERSMITH AND DISTRICT GARDENERS' AMATEURS', AND COTTAGERS' IMPROVEMENT SOCIETY has just been formed. It is proposed to hold monthly meetings for reading papers and discussing subjects of gardening interest. It is also proposed to hold a Chrysanthemum Show next year. The Hon. Secretary is Mr. H. J. Farrow, 62, Black Lion Lane, Hammersmith.

— THE Committee appointed by the Council of the Royal Botanic Society of London, Regent's Park, to award the silver and bronze medals for BOXES FOR THE CARRIAGE OF CUT FLOWERS BY PARCELS POST, report that they advertised certain conditions to be complied with in competition for such medals. Eight manufacturers submitted sample boxes of cardboard, wood, and metal, both folding and rigid. The Committee awarded the silver medal to Messrs. R. Hall & Son, of Hammet Street, Minories, for a tin box, 15 by 9 by 6 inches, well made and strong, capable of holding about 2 lbs. of cut flowers; and the bronze medal to Mr. J. W. Hoffman of 54, Junction Road, for a small tin box, with lifting frame, furnished with elastic bands to hold single flowers or sprays, the ends of the stalks dipping into damp moss at the bottom of the box.

— AN excellent photograph of the late GEORGE BENTHAM is given in the December number of the *Journal of Botany*, together with a full account of his life and labours as a botanist.

— MR. M. M. BALLOU gives the following description of CEYLON VEGETATION in the *American Cultivator* of the 29th ult.:—"The forest and jungle of Ceylon abound in valuable woods. Here we have the Ebony, Satin Wood, and Calamander Trees, the latter the most highly prized of all the cabinet woods, and of which some beautiful samples may be seen in the Escorial, near Madrid. The entire family of the Palm is found in great perfection, as well as fragrant Balsams, tall Ferns, and the singular but valuable Indiarubber Tree, with a large share of its twisted roots above ground. The Bamboo, next to the Coconut the most useful of all trees to the dwellers in the tropics, increases so rapidly here, that by actual measurement it makes 12 inches vertical growth daily, or half an inch per hour. It has even been said that it can be seen to grow, which is almost a fact. The writer saw one group of the Bamboo, less than ninety days old, which exceeded 90 feet in height. Mingled with these woods are fruits and flowers of many varieties. At the north we have distinctive forests of Pine, Cedar, Oak, &c., and our fruits are cultivated in orchards, but tropical verdure and vegetation are more promiscuous. The Bread Fruit Tree particularly interests one with its deeply serrated feathery leaves and its Melon-shaped fruit, weighing when ripe 3 lbs. or more. The tree forms a natural food supply to the natives, and three or four trees will nearly support a family, at least keep them from hunger, the trees bearing for nine months of the year and growing to a height of 50 feet. The Palm asserts its predominance everywhere, and next in abundance is the Banana, bending under the weight of the rich yellow fruit, always dominated by the tall Cocoanuts, with half a ton of constantly ripening nuts in every tufted top. Mingled with these are flower-bearing trees 30 feet in height, including the red Rhododendron and the scarlet-blossomed Cotton Tree, while flowers less pretentious catch the eye in all directions among the undergrowth. The sacred Lotus, as thick as Pond Lilies with us, floats upon the shaded pools and perfumes the air."

### ANTIRRHINUMS.

THE principal reasons which may be advanced in favour of a more extensive cultivation of these plants are their general usefulness and beauty. The fact that they will provide a quantity of bloom during the greater part of the year, that they are easily cultivated and will adapt themselves to any variety of soil and position, and a

little care exercised in the selection of varieties will ensure blooms that for beauty and variety may satisfy the most fastidious tastes. Many varieties will almost vie with herbaceous Calceolarias in beautiful blending of yellow and orange grounds with pink, scarlet, and crimson spots and stripes added to rich scarlet and deep crimson selfs. One other favourable character is that they are perfectly hardy, need but little trouble, and that position and soil are to a certain extent immaterial.

There are three modes of treatment, which for convenience may be divided into annual, biennial, and perennial. First as annuals. For cottage garden purposes, also for small villa gardens where the glass shelter is sufficient to produce plants which will afford a good supply of summer bloom, and where quantities of cut flowers are needed, and shrubbery borders, banks, and other places are required to look gay, there is no simpler or more effective plan than to sow seed where it is required to bloom in March or April, the sowing to be effected in finely pulverised soil with the seeds barely covered. These will soon spring up, and the plants will be in bloom from mid-summer onwards until severe frost sets in.

Where a longer season of bloom is desired the biennial process may be added. For this purpose the best plan is to sow in July, prick the seedlings out in prepared beds, and plant in their permanent quarters any time from November to March. From this sowing, also by potting on sturdy bushy plants and placing them in a cold pit or frame, a supply of winter and early spring blooms may be obtained, when, if the strain is a good one and some pains are taken in stopping and training, a batch may be placed in the conservatory which would be very effective, particularly when it is borne in mind that they would be had at a time when flowers are scarce.

Under the third heading of perennials, I propose to deal with cuttings, and herein lies the whole secret of success as regards quality. As to the cuttings themselves, if these are taken off in September they will strike readily in a cold frame under a handlight or in the shade of a fence or hedge. They should be repotted when struck into large 60's, ready for planting in the spring. Plants so treated are most satisfactory in habit and profusion of bloom, and supposing the cuttings have been well selected the best results are thereby attained. It is in this matter of selection that the difference between a group of good flowers and a lot of undecided colouring, ragged uncouth habit, and general confusion of quality and mediocrity appears. These selected cuttings will supply just such colours as are most desired. From them seed should be saved for previously mentioned purposes. Improved varieties will be constantly appearing, and so between the processes of sowing seed and taking cuttings, saving seed from these, sowing and cutting again, vigour, habit, and beauty are obtained and maintained, and can be extended to a degree scarcely thought of.

One word as to soil. Antirrhinums grow and blossom on old walls, and it is a fact that while they will thrive amazingly in good soil they can maintain their own fairly well in the midst of extreme poverty. During the past dry season they have been invaluable for cut bloom. They are generous too. You may cut and come again, the oftener the better, as you thus prevent seeding and develop the strength of the plant to flower-producing purposes. In conclusion let me add that although I have recommended Antirrhinums as border plants, still in certain positions they are worthy of a bed, and will afford no mean ornament when so arranged.—ROBERT CATT.

### NOTTS HORTICULTURAL AND BOTANICAL SOCIETY.

THE general monthly meeting of the members of the above Society was held at the Mechanics' Institution on Wednesday, December 10th, when Mr. C. T. Musson, F.R.H.S., Junior Lecturer on Botany at the University College, Nottingham, delivered a lecture upon "The Minute Structures of Plants," which was illustrated by the microscope. Mr. J. H. Walker of Hardwicke House Gardens, Nottingham, was unanimously voted to the chair, and there was a good attendance of gardeners and others interested in horticulture. The Chairman in opening the business of the evening took occasion to allude to the loss the Society had sustained through the death of the late Mr. Henry Frettingham of Beeston, and upon the motion of Mr. James Don, seconded by Mr. N. German, a letter of condolence was directed to be sent to the widow and relatives of the deceased gentleman, who was for some time one of the Committee of the Society.

The Lecturer at the commencement of his remarks observed that a careful study of the life history of plants ought to be the basis of all botanical research. He described the protoplasm and the nucleus of plant cells, and said that protoplasm was chiefly composed of the four elements—carbon, hydrogen, nitrogen, and oxygen—and they corresponded very closely with the "sarco" which formed the constituent substance of the human frame. He then spoke of the cell walls of plants, and explained their formation and functions. He observed that the action of the so-called Sensitive Plants was due to irritability of protoplasm. He showed how the various organs of plants fulfilled their work so as to insure vitality and growth, and he said that as a result of the activity of the protoplasm many chemical compounds were found in the cells of plants. He then explained how it was possible by microscopic examina-



tion to ascertain whether a given plant belonged to the Coniferae or not. The Lecturer then very ably described the process of cell-multiplication and of the mode of which the cells of plants absorbed water, and thus derived nutrition. He then directed his remarks to a description of the tissues of plants, consisting of aggregation of cells, and showed that certain cells and vessels are set apart for specific purposes. The concluding observations of the Lecturer were devoted to an account of the molecular structure of plants, and to a consideration of the modification necessary to suit new conditions of plant life.

The Lecturer was very attentively listened to, and resumed his seat amidst applause. A discussion followed, in which the Chairman, Messrs. Thacker, C. E. Pearson, Meadows, and Don took part, at the conclusion of which a very hearty vote of thanks was accorded to the Lecturer and to the Chairman for presiding. There was a good display of flowers and fruit, which was brought by the members, amongst them being several good bunches of Gros Guillaume Grapes from Mr. Dixon, gardener to

like beds, about six plants wide, the pots an inch or two apart, with a pathway between the beds about 2 feet wide to facilitate watering. They stand thus until the first week in June, when the whole of them are systematically cut down as they stand. The plants at this time vary in height according to the variety — Princess Teck, Barbara, and other dwarf kinds, about 15 inches high, and the Rundles, Beverleys, and Mad. C. Audiguier about 2½ or 3 feet high, with the first break 2 or 3 inches long. I first cut down the later-blooming sorts, such as Princess of Teck, Hero of Stoke Newington, Jardin des Plantes, Lady Slade, &c. A few are cut down every alternate day, extending the time to about a fortnight from the time of the first to the final cutting.

We generally make about three batches. The first batch comprises varieties of dwarf habit. These are cut down to within 4 inches, 6 inches, or 8 inches from the soil, according to the eyes and the stems of the plant. The varieties found most suitable to this operation, and many of which are figured in the group behind the Pompons at the two sides, and

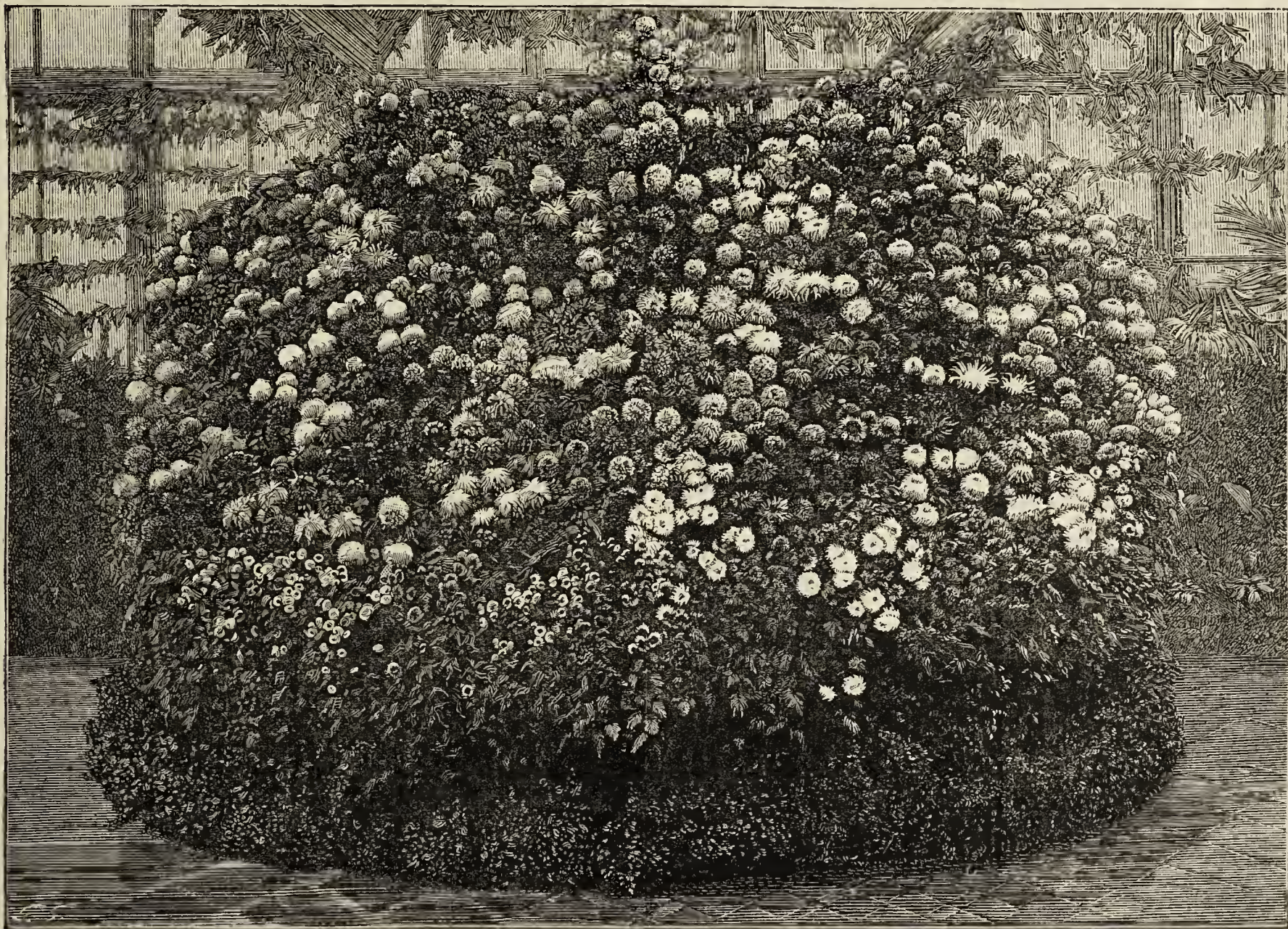


FIG. 92.—CHRYSANTHEMUMS FOR GROUPING.

J. R. Allen, Esq., Mapperley; a very pretty group of single Chrysanthemums from Messrs. J. R. Pearson & Sons, Chilwell; fifty varieties of Chrysanthemums of excellent quality from Mr. N. German, gardener to T. B. Cutts, Esq., Malvern House, Nottingham; some good heads of Poinsettias from Mr. Walker, gardener to J. W. Lewis, Esq., Hardwicke House, Nottingham; a curious strain of Primula with maroon foliage and very flat white flowers from Mr. Edington, gardener to Henry Ashwell, Esq., J.P., Woodthorpe Grange; a collection of Chrysanthemums from Mr. Meadows, gardener to C. J. Cox, Esq., Basford, and others.

#### CHRYSANTHEMUMS FOR GROUPING.

IN preparing my plants the cuttings are struck in December singly in large thumbs in a cold frame, but protected from frost. As fast as they commence growing I transfer them to another frame where they can have more air. At the end of February I shift into 48 or 32-size pots, according to the strength of the plants, and keep them in cold frames until the first or second week in April, giving plenty of air, and fully exposing them on all favourable occasions. In the first settled weather after the middle of April they are placed out of doors on a good foundation of cinder ashes in a sheltered place. They are generally placed in nursery-

which formed the front of the group at Kingston, are Barbara, Père Delaux, Tendresse, Princess of Teck, Orphée, Triomphe du Nord, Hero of Stoke Newington, Richard Larios, Mr. Brunlees, King of the Crimsons, Duchesse de Gerolstein, Georges Sand (Anemone), L'île des Plaisirs, Mrs. Forsyth, To Kio, and Léon Lequay. The height of these plants as they stand in the group are, from the soil of the pot to the flowers, 2 feet 3 inches to 2 feet 9 inches.

The second batch which would form the body of the groups, and consequently would be required a little higher, are cut down to heights varying from 9 inches to 12 or 14 inches from the soil. The following varieties are thus treated:—Garnet, Cossack, Yellow Dragon, Princess of Wales, Lord Wolseley, Nonpareil, Meg Merrilees, Mrs. Heale, Peter the Great, Safranum, Flamme de Punch, Mdle. Lacroix, L'Incomparable, Mabel Ward, Lady Hardinge, Triomphe de la Rue des Chatelets, Mrs. Shipman, Golden Empress, Criterion, Bronze Dragon, F. A. Davis, Refulgence, Jardin des Plantes, M. Delaux, Beverley, and The Rundles, Fanny Bouchardat, Queen of England, Empress of India, John Salter, Alfred Salter, M. Henri Jacotot, and Lord Alcester. These measure now from 3 feet to 5 feet from the soil to the flowers.

The third batch, or tallest plants that are required for the back, are cut only moderately, just shortening behind the breaks to the height of



18 inches or 2 feet. These include *Mdme. C. Audiguier* (which needs cutting low, and then is uncertain for grouping, as it generally runs such a height before showing its bud), *Japonaise*, *Baronne de Prailly*, *Jeanne d'Arc*, *Fair Maid of Guernsey*, *Boule d'Or*, *Mons. Astorg*, *Bras Rouge*, *Mrs. Townsend*, *Empress (Anemone)*, *Duchess of Albany (Jackson's)*, *Souvenir d'Amsterdam*, *Mdme. Berthie Kendatler*, *Mr. Bunn*, &c. These varieties are of taller habit and run up higher before showing the flower bud, the heights of the back plants in the group ranging from 5 feet to 6 feet 6 inches from the top of the pot to the flowers.

As soon as the cutting-down is finished watering is performed very carefully. A sprinkle overhead will suffice for the shortest batches, while the others will take more water. As they break out from the side or throw up strong shoots from the bottom, as the short ones sometimes do, they require very careful attention, thinning the shoots out to the required number, leaving from three to six. About three or four is a favourite number with me. I do not like more than that number, or it appears too massive for one colour.

As soon as they have fairly started again to the extent of 3 or 4 inches the plants are transferred into their flowering pots. The tallest will be ready first; this will be about the last week in June, and potting is generally finished about the second week in July. They are then placed out, the dwarfest in beds as before, the tallest in rows, so that they can be tied to a stretched wire for support. They are placed apart as widely as space will admit, which is about 6 or 8 inches from pot to pot, to allow a circulation of air about them. The pots employed are 8-inch, 9-inch, and 10-inch pots, according to the strength of the plant and the variety. All the Queen family and the other large-flowering varieties are placed in 10-inch pots, but *Père Delaux*, *To Kio*, *Tendresse*, *Duchess de Gerolstein*, *L'Ile des Plaisirs*, and other smaller-flowering varieties which are essential to grouping on account of their habit and colour, have 8 or 9-inch pots.

The soil employed consists of two-thirds good mellow yellow loam or the top spit of a pasture well decayed, and about a third of cowdung and leaf mould with a good sprinkling of sharp sand. I rub the turf through a coarse sieve of about an inch mesh, and keep a sharp look-out for grubs and worms, and the manure through a finer sieve of about a quarter-inch mesh. If cow manure is not to be had in condition I use horse manure from an old Mushroom bed, and with a few half-inch crushed bones amongst the crocks as drainage. At all times when they are in small pots or in their flowering pots, I use weak liquid manure as soon as I know the roots are well round the sides of the pots. To these two points, and to the very careful and unremitting attention in watering at all times, I attribute the healthy and abundant foliage I obtain.

Soot and cow manure are chiefly what the liquid manure is chiefly made with, besides a little of Clay's Fertiliser sometimes as a top-dressing.

The dwarf plants are tied out to light hazel rods, 2 feet 6 inches to 3 feet long, using a stick to each break. For the taller ones I use stouter sticks, using one only to each plant, but cut them off well under the flowers and tie a piece of galvanised wire to the stem to support the flower. This gives them a much lighter effect. It is offensive to see flowers, as we do sometimes in groups at exhibitions, bound up in a cruel way to great unsightly sticks. The effect is spoiled, and the beauty of the flower is lost.

The bud that I take is the one that shows on the top of the first shoot, which appears about a month after transferring the plants into the flowering pots—viz., the second or third week in August. If any should come blind I nip out the top back to a side shoot and let the plant make a terminal growth and take that bud. It makes the plant taller and a little later, but they all come in useful. I do not know that I can add anything more. The arrangement of colours and the proper form and slope of groups is a matter of taste and experience, but if there is one form of showing the beauties of the *Chrysanthemum* more than another it is when they are in combination one with the other; and, although there is still plenty of room for advance, I am pleased to see the steady improvement in the quality and style of the groups at exhibitions at the present day as compared with the tall and unsightly ones of a few years ago, an improvement traceable to the encouragement offered by the various societies in the shape of prizes for exhibits in this natural style. The improvement that is traceable in the public exhibitions we may be sure is reflected in the conservatory at home.—C. ORCHARD.

[The group represented is reduced from an excellent photograph taken by Messrs. Russell & Sons, Wimbledon, in Mr. Galsworthy's conservatory at Coombe Leigh. It resembles the beautiful first-prize group at Kingston, arranged by Mr. Galsworthy's gardener, the writer of the above practical notes, except that no Pompons were employed at Kingston. The plants were remarkable by their dwarf habit, rich foliage, and fine flowers. In no other manner of exhibiting can so many varieties be shown as in groups, and the plants are also admirably adapted for conservatory adornment.]

#### LANE'S PRINCE ALBERT APPLE.

In a somewhat extensive collection of Apples we find the above-named variety one of the best and surest cropping varieties we grow. The fruit is of good size and quality, and keeps in good condition until February. In comparison with several other well-known Apples the individual fruits are considerably heavier. This with persons who grow Apples for sale will be at once seen to be a most important advantage in its favour. In growth it has a tendency to form a somewhat drooping pyramidal tree, and is not a very strong grower. Our tree, which is from

sixteen to twenty years old and has not been severely pruned for some years now, is not more than 12 or 13 feet in height. It forms fruit spurs freely, and is a healthy-growing variety. It blooms several days later than most other varieties of Apples, which doubtless assists it very much in producing more regular crops of fruit, seeing that it naturally to some extent escapes the late spring frosts which so frequently cause havoc with Apple blossom. One tree is worked on the Crab stock, and is growing in a fairly sound loamy soil resting on magnesian limestone. Those of your readers who have not this variety already will, I feel sure, not regret adding it to their collections. It is necessary to get the true variety, as I am informed on good authority that there are two varieties grown under the name of Prince Albert.—H. J. CLAYTON, *Grimston Gardens, Tadcaster*.

#### NATIONAL ROSE SOCIETY.

THE annual general meeting of this Society was held in the rooms of the Horticultural Club, Covent Garden Hotel, 1, Henrietta Street, on Thursday, the 11th inst., and despite the extremely unfavourable weather there was a good attendance of members. It was generally known that the new bye-laws which had been drawn up by the Committee were to be submitted for discussion or confirmation, and this no doubt induced many to attend. The rules had, however, been very carefully prepared, and in consequence they needed little consideration, being carried almost unanimously. This code will be a great advantage to the Society and to rosarians generally, as it will readily admit of the settlement of disputes that may arise either at the shows of the National Society or at those of societies affiliated to it. Another very important part of the proceedings was that at the conclusion of the ordinary business, when the much-respected Honorary Secretary, E. Mawley, Esq., Addiscombe, Croydon, was presented by Mr. C. E. Cuthell on behalf of the members of the Society with a handsome regulator clock and a gold half-chronometer watch. These valuable presents formed a very fitting and graceful acknowledgment of the services rendered to the Society by Mr. Mawley, who has worked indefatigably on its behalf since its commencement.

In addition to the Chairman, Chas. Hart, Esq., Dorking; the Hon. Secretaries, the Rev. H. H. D'Ombraïn, and Mr. E. Mawley; and the Hon. Treasurer, Mr. Thomas Burt Haywood, the following members were present:—H. Appleby, Dorking; R. N. G. Baker, Exeter; G. Bunyard, Maidstone; J. Burrell, Cambridge; F. Cant, Colchester; Captain Christy, Sidmouth; John Cranston, Hereford; C. E. Cuthell, Dorking; Rev. T. N. Flintoff, Worcester; Rev. F. H. Gall, Hitchin; T. W. Girdlestone, Sunningdale; T. Gravely, Horsham; C. F. Hore, Beckenham; J. Jefferies, Cirencester; E. B. Lindsell, Hitchin; G. Paul, Cheshunt; W. Paul, Waltham Cross; F. C. Pawle, Reigate; J. D. Pawle, Reigate; G. W. Piper, Uckfield; Rev. F. Page-Roberts, Scole; A. Slaughter, Steyning; J. T. Strange, Reading; A. Turner, Slough; H. Wallis, Brentwood; E. Wilkins, Sutton; and W. H. Williams, Salisbury.

The business of the meeting was commenced at 4 P.M. by Mr. E. Mawley reading the notice to the members. The Chairman then proposed that the minutes of the last general meeting be taken as read, and Mr. D'Ombraïn proceeded to read the new bye-laws, which follow:—

#### BYE-LAWS OF THE NATIONAL ROSE SOCIETY.

- 1.—That this Society be called the National Rose Society.
- 2.—That this Society consist of Members paying Annual Subscriptions of £1 or 10s.
- 3.—That the Officers of the Society consist of a President, Vice-Presidents, Treasurer, and two Secretaries, to be elected each year by ballot at the General Meeting of the Society, and to be *ex-officio* Members of all Committees.
- 4.—That a General Meeting of the Society be held annually in December to receive the Report of the General Committee, to pass the Accounts, to elect the General Committee and Officers for the ensuing year, and for the transaction of other general business.
- 5.—Notice of any proposed alteration of these Bye-laws must be given in writing to one of the Secretaries at least two weeks before the General Meeting, and no Bye-law nor Regulation shall be altered except at a General Meeting of the Society.
- 6.—That the General Committee consist of forty Members (exclusive of the Officers) to be elected annually by ballot at the General Meeting of the Society. Half the Members of this Committee to retire each year according to seniority, but to be eligible for re-election. All Local Secretaries to be *ex-officio* Members of this Committee.
- 7.—That the General Committee meet twice annually, once in January for the purpose of electing the Executive Committee, and once in November for making arrangements for the Annual General Meeting of the Society. Special Meetings of the General Committee may be called on the requisition of any three of its Members.
- 8.—That the Executive Committee consist of eighteen Members (exclusive of the Officers), to be elected each year in January by the General Committee. The Executive Committee to conduct the business of the Society. Any five Members to constitute a quorum.
- 9.—That Members subscribing £1 be entitled to six tickets, and those subscribing 10s. to three tickets admitting to the Society's Exhibitions. That all Members be also entitled to receive a copy of any publications issued by the Society as soon as they appear, and to have the privilege of exhibiting at the Society's Exhibitions.
- 10.—That Local Rose or other Horticultural Societies may, subject to Bye-law 11, become affiliated on a payment of an affiliation fee of 10s. 6d.
- 11.—That no Society be considered affiliated until such affiliation has received the sanction of the Executive Committee of the National Rose Society, and that no Society offering less than £15 in prizes for Roses be entitled to become affiliated.
- 12.—That Affiliated Societies have the privilege of offering for competition



the medals of the National Rose Society, which medals may be obtained for this purpose at the following charges—viz., gold medal £2, silver-gilt medal 12s., silver medal 10s., and bronze medal 3s. 6d. None of these medals shall be awarded by an Affiliated Society for any seedling Rose, or for any decoration, or vase of flowers.

- 13.—That the Society's Regulations for Exhibitions with the exception of Regulations 1, 3, 9, 10, 11, and 12 be binding on all Affiliated Societies.

#### REGULATIONS FOR EXHIBITIONS.

- 1.—The Society shall hold one Metropolitan Show in each year, and Provincial Shows when practicable.
- 2.—No Exhibition of Roses held by this Society, or by any Society affiliated with it, shall extend over more than one day.
- 3.—Exhibitors must give formal notice to the Secretaries of the classes in which they intend to compete at least three clear days before an Exhibition is held. Exhibitors can only enter in one division in the Schedule, in addition to the extra and open classes.
- 4.—Exhibitors will receive on the morning of the Exhibition cards numbered in order to distinguish their exhibits. These cards must be placed on or in front of the stands previous to their being examined by the Judges.
- 5.—No exhibitor can take more than one prize in any class unless specially permitted by the schedule, neither may two or more persons exhibit from the same garden, nursery, or plant-house.
- 6.—The following Roses which are bracketed together are considered synonymous, and therefore must not be shown in the same stand. For instance, Marie Finger must not be shown in the same stand as Eugénie Verdier:—

{ Charles Lefebvre.	{ Baron de Bonstetten.
{ Marguerite Brassac.	{ Monsieur Boncenne.
{ Paul Jamain.	{ Avocat Duvivier.
{ Exposition de Brie.	{ Maréchal Vaillant.
{ Ferdinand de Le-seps.	{ Eugénie Verdier.
{ Maurice Bernardin.	{ Marie Finger.
{ Sir Garnet Wolseley.	{ Duchesse de Caylus.
{ La Rosière.	{ Penelope Mayo.
{ Prince C. de Rohan.	{ Adam.
{ Comtesse de Choiseul.	{ President.
{ Marie Rady.	{ Alba Rosea.
{ Chromatella.	{ Josephine Malton.
{ Cloth of Gold.	{ Madame Bravy.
{ Climbing Devoniensis.	{ Madame de Sertot.
{ Devoniensis.	

- 7.—All Roses exhibited in competition must be from plants which have been grown by the exhibitor for at least three months.
- 8.—All Roses must be exhibited as cut from the plants. Artificial aid of any and every kind is strictly prohibited with the exception of wire or other supports, which are to be used only to keep the blooms erect.
- 9.—Under exceptional circumstances any three Members of the General Committee have power either before or after the decision of the Judges has been given to declare any exhibit disqualified; and their decision will be final.
- 10.—Subject to Regulation 9 the decision of the Judges shall be final; and they shall have the power of withholding prizes should any of the exhibits be considered unworthy.
- 11.—None but Members of the National Rose Society may compete at any of the Society's exhibitions, except the members of a Provincial Society on the occasion of the National Rose Society holding an Exhibition in conjunction therewith.
- 12.—No Seedling Rose which has won a prize at an exhibition of the Society may compete in the class for new Seedling Roses at any of the Society's exhibitions.
- 13.—No person shall be allowed to compete as an amateur who habitually sells Rose plants or Rose blooms, nor any person in the employ of a nurseryman. Any objection raised as to the rightful qualification of an exhibitor shall be referred to the Executive Committee for arbitration, and their decision shall be final and binding on both parties.

Some little discussion arose concerning regulation 8, and the words "or other supports" were inserted after the word "wire," as it was thought this was too exclusive; on the other hand, several considered that the introduction of these words would leave room for some undesirable practices. The question was also asked whether, as blooms are to be shown as cut from the plants, if a leaf were broken afterwards it might be placed with the bloom in the stand. This was at once decided in the negative, as coming under the same head as added foliage. It was then proposed by the Rev. F. H. Gall, seconded by Mr. J. Cranston, that the rules be adopted, which was agreed to unanimously. Mr. D'Ombraïn next read the Annual Report as follows:—

#### REPORT OF THE COMMITTEE FOR 1884.

When a Society is pursuing a prosperous career a certain sameness will generally be found to attach to the reports which it issues from year to year. The Committee of the National Rose Society do not therefore expect to impart any very great variety to the short statement they are now about to make. The exhibitions have as usual been in every way successful, the number of members has increased, while the beneficial influence of the Society on all matters connected with the Rose continues unimpaired.

In one respect the past year has been noteworthy. The Committee have been enabled to bring to a successful termination and to publish the most important work they have yet undertaken—viz., "The Descriptive Catalogue of Exhibition and Garden Roses." The former edition having been so soon exhausted it has been considered advisable to print a very much larger number of copies of the new catalogue, in order to save the cost of reprinting at an early date.

A long-felt want has also been supplied in the form of a carefully prepared list of Bye-laws and Regulations which, having now received the approval of the General Meeting, will be sent to all the Members of this Society during the course of the ensuing year.

**FINANCIAL STATEMENT.**—It will be seen that the Financial Report of the Society is in most respects satisfactory, considering that three exhibitions have again been held, and that some portion at least of the very large expenditure incurred through issuing the new catalogue has already been defrayed. The balance remaining now in the Treasurer's hands is £17 8s. 2d.

**AFFILIATED SOCIETIES.**—The Committee have the pleasure of announcing that there is a slight increase in the number of Rose and other Societies affiliated to the National one, these Societies now amounting to twenty-five.

**ARRANGEMENTS FOR 1885.**—The experience of the last few years has convinced the Committee that the income of the Society is not as yet sufficiently large to admit of their holding three shows annually—that is to say, if they are to undertake any other work in furtherance of the interests of the Rose. They have therefore arranged to hold during 1885 two exhibitions only. The Metropolitan Show will again be held in the Royal Horticultural Gardens, South Kensington, and the Provincial Show will take place at Manchester on Saturday, the 12th July.

**MEMBERS' PRIVILEGES.**—Members subscribing £1 will be entitled to two private view tickets and also to four transferable tickets, admitting at the same time as the general public. Those subscribing 10s. are entitled to one private view ticket, and also to two transferable tickets. Each one of these tickets will be available at either of the Society's exhibitions.

In conclusion, the Committee have again to tender their best thanks for much kind co-operation received during the past year. To the Council of the Royal Horticultural Society for kindly extending the time allotted to Members for a private view of the Roses at the Metropolitan Exhibition; to Mr. Bruce Findlay and Mr. W. H. Williams for the very complete arrangements made respectively by them for the Manchester and Salisbury Shows; and especially to their Local Secretaries for their kind assistance in obtaining new members.

Mr. D'Ombraïn remarked that, as far as he could ascertain, the metropolitan Exhibition would be held at South Kensington; but owing to the peculiar position of the Royal Horticultural Society's relations with the Inventions Exhibition Committee, this could not be certainly determined. It was found that only one provincial exhibition could be held, and the choice had rested between Derby, York, and Manchester; but as difficulties had arisen in connection with the first-named and at York a two-days show was required, which could not be agreed to, the only suitable offer was from Manchester, at which town the show would take place on the Saturday following the London exhibition. This, it was thought, would prove somewhat early for the northern growers, but under the circumstances it could not be avoided. It was proposed by Mr. J. Jefferies, and seconded by Mr. G. Bunyard, and unanimously agreed to, that the Report be adopted, printed, and circulated.

The financial report was then read by the Hon. Treasurer, Mr. T. B. Haywood:—

#### BALANCE SHEET FOR THE YEAR ENDING 30TH NOVEMBER, 1884.

RECEIPTS.			EXPENDITURE.		
	£	s. d.		£	s. d.
Balance at bankers Nov. 30, 1883	6	8 9	Printing, stationery, and advertising .....	53	11 3
Subscriptions (including £1 for 1885) .....	279	18 6	Postage, telegrams, messengers, and sundry expenses .....	23	1
Donations .....	5	0 0	Secretary's travelling expenses to arrange shows .....	6	17 0
Affiliation fees and for medals from affiliated societies .....	41	7 0	Expenses S. Kensington Show ..	7	6 0
From Royal Horticultural Soc. ..	80	0 0	ditto Salisbury Show .....	3	7 6
From Manchester Botanical and Horticultural Society .....	100	0 0	ditto Manchester Show .....	6	5 0
From Salisbury .....	50	0 0	Medals .....	6	5 5
For prizes from T. B. Hall, Esq. ..	3	0 0	Ditto for provincial societies .....	36	0 10
ditto C. E. Cuthell, Esq. ....	2	0 0	Accountant .....	5	5 0
ditto G. Prince, Esq. ....	5	0 0	Prizes South Kensington Show ..	163	15 0
			do. Salisbury Show .....	101	10 0
			do. Manchester Show .....	145	0 0
			Balance at bankers .....	17	8 2
	£575	14 3			
To balance .....	17	8 2		£575	14

This was adopted, and Mr. Mawley remarked, as showing that the Society was steadily progressing, that the subscriptions received each year since 1878 were as follows:—1878, £213 4s. 6d.; 1879, £216 14s. 6d.; 1880, £239 15s. 6d.; 1881, £247 5s. 6d.; 1882, £273 9s.; 1883, £273 12s.; and 1884, £279 18s. 6d. Votes of thanks to the Horticultural Club for the use of their rooms, to the officers of the Society, and to the Chairman brought the ordinary business to a conclusion. In presenting Mr. Mawley with the watch and clock already mentioned, Mr. Cuthell remarked that £83 had been collected for the purpose, £54 of which was expended for the watch, and that the members had thought that the approaching marriage of Mr. Mawley rendered the time an opportune one for conveying to him these useful presents, that would serve to constantly remind him of his numerous friends. Mr. D'Ombraïn said it gave him great pleasure to assist in recognising the energy and assiduity of his colleague, who had worked very hard for the benefit of the Society, and much of its success was due to his efforts. Mr. Mawley replied in a few appropriate terms to the effect that he greatly appreciated the kindness of his friends, that a good deal of work necessarily fell to the share of the junior Secretary of a large society like the National Rose Society; but that so heartily had he been supported by his colleagues, so harmoniously had the Committees worked together, and so much had he become interested in the Society's welfare, that he had been quite unconscious until now that he had been doing anything at all unusual in his endeavours to forward the interests of the Society.

The meeting then concluded, but several members remained to the dinner, which took place early in the evening.

#### TABLE DECORATIONS FOR CHRISTMAS DAY.

WE have several inquiries upon this subject, and we cannot give a better reply than is furnished by the following chapter in the work on "Floral Decorations" by Annie Hassard, to which we have previously referred in commendatory terms.



"This is a day on which friends and relations hope to meet; therefore a few hints on floral decorations suitable for the dinner-table at this season will not be out of place here. I will, therefore, give descriptions of two tables, one for those who have plenty of choice flowers from which to cut, and another for those who may not have such an abundant supply at their command, or who do not care to go to much expense if they have to purchase them. Table No. 1 we will suppose to be about 12 feet, and table No. 2 about 8 feet long, the width of both being in proportion to their length. As regards the decorations which I shall describe, it does not matter if the ends of the table be rounded, or if the table itself be oval, a form, indeed, which is more effective than a table with square ends. People are not, however, likely to change their tables for the sake of floral decorations; therefore I shall at once turn to table No. 1. Down the centre I should put three March stands, with trumpets rising out of the top tazzas, the centre stand being the highest by some inches; round the edge of the bottom dish of the centre stand I should place mixed varieties of Ferns, and four fronds of a golden one, reversed so as to show the gold side; in the dish I should put four large Arum blooms and four bracts of Poinsettia, and then fill in with white Heaths, Primulas, and similar flowers. Close to the glass stem which supports the upper dish I should place three large bunches of Holly berries, and up the stem twine a spray of a small-leaved Ivy. Round the edge of the upper tazza I should put fronds of Maidenhair Fern to droop gracefully over, and through them mix some blooms of scarlet and white Lapageria, say two of each. I should next place in the dish four blooms of Eucharis amazonica, four sprigs of scarlet Bouvardias, and two of Holly berries, the latter to rise above the other flowers, close to the base of the trumpet; and the trumpet itself I should finish off with Roman Hyacinths, scarlet Begonias, one small sprig of Holly, and Maidenhair Fern. Through the flowers in the two tazzas, large fronds of Adiantum cuneatum should be arranged so as to wave lightly over them, and from the trumpet I should bring down four long sprays of Lygodium scandens to trail out on the tablecloth.

"The two end stands I would arrange in much the same style, using, say, in place of the Poinsettias, scarlet Pelargoniums, and Camellias in place of the Arums; in the second tier I would substitute Azaleas for the Eucharises, and let the trumpets be filled with scarlet Begonias and Lily of the Valley. Round the edge of the lower tazza some leaves of the variegated Ivy can be laid out on the Ferns, here and there, with good effect, and plenty of Maidenhair Fern should be mixed through the flowers. Between the centre-piece and the ends stand two well-grown plants of Adiantum cuneatum, which should be dropped into ornamental china pots, and the surface of the soil should be covered with Lycopodium. Opposite each guest I should place, in a specimen glass, a buttonhole bouquet made of flowers that will look well at night. Floating on the water, in the finger-glasses, I would put three leaves of the Oak-leaved Geranium called Lady Plymouth, the centre of each being pierced by the stem of a pip of a double scarlet Pelargonium, so as to allow one flower to rest on each leaf.

"So much for the floral part; let us now turn to the fruit. Such a table as has just been described will require a good many stands of fruit—probably ten. At the top I would put a handsome Melon, at the bottom a Pine, with a few sprigs of Holly berries arranged round the base of both the Melon and the Pine to indicate the season. Grouped round the centre-piece four glass baskets of Grapes, two light and two dark, would look well. There are now four more stands to be employed, and these I should have also of glass, of a flat oval shape, and filled with Apples, Pears, Walnuts, and Filberts, the Nuts and the Pears and Apples being placed opposite each other. Any vacant places on the table may then be filled in with smaller dishes containing crystallised fruits, ice, sugar, or anything else that may be desired.

"As respects table No. 2, a stand similar in shape to that described for table No. 1 would look well in the centre. A different one might be used, but a March stand is one that is to be found in almost every house where floral arrangement of any description receives attention. Round the edge of the bottom dish should be placed some fresh Fern fronds (hardy kinds), and on these might be rested some leaves of golden and silver varieties of Ivy; the dish should then be filled in with white Chrysanthemums, scarlet Pelargoniums, Laurustinus, Holly berries, Arbutus berries, white Lilac, and a few fronds of Maidenhair Fern, whilst up the glass stem might be twisted a spray of variegated Ivy. Then from the edge of the second tier might be drooped some long sprays of Selaginella denticulata, and in the tazza itself be arranged some scarlet Pelargoniums, Jonquils, or any other scarlet or white flowers that may be at hand, and a few fronds of Maidenhair. Round the mouth of the trumpet should be put some Selaginella, finishing off with a few light-looking scarlet and white flowers, Ferns, and Grasses, and two or three leaves of Pampas Grass, placed outwards in a graceful wavy manner. Round this centre stand should be arranged eight specimen glasses, four of the usual height, and four rather shorter; these should be filled with flowers similar to those used in the centre-piece. At the top and bottom, where, in the larger table, the two other stands would be, two well-berried plants of Solanum Capsicastrum should be placed, the rough pots being dropped into more ornamental ones, fresh moss placed over the soil, and three pods of Iris foetidissima pricked into each. Some white and black Grapes should be put at the top of the tables, and Apples at the bottom. Pears, Nuts, Medlars, &c., or any other fruit it may seem desirable to add, can be then placed at the side, but its selection is left entirely to the discretion of others."

DANISH FORESTS.—M. Hansen-Blangsted contributes to *L'Exploration* an interesting article on the struggle between trees in the Danish forests.

The chief combatants are the Beech and the Birch, the former being everywhere successful in its invasions. The paper refers especially to the district of Silkeborg in the heart of Jutland. Forests composed wholly of Birch are now only found in sterile sandy tracts; everywhere else the trees are mixed, and wherever the soil is favourable the Beech rapidly drives out the Birch. The latter loses its branches at the touch of the Beech, and devotes all its strength to its upper part, where it towers above the Beech. It may live long in this way, but it succumbs ultimately in the fight—of old age if of nothing else, for the Birch in Denmark is shorter than that of the Beech. The writer believes that light is the cause of the superiority of the latter, for it has a greater development of its branches than the Birch, which is more open, and thus allows the rays of the sun to pass through to the soil below, while the tufted bushy top of the Beech retains them, and thus preserves a deep shade at its base. Hardly any young plants can grow under the Beech except its own shoots; and while the Beech can flourish under the shade of the Birch, the latter dies immediately under the Beech. The Birch has only been saved from total extermination by the facts that it had possession of the Danish forests long before the Beech ever reached that country, and that certain districts are unfavourable to the growth of the latter. But wherever the soil has been enriched by the decomposition of the leaves of the Birch the battle begins. The Birch still flourishes on the borders of lakes and other marshy places, where its enemy cannot exist. In the same way in the forests of Zealand the Fir forests are disappearing before the Beech. Left to themselves the Firs are soon replaced by the Beech. The struggle between the latter and the Oak is longer and more stubborn, for the branches and foliage of the Oak are thicker, and offer much resistance to the passage of light. The Oak also has great longevity, but sooner or later it, too, succumbs, because it cannot develop in the shadow of the Beech. The earliest forests of Denmark were mainly composed of Aspens, with which the Birch was apparently associated; gradually the soil was raised and the climate grew milder; then the Fir grew and formed large forests. This tree ruled for centuries, and then ceded the first place to the Holm Oak, which is now giving way to the Beech. Aspen, Birch, Fir, Oak, and Beech appear to be the steps in the struggle for the survival of the fittest among the forest trees of Denmark.—(*Nature*.)

#### MILDEW ON ROSES.

MR. BARDNEY'S letter on mildew (page 527) opens what is to me an entirely new experience as to the comparative freedom of Roses from this complaint in heavy and light soils, and I should be glad if some who have had more varied experience than I in Roses under different circumstances would favour us with their opinion.

I have had some thirty years' experience in Rose-growing on a very heavy clay, and with, possibly, the lowest rainfall in England; and I have constantly observed that, whether the season be wet or dry, I seem to have far less of this fungus than my neighbours; nay, in purchasing Roses from the best growers in England to fill up gaps, I have seen in the few score purchased more mildew than I could find in the whole of my rosery.

This year the Journal has had many complaints and letters on the subject, and I have seen other Rose grounds grey with fungus, while I could count on the fingers of one hand the varieties which have been attacked, except perhaps a spot here and there, and the worst have had half a dozen leaves affected, or, say, a dozen in the case of large bushes of Madame G. Luizet, nor have I thought it worth while to apply a remedy. Doubtless some of your readers have seen many gardens both in light and heavy soils this year, and we shall all, I think, be glad to know the result of their inspection. In wet seasons I have more mildew than in the last, but even then it was not so bad as with my neighbours. I am almost inclined to attribute the exemption of some soils and the liability of others to some at present unknown chemical constituent in the soil, especially as I have heard of one case where, without any visible reason, one half of a garden was covered with mildew and another free.

Partly, no doubt, my treatment of my Roses may account in some measure for my good fortune in seasons like the past. I have fortunately a practically unlimited supply of pond water, and my garden has been not watered but soaked at short intervals throughout the drought; no light business with some 1500 Roses, but well worth the trouble. I do not think ordinary watering does much good, but, after all, this will not account for the result in wet seasons. The clay is well drained of course.—DUCKWING.

#### THE DESTRUCTION OF FORESTS.

ATTENTION has been previously called to the havoc which has been going on for so many years in the forests of every quarter of the globe; but no apology can be necessary for returning to a subject which must speedily compel the hearing now too generally denied. The chief seat of the destruction is at present in the United States, where it has been long progressing at a rate which has often excited the fears even of the persons engaged in it. But some facts and figures just published in an American journal are of a kind which, combined with the manner of their statement, should surely have power to do more than raise an incredulous eyebrow. It is said that "the lumber industry will, in all probability, in the course of ten years or so, be transferred from the northern lake region to the south." Few persons will realise all that this matter-of-fact announcement implies; but it is, in reality, a comprehensive admission of the truth of the charges made against the lumbermen's practices. It



means this: that the twenty years, which a short time since was the period allowed by the Lumbermen's Exchange in Chicago "for the exhaustion of the Pine forests of their district," formed an unnecessarily liberal estimate. The statement means, moreover, that when the 146,000 hands now engaged in the business have felled the last tree in the northern territory, they will be by no means content with the contemplation of their work. "The magnificent pineries of Michigan and other States in the lake region are fast disappearing before the axe; but the whole south is a forest region, and when the northern lumber supply fails the great saw-mills will be removed to the southern forests, and these will become the new centres of the industry." There is a savour almost of brutality about this bare summary of the situation. No touch of regret softens either record or forecast; and that the latter will in due course be justified, there seems unhappily little reason to doubt. During

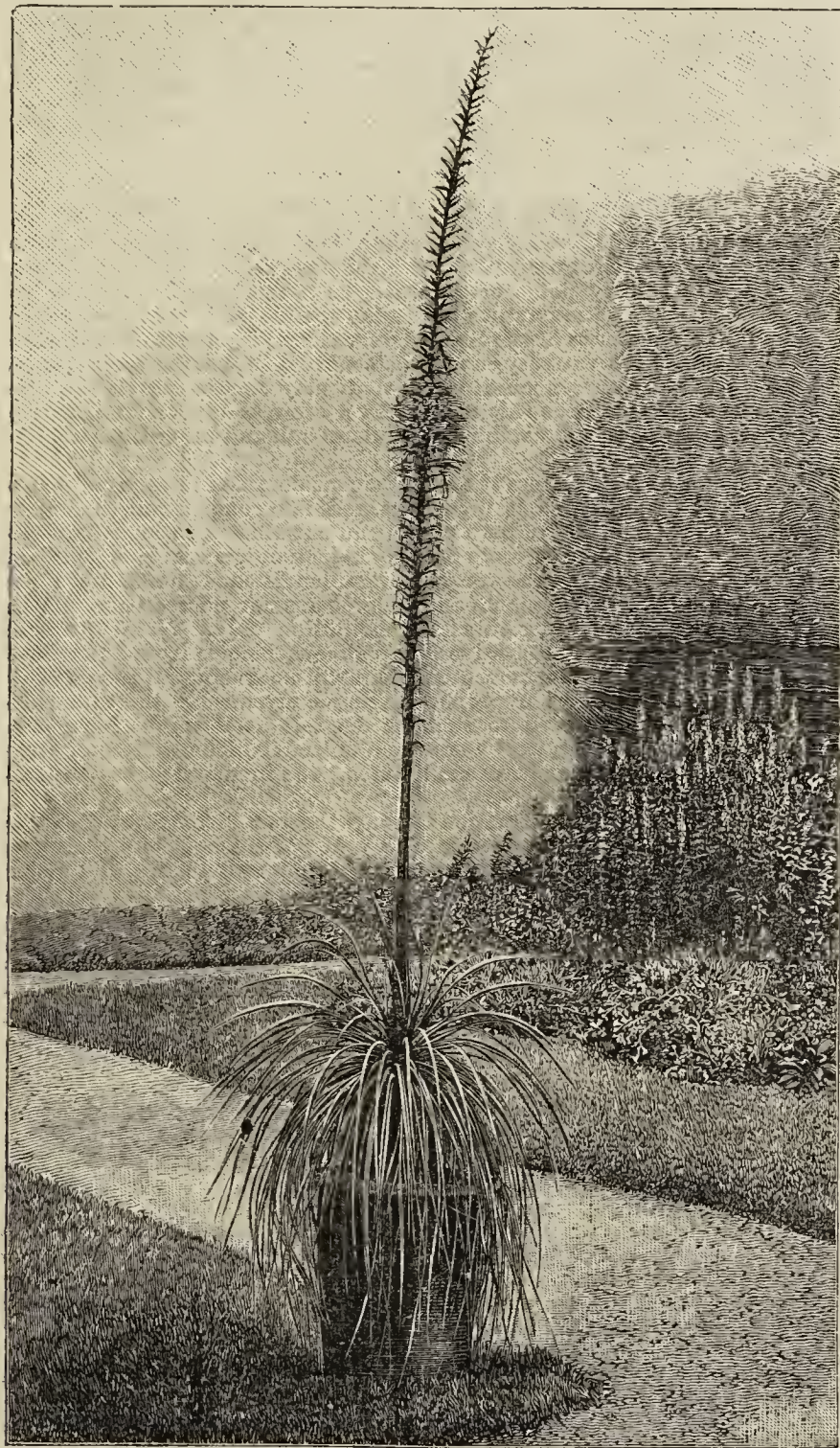


Fig. 93.—Agave geminiflora (Bonapartea juncea).

seven months of the year 200,000 feet of lumber are daily sawn into planks in one mill in Ottawa, and there are over 25,000 such establishments at work in the country. It is obvious that not even the majestic areas of the American forests can long stand before such a terribly destructive force, exercised without judgment, and succeeded by no system that makes practical restitution to the soil. Of the results of this wholesale denudation there are already abundant signs. In the States chiefly affected, the volume of many of the tributary streams is lessened, droughts are frequent, and the productive qualities of the neighbouring farms seriously impaired. It was observed by Humboldt that in the tropical regions an immense variety of trees live separately or "unsocially;" and it is clear that, owing to the immediate benefit reaped from them, trees thus situated are more jealously conserved than their woodland brethren. It is the province of forests beneficently to modify the climate of the adjacent plains, in the cultivated enclosures of which their loss is the most appreciable. Of the succour thus afforded there is, however, little general recognition—unless, indeed, by the forestry officers appointed by the Governments who systematically evade their representations.

Many portions of Australia and New Zealand, it has been found, are also, in their turn, suffering from the multitude of "clearings" made by the early settlers, whose crude efforts may to some extent be condoned by the exigencies of their position. Even now, however, many colonial areas of cultivation—of which rather boastful accounts are given—are annually extended by the unconsidered destruction of the forests on which much of their ultimate fruitfulness must depend. The "progress" of Florida has of late years been remarkable. This State contained in 1860 only 6586 farms: a number which had risen to 23,438 in 1880. We are told that this indicates a large influx of farmers from other States; but it also "indicates" a wide levelling of the forests of Oak and Cedar, Pine and Hickory, for which Florida was once famous. The Pampas of South America are also gradually falling under cultivation, and are here and there covered with crops of Wheat and Maize. Their permanent productiveness, however, will be greatly assisted by the maintenance of the bordering forests: a fact of which the Argentine Government appears to be quite exceptionally conscious. In Canada, on the contrary, the long indifference of the authorities to an average annual production of no less than 2,600,000,000 feet of lumber (broad measure) has been at last compelled to give place to anxiety; and the Dominion Government is now reserving large "blocks" of forest at the base of the Rock Mountains, lest the injury to the climate should become irreparable. From an interesting paper contributed by Sir George Birdwood to the catalogue of the Indian section of the Forestry Exhibition, it is apparent that east and west there has been a singular community of official apathy upon this subject. Of Afghanistan the writer declares that "a once fertile and wealthy country has thus been converted into an inhospitable desert." The Forest Department of India has happily been able to arrest, and in some degree repair, the ravages which up to some forty years ago had been going on for centuries in the forests of India and Burma. The whole of Central Asia has more or less suffered from similar causes.—(St. James's Gazette.)

#### AGAVE GEMINIFLORA (BONAPARTEA JUNCEA).

THIS is one of the most graceful of the important genus Agave, and it is very distinct from every other species. As will be seen from the accompanying illustration it has a short thick trunk, which bears a crown of very numerous narrow linear recurving leaves. From the centre proceeds a tall stout flower-stem, which, when seeds have been matured, closes the career of every individual, this species being what is termed monocarpic, or fruit-producing once only in a lifetime. Fine specimens have from 200 to 300 leaves  $1\frac{1}{2}$  or 2 feet long. They are convex on both surfaces, deep green in colour, with threads splitting away more or less from the two edges, and are flexible and without teeth. The flower stem may reach a height of 24 feet, but usually in cultivation it is from 6 feet to perhaps 10 feet high. The flowers are in pairs, very close together, and with open blossoms the inflorescence is from 6 to 8 inches through. The flowers are about  $1\frac{1}{2}$  inch long, of yellowish green colour, with long protruding stamens. The plant flowered first in 1815 in the garden of Count von Litta near Milan, and in his honour the name *Littea geminiflora* was given by Tagliabue. It has also been called *Bonapartea juncea* and *B. flagelliformis*, and has been referred as well, without ground of course, to *Yucca* and *Dracæna*, with the specific name *Boscii* in both cases. Mr. B. S. Williams has, or had, a hybrid between this and *A. densiflora*, which he calls *A. Tylori*. It is most like the present plant though very distinct in character.

*A. geminiflora* is a native of Mexico. Its culture is by no means difficult. It requires a greenhouse temperature, and loamy soil is the best, though it is not particular as to what it is grown in. With the loam it is an excellent plan to mix broken bricks as well as sand, so as to afford free drainage. There is no danger of harm from too much water if the drainage is good, and perhaps the only thing to guard against is starvation, which causes the plant to flower prematurely and its loss in consequence, though usually it lasts many years. It is easily raised from seed, which it produces very freely.—R. IRWIN LYNCH.

[The engraving (fig. 93) has been prepared from a photograph forwarded to us by G. T. Clark, Esq., Dowlais House, Dowlais, Glamorgan-shire, with whom a plant has flowered this season. He gives the following particulars:—The plant came from Belgium in 1870, so that it is of good age. It began to throw up the flower stem about June, and attained a height from the base of the pot to the top of the flower stem of 9 feet 6 inches.]

#### NATIONAL AURICULA (SOUTHERN SECTION) CARNATION AND PICOTEE SOCIETIES.

IN consequence of the decision arrived at at the annual general meeting of the above Societies, as recorded last week, that rules be adopted for their governance, and the ratification of the resolutions pertaining to the appointment of officers, including a Treasurer and one Secretary (Mr. James Douglas), we are informed that Mr. E. S. Dodwell has signified his intention of retaining the books and moneys of the Societies, and also of appealing to several



members who did not attend the meeting to continue the payment of their subscriptions to him as usual. But although this information has been conveyed to us, we are reluctant to admit its accuracy, and more especially since by taking an active part in the discussion of the draught rules and making suggestions that were adopted in perfecting them, Mr. Dodwell admitted in a very practical manner the validity of the votes that had been previously recorded.

The late senior Secretary and Treasurer of the two Societies was quite justified in refusing to accept the verdict of the meeting held in October, where the resolutions recommending the changes were adopted, on the ground that the whole of the members had not been apprised of that meeting and its objects; and he was consequently equally justified in securing as many adherents as possible to his view of the case. Not the slightest objection was made to the action he took in securing all the votes he could obtain for gaining a decision in his favour at the meeting held last week; but since he failed in his object, and acquiesced in the decision of the majority by taking part in framing the rules, he cannot either with propriety or consistency pursue any such course as that above suggested. After he failed in his object it was open to him to retire from the meeting, but instead of doing so he permitted himself to act as a member of the special Committee, and as such he advanced propositions and voted, thus recognising in the most formal manner the authority of that meeting to pass, beyond question, the resolutions that had just been signed by the Chairman.

Whether the October meeting was informal or not, no rules were certainly infringed; while precedent was entirely in its favour, as the Committee had full power to act, and had always acted as the sole directorate of the Societies. The absence of rules that gave that power may have been a mistake, and the error is now rectified. Nor can it be contended that the last formal and authoritative decision has been the result of hasty action. The whole circumstances have been before the members for nearly two months, yet notwithstanding the strenuous exertions of an untiringly active ex-official of the Societies the disputed rules have been adopted with emendations suggested by Mr. Dodwell and his supporters at the general meeting.

By that decision no members who accepted it, as did all who were present by acting under it, can, so long as they continue members of the Societies, take any action inimical to the interests of either one or the other of them, nor place any impediments in the way of the regular transaction of business, without laying themselves open to a charge of disloyalty and placing themselves in a position that is quite indefensible. As to the retention of property, of which Mr. Dodwell announced his intention at the meeting and thereby merited a rebuke from the Chairman, that is a matter that cannot be further discussed here; and it is not to be supposed that many persons could be found to act so rashly as to make payments to the Societies otherwise than through the officers properly qualified to receive them, as by doing so they would place the receiver in an unfortunate and unenviable position. It is to be hoped that no ill-considered action on the part of anyone will lead to further difficulties now that rules have been made and ratified for their avoidance, but that wise counsels will prevail and harmony will be restored in the cause of mutual goodwill and the interests and well-being of the Societies, which none but their enemies can desire to see in other than a flourishing condition.

And, after all, what reasonable objection can be taken to the formulation of rules that are equally fair to all? It is scarcely conceivable that they can be regarded with suspicion except by persons who desire privileges that are not accorded to others, and such persons are happily so rare as to be almost phenomenal. It is true organisations of individuals may work for a common object without rules for guidance when mutual trust is firmly established amongst them that no one of the number would think of doing anything not conformable to the wishes of the entire body. But when differences arise of whatever nature, and conflicting views are tenaciously held, rules become imperative. They have been found necessary for the governance of the National Rose Society, and are certainly not less needful for the Societies under discussion; indeed, taking a broad view of the matter, a national society without rules may almost be described as a national anomaly.

But Mr. Dodwell has made no secret that the rules are distasteful to him because it has been determined to have only one Secretary instead of two, and that Mr. Douglas has been elected. It is not difficult to apprehend that the Committee had good reasons for recommending the change apart from any personal consideration whatever, except that of personal fitness for the office. So long as the two Secretaries practically resided in London and could consult together without inconvenience, business could be transacted without any material difficulty; but when circumstances placed them seventy miles apart the dual control has been admitted by Mr. Dodwell to be irksome, and it was not advantageous to continue it. Wherever the exhibitions of the southern section of the Societies may be held it will not be disputed that London is the proper place for the head-quarters, and there cannot be many persons who regard the matter solely from a business point of view, which can hardly be the wrong one, who will not perceive that where the head-quarters are there the officers should be also. That is sufficient to settle the matter; but there is another element in the case. All who know the late senior Secretary are fully aware that he is very far from enjoying the good health his friends desire to see. He has confessedly attended meetings when not in a fit state to be present; indeed, at the meeting of last week, when he rose to speak he was some moments before he could do so. His first words were that he was "quite unfit to be present," and the Chairman and members, in sympathetic unanimity, invited him to resume his seat and therefrom address them, which he did. It is not necessary to say more than that if Mr. Dodwell desires to maintain and strengthen the Societies for which he professes such great regard, he can, when his health permits, take part as an ex-officio member in the deliberations of the Committee, and he knows he will receive all the respect that is due to him from the members; but if, on the contrary, he be so ill-advised as to pursue the course he announced at the meeting, there can only be one result, and that result we have no desire to see.

#### THE INSECT FOES OF THE ROSE.

I REGRET that I can identify at this moment the grub referred to by Y. B. A. Z." as infesting the buds of the Rose. I may be the larva of

a weevil as he suggests; it might be, however, that of a fly. We have an example of an injurious fly larva in that of *Trypetra continua*, which is found at times lying concealed in the fruit of the Rose, the result being that it crumbles to dust after the seeds have been eaten up by the insect. The list of species affecting the Rose is a long one, far longer than indicated by the recent correspondence; but then no horticulturist through personal observation is likely to come across all the insects which have been reported as Rose enemies, so much depends upon seasons and localities. Some of the specially annoying foes of the Rose belong to the moth tribe. Most persons know the Rose-leaf roller, *Argyrotoza Bergmaniana*, the larva of which haunts the flower heads, twisting round the young blooms with the leaves around them, and for which when seen there is no remedy except cutting away the shoots attached. A somewhat similar method is pursued by the larva or caterpillar of the brown clock (*Spelotona aquana*), a less abundant species. These larvae are at once distinguishable from the grubs of beetles and flies by their cylindrical bodies and the possession of legs and claspers. One of the correspondents of this Journal reported last year that his Roses had suffered severely in the twigs from a species of beetle which turned out to be the familiar Pea weevil, *Sitona lineata*. This probably must be regarded as an exceptional instance.—ENTOMOLOGIST.

#### DUNFERMLINE CHRYSANTHEMUM SHOW.

THE third annual Exhibition of the Dunfermline Chrysanthemum Society was held in St. Margaret's Hall on Saturday the 6th inst., and was undoubtedly from every point of view the best which the Society has yet held. Owing to the stormy nature of the day the attendance of visitors was much less than the merits of the Show deserved, and is much to be regretted, as the Committee deserve every encouragement and support in their spirited efforts to bring together such rich floral display as was provided on the occasion, more especially as this is one of very few, if not the only Chrysanthemum Society, as yet established in Scotland, and as such entitled to special support.

In the number of exhibitors there was a considerable increase, as well as in quantity of plants and cut flowers staged for competition, while the improvement in the quality of both plants and cut blooms, as compared with former years, was so marked as to be the subject of general comment, and was highly creditable to the growers, gardeners and amateurs alike. Besides the departments of plants and cut blooms for competition, several handsome groups were contributed for exhibition only. Notable among these was a large and representative group of cut blooms from John Reed, Esq., Old Clock House, Winchmore Hill, Enfield, embracing all the different sections. Owing to a want of proper staging conveniences this admirable collection was not displayed to such good effect as it might have been. From Messrs. Cannell, Swanley, were some splendid blooms, *Hero of Stoke Newington*, Mrs. Sharpe, and Antonelli among the incurved being particularly good.

The source of greatest attraction among the cut blooms was decidedly the grand box of eighteen contributed by Mr. William Comfort, Knowle Hall, Birmingham, each bloom being remarkable for size, build, and finish. This formed by far the best stand of specimen blooms which has yet been staged at this Show, and was deservedly admired of all. Unfortunately through some oversight they were staged without names, thereby causing much disappointment to many anxious inquirers. Mr. Campbell, Pilmuir Street Vineries, exhibited an extensive and varied collection of stove and greenhouse plants, which had the effect of causing a pleasing diversity in the profusion of colour around. In the class for six plants in pots the competition was very close, Mr. J. Grahame, gardener to W. & J. McLaren, Esq., securing first place with neat well-flowered examples, Mr. W. Garrett being second, and Mr. P. Cameron third with plants very little behind those in the first lot. In the threes Mr. Garrett was first, Mr. James Coventry, gardener to Provost Donald, taking second place. In Pompons Mr. Garrett again secured first with three beautifully flowered specimens, Mr. J. Grahame and P. Cameron following in the order of their names.

In the corresponding classes for amateurs the principal winners were Messrs. R. Boag, Peter Marshall, and Hugh Foote. The competition in cut blooms was both large and good, Mr. E. Johnstone, Batmule, showing very creditable blooms for his first in eighteens, as did also Messrs. J. Walker and John Jackson for their second and third respectively. For twelves Mr. E. Johnstone was again first, Mr. A. Comfort, Aberdour, being second, and also obtaining the special prize for the best bloom in the Show with a grandly finished bloom of Mrs. Dixon in the same stand. Among the amateurs many really good blooms were exhibited, the principal winners being those already named.

#### ON THE AUTUMNAL TINTS OF FOLIAGE.

AFTER the fine display of autumnal tints which we have lately seen it may, I trust, be of interest if I give an account of the chief conclusions to which I have been led by carefully studying the subject for many years.

As a general rule the colour of leaves in their normal condition depends on a variable mixture of two perfectly distinct green pigments and of at least four perfectly distinct yellow substances. The development of the autumnal tints is mainly due to the disappearance or change of the green constituents and to the production of highly coloured pigments by the oxidation of previously existing very pale or colourless substances. It is, in fact, due to a more or less complete loss of the vitality which previously counteracted these chemical changes, and the order in which the tints are developed can be easily explained if we assume that the death of the leaves takes place somewhat gradually. The first visible effect of the reduced vitality is the change in the green pigments. In many cases they appear to be converted into colourless products, since the resulting bright yellow leaves differ from the normal green in the absence of chlorophyll, and merely contain the usual previously existing yellow pigments. At the same time it is quite possible that an increased quantity of some of these yellow substances may be formed as a product during the change, but of this there is no positive proof. In the case of such trees as the Alder, the chlorophyll does not thus disap-



pear, but is changed by the presence of a weak acid into a very stable brownish-green product which resists further change. The production of bright yellows or dull browns thus clearly depends on whether the chlorophyll does or does not disappear before being modified by the action of acids, as may be verified experimentally by exposing suitable solutions to sunlight. It is, however, very clear that the manner in which it changes depends very much on the condition of the case. Thus, if chlorophyll is exposed to sunlight dissolved in bisulphide of carbon, a reddish-coloured product is formed, and though this differs very greatly from the red pigment met with in many autumnal leaves, it seems probable that under some conditions the chlorophyll in leaves is changed by the action of light into a red substance. By taking green Sorrel leaves and keeping them somewhat fresh by sticking the stalks into moist ground, I found that those exposed to the sun with the under side upwards turned to a bright red, whereas those kept in the shade did not develop any fine colouring. We may often see that partially broken leaves or twigs undergo this change when all other parts of the tree remain green, and this and various other facts lead me to conclude that the change of chlorophyll into a red product depends on a certain amount of reduced vitality as well as on little-understood conditions varying in different kinds of plants. Though I fully admit that there are some facts not easy to understand, yet on the whole it seems to me that these principles fairly well explain why certain leaves turn red in autumn. Slight frosts reduce their vitality in such a manner that the chlorophyll is changed by the action of the light into a red product. Thus, according to the character of the season and the nature of the plants, the first effect of the reduced vitality in the leaves is that the chlorophyll is removed so as to show their normal yellow colour, or is changed into a red pigment, or is altered into a comparatively stable dull brown green product. These are the three extreme changes, but in many cases intermediate mixed results give rise to such less perfect and well-marked tints as dirty yellows and reds.

The next series of changes is best studied in the case of those leaves which in the first instance turn to a bright yellow, and it appears to me that they depend mainly, if not entirely, on the production of deeply coloured pigments by the oxidation of tannic acid and other more or less colourless substances. The difference in the resulting tint seems to depend on the nature of these substances. Thus, for example, the tannic acid in the yellow Oak leaves changes into a brown substance, whereas the quinotannic acid in yellow Beech leaves changes into the fine orange-brown colour which makes those trees so ornamental in autumn. On the contrary, the bright yellow Poplar leaves rapidly pass to a dark dirty brown by the alteration of another constituent. Other kinds of leaves give rise to tints of an intermediate and less well-marked character. In many cases it is almost impossible to draw the line between the colour of this stage in the change and the final dark and dirty browns of dead and decaying leaves. For fine effect very much depends upon the production of each special tint in a fairly pure state, so as to show bright yellows, reds, and browns. This seems to be influenced by the character of the weather. It is also, of course, important that the half-dead leaves should hang long on the trees, so as to develop their full colouring before being blown off by the wind.

Taking thus all the facts into consideration, it appears clear that all the bright and beautiful tints of autumn are merely the earliest stages of decomposition, and are due to the more or less considerable triumph of chemical forces over the weakened or destroyed vitality of the living plant. One cannot but feel that this is a very unpoetical way in which to regard the magnificent tints of a fine autumnal landscape, but it is no less true than that the coloured clouds of evening mark the departing day.—H. C. SORBY (in *Nature*).

#### ON SOME CHANGES WHICH NITROGENOUS MATTER UNDERGOES IN THE SOIL.

A COURSE of lectures on agricultural science was delivered at South Kensington last season, and these are now published in book form by Messrs. Chapman & Hall. They comprise a number of subjects connected with agriculture, but the following by R. Warington, Esq., F.C.S., is of general interest to both gardeners and farmers:—

"The soil beneath our feet has been universally regarded as in some mysterious sense the mother of us all. To us, in the present day, the manner in which soil supports the life of plants and animals is still mysterious, in the sense that we are yet in the dark as to the nature of many of the substances contained in the soil, of the changes which they undergo, and of the part which they take in plant-nutrition. This is especially true with regard to the organic matters, consisting of carbon, nitrogen, hydrogen, and oxygen, which the soil contains. We may, I think, usefully spend an hour this evening in attempting to sketch the general history and course of change of this organic matter, though in so doing we may often have to speak rather of our ignorance than of our knowledge. I will ask you to fix your attention at present chiefly upon one constituent of this organic matter—its nitrogen, as this is the aspect of the question which has most agricultural importance. Our subject, then, is the nitrogenous organic matter of the soil: Whence comes it? What becomes of it?

"In order to start with definite notions on the subject, let us take as an example an ordinary arable field, of clay soil, in fair agricultural condition. Such a field, when all stubble and roots have been removed, will contain in the first 9 inches of the surface soil a quantity of organic matter containing about 3000 lbs. of nitrogen, and 30,000 lbs. of carbon per acre. This nitrogenous organic matter of the soil has been derived either entirely from the decay of the vegetable matter left in the land by preceding generations of plants, or possibly, to some extent, from past applications of farmyard or other organic manure. It is very important to bear always in mind that the nitrogenous capital of a soil, which represents to a considerable extent its agricultural condition, depends as a rule on the bulk and composition of the previous crop residues, and on the extent to which these have been subsequently destroyed by operations

which we shall presently have to notice. The present fertility of the soil is thus, in great measure, a consequence of its past fertility.

"It is quite true that besides the residues of crops soils receive certain amounts of nitrogen from the atmosphere in the form of ammonia and nitric acid; but the quantity of these substances contributed annually by rain is apparently not more than 3 to 4 lbs. of nitrogen per acre; and though the amount of ammonia directly absorbed by the soil from the atmosphere may in some soils be much larger than this, the total nitrogen thus acquired, though most important as tending to counterbalance the losses of nitrogen which the soil annually suffers, will have little effect on the present fertility in comparison with the large accumulations of nitrogenous matter resulting from previous crop residues.

"The nitrogenous organic matter of the soil has its origin in the various vegetable substances left in the soil as residues from preceding crops, to which in some cases we must add the residues from dressings of organic manures. A recognition of this fact is of vital importance if we are to have accurate notions as to the influence of different crops in maintaining or exhausting the fertility of the land. It is evidently the crop which leaves behind the largest amount of roots, stubble, and leaves, which will best maintain or increase the nitrogenous capital of the soil; while the crop leaving the smallest residue in the soil will be most exhausting in its effect. Permanent grass and Clovers will thus stand at the head of the list as conservers of soil nitrogen, while root crops carted from the land will be placed at the opposite end of the scale.

"We may now ask—What becomes of the organic matter in the soil? What course of change does it undergo?

"Before saying anything as to the stages of this course of change, or about the means whereby the transformations are effected, it will be well to state at once that the organic matter in a fertile soil is continually undergoing oxidation by various agents, the general result being its conversion into three simple substances—water, carbonic acid, and nitric acid. The vegetable residues left by crops are thus reconverted into plant-food, and made fit to support the life of a new generation of plants.

"That carbonic acid gas is formed in large quantities in soil has been abundantly proved by Boussingault and Lévy, and by a number of more recent experimenters. The quantity of carbonic acid produced is greater according to the richness of the soil in vegetable matter, and is much increased when farmyard manure has been applied. The carbonic acid is formed in largest quantity in summer time; the amount is also generally much increased by applications of chalk or lime.

"That nitrates are produced in soil has been known from very early times. Many examples of the quantities of nitrates existing in agricultural soils of various history are given in the tables illustrating this lecture. The facts connected with this part of the subject are, however, of so much practical importance that they will be best considered by themselves after the general sketch of the course of change of the organic matter has been completed.

"The first stage in the oxidation of a crop residue is marked by a rapid disappearance of carbon, doubtless evolved as carbonic acid, the nitrogen apparently remaining still in organic combination. The mean proportion of nitrogen to carbon in seven analyses is about 1:19, the extremes being 1:15 and 1:23. We are thus fairly well acquainted with the ratio of nitrogen to carbon in the crop residues and manure, from which the organic matter of soil is derived. If we now compare these ratios with the ratio shown by the organic matter of the soil, the disappearance of carbon becomes very striking. In the first 9 inches of the old pasture land at Rothamsted, with roots as far as possible removed, the ratio of nitrogen to carbon is about 1:13, while in the same depth of arable soil the ratio is about 1:10, and does not reach 1:12 even where 14 tons of farmyard manure per acre have been annually applied for more than thirty years.

"What is the true chemical nature of the nitrogenous organic matter forming the so-called humus of soils we do not know, nor even if it consists mainly of one substance, or of a variety of more and less nitrogenous bodies. The relation of nitrogen to carbon observed in the clay subsoils, and in the organic matter held in solution by the drainage waters from the experimental fields at Rothamsted, seems, however, to point to the formation of some highly nitrogenous organic matter capable of diffusion into the subsoil.

"We may now pass to a further stage of the subject, and consider the agents by which the oxidation of organic matter in soil is effected. Our knowledge on this branch of the subject has certainly made great strides in recent years. At the time when Liebig's writings directed so much attention to the subject of agriculture it was assumed that the oxidation of organic matter took place by mere contact with the oxygen of the air. The active oxidation taking place in soil was referred to the fact that soil is a porous substance; it was assumed that the oxygen of the air became condensed within these pores, and was hence capable of exerting an increased power. We now know that the oxidation of organic matter generally requires something more than the presence of oxygen. Oxidation in nature is, in fact, nearly always performed by living agents, either by colourless plant cells, or by means of animal organisms. Our view of the nature of fertile soil has also enlarged, and instead of regarding it simply as a porous mass of clay, sand, and humus, we now look on it as a medium full of life. The soil beneath our feet is in fact not dead, but thickly peopled with a variety of organisms, with the particular functions of which we are only gradually becoming acquainted. As to whether any oxidation takes place in soil without the intervention of life we can hardly perhaps state quite definitely at present, but it seems probable that this is the case. We cannot at present deny that some of the car-



bonaceous ingredients of soil may be capable of some measure of simple oxidation; but it is apparently through the action of living agents that the oxidation of organic matter is chiefly brought about."

(To be continued.)

## EUCALYPTS AND OTHER EXOTICS AS OPEN-AIR PLANTS

THE island of Arran is now widely known to English as well as Scottish health-seekers as the sanitarium of the Clyde; but arboriculturists have also noted with great interest the successful experiments of the Rev. David Landsborough of Kilmarnock, in rearing there, in the open air, tree denizens of sunnier climes. The peculiar climatal conditions of the east coast of the isle make the severity of our winters as little felt as in any part of Britain. And consequently, at sites such as Brodick and Corrie, Eucalypts, Acacias, and Tree Ferns attain heights in the open similar to those gained in their native habitats. Mr. Landsborough reported at the November meeting of the Botanical Society of Edinburgh that a Blue Gum (*Eucalyptus globulus*) was now about 30 feet high, with a girth 1 foot 7½ inches thick; and a White Gum (*Eucalyptus coriacea*), the seed of which was planted in the spring of 1879, is now 14 feet 6½ inches in height, with a girth of 4½ inches. Both grow in the open at Lamash. The mountain White Gum (*Eucalyptus Gunnii*) has at the same locality grown 3 feet 10 inches in height; and the Alpine Gum (*Eucalyptus alpina*) has at Corrie attained a height of 3 feet.

As is well known to our readers, similar experiments have been made at Colintrave and other places of the neighbouring mainland of the Firth of Clyde, which promised fairly had the sylvan strangers not been blasted by the hard recurrent frosts so characteristic of our fickle climate. Notwithstanding such past defeats, Eucalypt-growing is again being attempted at the Rev. Dr. Story's, Roseneath; Mr. Scoular's, Tighnabruach; and at Balinakill, Kintyre. If, as some think, we have gone into a cycle of warm seasons, the young plants may flourish till killed by some hard intervening frosts. The records of the past forbid us to hope that either the Blue or the Almond-leaved Gums shall ever in this country attain their normal heights of 330 feet or 430 feet respectively. Be this as it may, Mr. Landsborough states that in Arran during the severe winter of 1879-80, not a leaf of the White Gum was even browned; while branches from the Arran trees could bear favourable comparison with those exhibited at the Edinburgh Forestry Exhibition from Antibes, in the south-west coast of France.

Such strangers as the Cordyline indivisa, 12 feet 10 inches high, and Cordyline australis, 9 feet 7 inches high, are not in Arran even browned by frost. Neither are the Dicksonias, which flourish here. So do the Acacias, though one or two have succumbed. Camellias and Myrtles bloom abundantly.—(Forestry.)



## KITCHEN GARDEN.

MANY of the quarters are now becoming empty. Most of the autumn Cauliflowers have been cut, the stem leaves are being cleared off, and the soil dug roughly. Our soil is rather old, worms being abundant; and as we find these trouble the Potatoes, Turnips, Carrots, Onions, and, indeed, everything, we are giving the soil a slight dressing of gas lime previous to digging. This will effect a general clearance, and may be practised everywhere, as gas lime can be had cheaply wherever there are gas-works, and if used in moderation it is very beneficial.

*Veitch's Self-protecting Broccoli*.—This is now turning in well, and is an excellent successor to Veitch's Autumn Giant Cauliflower. Frost is now very liable to destroy the heads, and they must be examined very frequently. When they are too small to cut draw the leaves together and tie them over the heads. So long as they are not spoiled by wet this will preserve them from frost.

*Brussels Sprouts*.—The buttons at the lower part of the stems are much larger than those at the top, and in gathering them the small ones should not be taken, as if left they will swell and be more useful in early spring. Where many of the leaves are decaying and hanging over the sprouts they may cause them to decay, and as dead leaves do no good they should be taken away. Where many of the sprouts have been gathered and little remains but a bare stem and the top, some may think they can be of no further use, and throw them away, but the tops are very hardy, and if left until spring they are as useful as young Cabbages. Should severe weather come they will bear it better than most vegetables. We regard the tops in spring as a good second crop.

*Parasnips*.—Where these are now decaying on the crowns it will be best to lift and store them in a cool shed amongst fine ashes or sand. There they will not decay, and their qualities will be retained for several months.

*Jerusalem Artichokes*.—These are always useful, and should have a corner in every garden. The stems have died, and are of no further use. They should be cut level with the soil and burned. The roots may then be lifted like Potatoes, removing all the largest for use, and store a quantity of the middle size ones for replanting. They are very prolific, disease-proof, and a few scores of seed tubers will keep up a large supply. Those being kept for use may be stored with the Parasnips. Globe Artichokes have been unusually fine this autumn. Last week we cut a number of summer-like heads, but we do not like the plants to be so large and green

at this season, and if severe weather comes they will require substantial protection.

*Rhubarb Forcing*.—This may now be general where plenty of well-developed roots and crowns exist. A simple way of bringing it on is to turn empty casks upside down over the crowns, and then cover the casks with warm manure. It requires a good heap to cause growth, and the best way is to force a number of roots close together, when a large hot-bed may be thrown over them, and this will not only warm the air in the interior of the casks, but it will penetrate the ground and throw a heat into the roots to hasten the top growth. When the roots are lifted for forcing it spoils them very much for the following season, and many become useless, but this manner of forcing does them very little harm, especially if the tender crowns are not exposed too suddenly in early spring. Seakale: This may be treated in the same way, and there are special forcing pots for both which are excellent for the purpose; but where these cannot be had in sufficient quantity old boxes and casks may be resorted to.

*Hotbed Material*.—Hotbeds will soon be in general demand, and now is the time to see to securing the material for their formation. Littery manure from the stable and fallen leaves from the trees are the best of all materials for hotbeds, and quantities of both should be collected in heaps near the frame grounds. Where these are scarce the old vegetable leaves from the kitchen garden may be added to them to increase the heap. The whole should be thrown together and thoroughly mixed several times at intervals of a few days before attempting to make any beds or to fill deep frames.

*Early Carrots*.—Carrots of the French Horn type are amongst the most delicious of all vegetables. They can be forced freely, and a frame or two of them should be grown in every garden. The earliest may be sown now. Where there is a frame from 3 feet to 4 feet deep fill from 2 feet to 3 feet of its depth with hotbed manure. Make this very firm, and then cover it with 6 inches or 8 inches of sandy soil. Make this firm too, and then sow the seed broadcast thinly. A slight covering of pure river sand should then be placed over the seed and put the lights on. In a fortnight the young plants will be showing, and in cold nights they should be protected by covering the glass. A little air may be admitted on fine days, but little or no water will be required for some considerable time. We like deep frames for early sowing, as the whole of the manure is kept under cover, and retains the heat much longer than an exposed hot-bed; but where there are no deep frames a hotbed should be made up in the usual way, and put the frame and sow the Carrots on the top.

*Peas*.—Those sown a few weeks ago are now through the soil, and care must be taken that they are not destroyed by vermin. Mice must be trapped; snails kept off by slight dustings of lime; and pheasants, which are our greatest trouble, must be kept away at all cost, as they will clear a row of Peas quickly. Wire-guards are effective, and quantities of old Pea stakes laid down over the rows are useful. Another way is to stake the rows at once, and put the sticks in so closely that the pheasants cannot get through them.

*Seed Potatoes*.—Give the early ones which have been in heaps more room and light to insure the shoots being robust. Those for immediate planting in hotbeds should be spread out in a house or pit where they will have a little heat and plenty of light to start the growths. We like to plant our January Potatoes with the stems about 3 inches in length, and dark green in colour.

## FRUIT FORCING.

*CHERRY HOUSE*.—The house having been cleaned and put in thorough order, it ought now to be closed if it were not done early in the month, and during the present month the temperature should be maintained at 40° by fire heat at night, and not more than 45° by artificial means at that time; and in the daytime 50° by artificial means, or when the weather is mild at 55°. If the temperature rises above 55° a little ventilation should be given, and continued until it recedes to it again, when the house should be closed. With sun heat the temperature may rise to 65°, above which ventilate fully, adjusting the range of temperature by increasing or diminishing the supply of air according to the weather. Syringing scarcely will need to be done more than once every day unless sunshine prevails, when an extra application may be necessary, and instead of keeping the trees constantly dripping with moisture damping available surfaces occasionally will afford the necessary moisture in dull weather. It is imperative that sufficient moisture exist in the borders, and it must be given without delay, or after growth takes place fresh roots will speedily be made. If the trees are cultivated in pots the watering should not be neglected, but they should be seen to and the supply accorded according to the requirements. Although trees in pots under careful treatment produce excellent crops, preference is given to the system of planting out, because the trees are less liable to suffer from inattention in watering and are altogether less trouble.

*VINES*.—*Late Houses*.—Late Grapes should be examined twice a week for decayed berries, the house being kept dry and cool as may be consistent with the safety and preservation of the fruit. When thoroughly ripe and the Vines are clear of foliage a mean of 50° is a very good temperature for late Grapes until the time arrives for cutting, as anything much below this is liable to foster fungus and decay, and fire heat to maintain a night temperature exceeding it will most likely cause the berries to shrivel after the fall of the leaves. No further delay must be made in getting the Grape room ready for the reception of the Grapes, as the latest ought to be cleared off the Vines by the first week in January, and a week's steady firing with ventilation is necessary in many places to draw out damp and dispel it from the room. Bottling and managing Grapes is now so well understood, and the certainty with which they may be kept for



four or five months in better condition and at less cost has inspired confidence in a system which gives relief and rest to the Vines, whilst it sets a house at liberty for other purposes and relieves the attendant of much anxiety. Of late Grapes Gros Colman is one of the most remarkable to grow and keep. It requires a long season of growth, colours after the foliage is ripe, and has soft fleshy stalks which are liable to decay, hence it keeps best in the driest and warmest part of the Grape room, and is one that improves with keeping, parting with the earthy flavour that some detect in it. To do it well its roots should be inside and be started not later than February, and it will then ripen by September. Similar remarks apply to Gros Guillaume, which also requires a long season of growth.

*Young Vines in Pots.*—Those intended to be grown into fruiting canes may be cut back to an eye from the base, dressed with styptic and placed in a cool house ready for starting in January. Single eyes should also be placed in small pots singly or in turves, and kept cool for two or three weeks before they are placed in bottom heat.

*Making Borders.*—Where young Vines have to be planted in spring, advantage should be taken of fine weather to have this compost mixed and the borders made ready for their reception. The top 3 or 4 inches of a pasture taken off with its turf, where the soil is a light loam, and if of a calcareous nature all the better. This is chopped up roughly, adding a tenth of old mortar rubbish or chalk broken up similar to road metal, a twentieth of charcoal, and a fortieth each of charred refuse and half-inch bones, the whole thoroughly incorporated. If the loam be of a heavy nature increase the quantity of old mortar rubbish to a sixth, the charcoal to a tenth, charred refuse to a twentieth, and the bones to a thirtieth. Good clear drainage is the first essential. If the situation be low keep the border well above the surrounding level. Have drains of 3-inch pipes not more distant than 12 feet, and if the bottom of the border or excavation be wet and soft, concrete it with lime concrete 6 inches thick, and let this have proper incline to the drains, which should be laid in hollows prepared in and above the concrete on purpose, the concrete being placed so that it falls to the drains. The drains should have proper fall and outlet. A foot of drainage is necessary, placing the roughest at bottom and finest at top, securing with a thin layer of turves grass side downwards. In high and dry gardens outside borders may be 3 feet deep at the front of the house, and 6 feet wide to begin with, but the inside borders should be made first, and the openings to admit of the roots passing to the outside walled up, so as to confine the roots in the first instance to the inside border, and 6 feet width is sufficient for it in the first instance. If the roots are not confined to the inside and kept there until the full extent of the border is occupied with roots, the Vines will push roots more freely into the outside border in the first instance, presuming them to have the run of both, and it is difficult to induce them to root inside afterwards. In low damp situations afford 6 inches more in depth of drainage, and 2½ feet depth of good compost will be sufficient.

In constructing vineries the front wall should be kept well up, or rather the house should, so that the border will be high and dry, and from the front of the house to the front of the border should be a good fall of about 1 foot in 6 feet, so as to allow of the wet being thrown off when covered with lights or shutters. A little extra first expense in making the walls higher would have the result of satisfactory crops, and be a great saving in the end, as a low border is irremediable, and is an evil that might be overcome by a little timely attention in first cost, and be the truest economy in the strictest sense of the term. The border should only be put together when the weather is dry, with no more treading than to make it even, making it higher than the contemplated level to allow for subsiding, which it should do if time will allow before planting, and must not be pressed down unless the compost is in good working condition.

#### PLANT HOUSES.

*Roses.*—Varieties of Hybrid Perpetuals in pots that are wanted in flower as early as possible in the season may be pruned without further delay. These should be kept perfectly cool for a week or ten days afterwards, and then may be introduced into any light airy structure where the night temperature is kept from falling below 45°. A good place for them until they have fairly commenced growth is a vinery or Peach house just closed for starting. Under these conditions the plants will soon start into growth if syringed once or twice daily when the Vines or Peach trees are done. If previous directions have been attended to the soil will be full of white active roots, and in order to retain them in this condition the soil must not be allowed to become dry or they will be seriously injured. The soil about their roots should be kept as nearly as possible in an intermediate state of moisture. Later batches intended for flowering in succession during the spring may now be pruned and housed in any cool airy structure to be ready for starting at any time. These must not suffer by an insufficient supply of water at their roots; in fact, in no stage should the soil be allowed to become dust dry. Those intended for late flowering and just to precede those growing outside in the borders should be left outside, plunged, as long as possible until severe weather compels their removal to cold frames. These plants when protected must have as much air as possible, and should not be pruned before the end of February.

*Prunuses.*—The double forms, such as *P. sinensis flore pleno*, are very useful for decoration early in the season, and can be readily brought into flower by the aid of a little warmth. Those plants that made their growth early under the influence of light, air, and heat, and were then placed outside to thoroughly ripen, are in a very forward condition this year. Plants still outside are now showing their flower buds, and would come

forward rapidly in a close moist atmosphere ranging from 45° to 50° at night. All the plants intended for forcing should have the protection of glass where frost can be excluded from them, for it is not safe to leave them outside any longer. Plants rooted last spring that have not attained a size sufficiently large for forcing and are still outside should be pruned, transferred into 5-inch pots if they need it, and plunged in cold frames for the winter. These if allowed to start into growth naturally will make valuable plants for decoration another year with from four to six shoots varying in length from 14 inches to 2 feet. A suitable compost for these plants is good loam, one-seventh of manure, and a little coarse sand. If the soil is in a suitable condition for moisture when potting, and the pots are plunged covering their rims, no water will be needed before the spring.

*Helleborus niger.*—Good strong clumps studded with flower-buds may now be lifted with roots, and either potted or placed in boxes, and introduced into gentle heat to bring them into flower. The flowers of these plants are very useful for cutting to fill small vases, and as they flower most profusely during the dark sunless days of winter they well repay any little trouble that may be required in their cultivation. The clumps are best placed in boxes and the space between them filled with soil; and if they are not forced into flower in strong heat, and cared for afterwards by protection in a cool house until they are thoroughly hardened and can be placed outside, they will prove serviceable for another year. If forced in strong heat they are useless, and, after flowering, should be conveyed to the rubbish heap. Clumps outside may be protected with handlights or an old frame, for the purpose of forming a succession to those lifted. It is important the plants are protected by glass or other means when their delicate flowers are wanted spotlessly white. Heavy rains destroy the purity of the flowers, in addition to splashing them with soil.

## THE BEE-KEEPER.

### PRACTICAL BEE-KEEPING FOR BEGINNERS.

FROM many inquiries by beginners in apiculture I find that a few hints in the rudiments of bee-keeping would not only be desirable, but are absolutely necessary to enable them to make a fair start. I will therefore endeavour to assist them, and lay before them a few points which should aid them to attain the object of their pursuit.

When a swarm of bees is allowed to take its own course in the building of combs in an unrestricted space larger than their needs require, the form taken is always approaching that of a cone, and always deeper than it is wide at its inverted base, thus fully establishing and confirming the fact that oblong hives are a mistake. Then there is another very important thing that bees dislike—a vacant space, especially overhead, and they will fill space above rather than extend their combs either downwards or laterally, especially in cases where there are bees sufficient in numbers to be able to extend combs in any direction. Where there is a paucity of bees their powers of extension are very limited. During the "Battle of the Hives" in these pages long since, "A Renfrewshire Bee-keeper" fully demonstrated that the form of a hive materially affected the bees, and decided its prosperity or otherwise, but as I have stated, that perfection in a hive is impossible. Under these circumstances we have to adopt a medium course, selecting and retaining those things which suit the nature and instincts of the bees, and which offer to the bee-keeper the greatest advantages in manipulation, and securing with least expense the maximum quantity and finest quality of honey.

These advantages are to be found in the Stewarton hive. This, however, with the majority of swarms is even a little too wide, but were it made less it would have to be made deeper; a fault, though, not against the bees, because it is as natural for bees to ascend as it is for water to find its level by gravitation. The hive would then, however, be more difficult to manage, so the medium course is in this case found advantageous, while outside cases are in every respect superior to the often unwieldy double-cased one, the merits or its demerits of which I need not enter upon at present, the object of this article being to explain apiculture in a rational and profitable sense. The bee-keeper should bear in mind that 14 inches in diameter is the maximum width these hives should be inside. They will find in them, too, great advantages in the horizontal section not required for wintering, but containing honey easily fed back by simply placing them beneath any stocks strong enough to take it up, after which these combs being hermetically sealed and stored in a dry place are of great benefit to swarms the next season.

When we see a tradesman executing some work in a better way and with fewer tools than his neighbour, we at once conclude that he is a superior workman, and the same thing applies to bee-keepers. A good example is seen in supering. While one can keep his supers free from brood and discoloration without



using any appliances but what the hive affords, his neighbour will have both. Perhaps he uses queen-excluder zinc, which is not always successful, in keeping the queen down, and only a hindrance to the bees at the best, in obstructing the passage and causing a very great amount of propolis while the discoloration of the combs goes on. Both of these difficulties can be overcome by simply providing sufficient breeding space, and using slides on the top of the hive. I think these remarks should be sufficient to enable anyone to understand what a hive should be like, provided they have not forgotten the essential ventilating floor.

A thorough knowledge of supers and the art of supering seems to be in more request than the hive itself. I will therefore describe in detail a few things necessary to success with these. The first thing is to have the bees forward in time (whether these be swarms, or stock hives as non-swarmlers) to take the advantage of the first honey glut. It must be understood that no hive is in a fit state for supering unless the body of the stock hive is of sufficient size to allow the queen full scope for her egg-laying powers, with that additional space necessary for pollen, water, and honey stores essential to insure the continuation of breeding and prosperity should the weather be unfavourable. When the hive is in this satisfactory condition it is fit to be supered the moment honey becomes plentiful. This important time may be learned by a careful study of the various meteorological instruments and of the bees themselves. It is only during the very finest weather that bees store surplus honey, beginning very often after a very low temperature, and ending with wind or rain, the former being more detrimental in bringing the honey season to a close than the latter. The honey season is often short and uncertain, and the bee keeper must know my reasons for recommending the form of hive most suitable to have the bees early and in readiness at all times. During a few months in summer it makes little difference what hive bees are in, but it is of material importance which they shall be in throughout the whole season, giving the bees every assistance towards economy.

When hives are ready for supering it should be performed immediately, but not before, as extra space unoccupied by the bees retard them much. The shallower supers are, the more readily are they taken possession of by the bees. Mr. S. Bevan Fox long since demonstrated and explained this system with his large yet beautiful supers wrought upon the telescopic principle, but is tended with trouble. The Stewarton supers may be taken as the type of good supers, 4 inches being the maximum depth, and 3 the minimum depth. All supers or sections above that are too deep and objectionable in most cases to bees ascending when first put on, although with strong hives it is often absolutely necessary to give two supers as advised at first by "A Renfrewshire Bee-keeper," and now adopted by many. This system of giving two supers at a time, and that of adding a second super after the first is tolerably well combed, increase the yield in proportion as three stand in relation to two. In regard to bees finishing supers, no bees will finish supers satisfactorily outside the natural cluster; therefore in brood hives supers should not extend the whole width, and these as well as narrow hives should be thoroughly wrapped up considerably below the super line. The better covered supers and hives are, the quicker they are filled, and the purer the comb in the super. Bees dislike glass, so that the less of it both in supers and hives the better. The Stewarton super is always last to be finished at the small pane. This is a good index to learn when it is full yet offering little obstruction to the bees.

Although it is the best and safest time to manipulate bees between the hours of one and three in the afternoon, yet during a glut, or when the bees are gathering honey, upon no pretext whatever should they be interfered with; all manipulations during that time should be done after the bees have ceased working. If two hives are of equal strength, one being manipulated during working hours, the other not, the latter will be found when weighed heavier by several pounds than its disturbed neighbour. Bees do not seal up their honey so quickly as to warrant a daily inspection.

Having already expressed my experience on supers, I may add, however, that a large super of one compartment is filled quicker in proportion than those in divisions though less in size. I have mostly wrought sections, as in one compartment, but the appliances are more expensive. The super described at page 472 is a great favourite amongst bee-keepers, and as it can be either a 1 lb. section or full-sized super or supers, divisible to any weight of comb desired, easily protected from dust, yet fully exposed to the view, when glazed and in the cheapest form to be sent by rail or otherwise. A full-sized super of this sort is made by having the top bar of the desired length, and the thickness in proportion to the weight of section required. The

ends are 2 inches, while the inner divisions are  $1\frac{3}{4}$  inch only, the same breadth as the top bar, thus securing to the bees a single compartment in many divisions, capable of being storified to any height. When full of comb and emptied of bees by carbolised paper they are ready to be lashed together and sent to the merchant to be manipulated by him as his fancy directs.—LANARKSHIRE BEE-KEEPER.

P.S.—It is a good plan when bees are working in supers and a swarm issues, not to return it, as in nine cases out of ten they will swarm again in a few days, or perhaps next day, while honey-gathering in a great measure ceases. It is far better to keep it off and join it to a weaker one, or to the next swarm that comes, when a redistribution of supers from the old stocks to the new ones may be set about. Never attempt to interfere with the body of a hive when supers are on it.—L. B.

#### TRADE CATALOGUES RECEIVED.

James Carter & Co., 237 and 238, High Holborn.—*Vade Mecum for 1885 (illustrated).*

Robert Owen, Boyne Hill, Maidenhead.—*List of New and Select Chrysanthemums.*

George Swailes, Beverley, Yorks.—*Price List of New Hybrid Perpetual Rose Mrs. Caroline Smiles.*

Frederick Roemer, Quedlinburg, Germany.—*Catalogue of Flower and Vegetable Seeds.*



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

Addresses (A. C.).—We think you can obtain the information you require by writing to Messrs. Negretti & Zambra, Holborn Viaduct, London; or to Le Jeune & Perkins, Hatton Garden, London.

Books on Estate Measurement (W. L. C.).—For timber, "Hoppus' Measure," Frederick Warne & Co., Bedford Street, Strand, London. For land, "Mensuration, and Measuring," (illustrated), Crosby Lockwood and Co., 7, Stationers' Hall Court, Ludgate Hill, London. You can obtain books on all the other subjects you mention at reasonable prices from this firm.

Book (Cambridge).—The only work we know devoted to the subject you name is "Floral Decorations for Dwelling Houses," by Annie Hassard, published by Macmillan & Co., London. We give an extract from this book on another page, which will indicate its character to you.

Employment at Kew (A Subscriber).—To obtain admission into the Royal Gardens, Kew, testimonials extending over at least three years' service in other gardens are required, together with a general recommendation as regards character. The first course is to make an application to the Curator, Mr. J. Smith, stating that you desire to enter the Gardens. A form will then be sent to be filled up and returned, when if this is satisfactory your name will be placed on the books for admission at the first convenient vacancy. The duties are the ordinary routine of plant-culture in the various departments, attending lectures and reading room.

Primulas (W. E. L.).—The flowers sent are very good indeed, but the varieties are incorrectly numbered. Whether the mistake has occurred in arranging the flowers in the box or of labelling the plants we have, of course, no means of knowing. If you are satisfied the error was with the seedsman you had better send blooms to him and he will investigate the matter.

Wireworm and Grubs in a Garden (Irish Subscriber).—If wood is plentiful in your district, and can be had at little beyond the cost of cutting, the best thing to do would be to make some fires, and when strong enough dig soil from around them and place on to be scorched. This would not only extirpate the grubs but would be of greater benefit to the soil than a heavy dressing of manure. Failing your ability to act as suggested we should use gaslime, fresh and strong, at the rate of half a ton to the acre, carefully digging it in and mixing it with the soil, not merely burying it in layers in the trenches formed in digging. This may be done now, and the sooner the better with land that is quite vacant, but not half that quantity must be applied to land that is cropped or within three months of sowing or planting. Either in addition to that dressing or independently of it, ordinary freshly slaked lime may be pointed into the soil in spring, shortly



efore sowing or planting, at the rate of 50 bushels per acre, and twice that quantity would do no harm if the land is strong or very rich.

**Liquid Manure (Reader).**—The value of stable drainage depends entirely on its strength, there being the same difference in this respect as between the smallest of small beer and the strongest of strong stout. You cannot purchase it profitably at all from a distance involving any material cost in carriage. It will be cheaper for you to dissolve some good guano in a tub at the rate of 1 lb. to 10 gallons of water. This will be strong enough for any outdoor crops, and too strong by half for the majority of plants in pots. Read Mr. Abbey's article, on page 401 (October 30th), and note what he says on preparing other kinds of liquid manure. The instructions given there are sound and reliable.

**Scale on Fruit Trees (Inquirer).**—Your trees are infested with oyster scale (*Aspidiotus ostreaformis*), and they cannot flourish until it is destroyed. Dissolve 4 ozs. of Gishurst compound or nicotine soap in a gallon of hot water, stirring well into it while hot a wineglassful of petroleum, and apply carefully with a brush, rubbing well into all the crevices. If the mixture is hotter than your hand can be borne in it when applied, it will be more effectual. Trees that are in such a state as yours appear to be must have had their growth much checked, and this would act prejudicially on the roots. We should therefore remove some of the strong soil from them and add fresh, with much gritty matter, such as wood ashes, mixed with it, and mulch with partially decayed manure. It is a pity you did not act sooner, as we fear you will now have some difficulty in re-invigorating the trees.

**Skeletonising Leaves (Old Subscriber).**—Nearly all leaves may be skeletonised, but some require a longer time than others to become macerated. For instance, the seed vessels of the Winter Cherry, Henbane, and Poppy require a fortnight or three weeks if the weather be hot. Leaves of *Ficus elastica* (Indiarubber Plant) and *Magnolia grandiflora* require several months; leaves of the Tulip Tree, Poplar, and Maple a fortnight; leaves of the Holly and Ivy two or three weeks. Ferns require a long time, and so do the leaves of Beggars' Broom, Butchers' Broom, the Orange, Lemon, and Camellia. Great care must be taken in choosing the leaves, as the smallest speck spoils one. Many more should be placed in the water than are needed, as not more than one in twenty will be perfect. The time required depends on the weather. Beginners examine them too soon. The leaves should be put into soft water in a sunny situation, taking care that they are covered with water. Evergreen leaves may be skeletonised at any time, but deciduous leaves not before the end of June or beginning of July. Seed vessels must be operated upon when nearly ripe. When quite ready for skeletonising put the leaves into boiling water to remove the offensive smell. Remove the scum from the water. Brush off the pulp with a rather hard brush. If the leaves are tender bump them gently, which removes the pulp without disturbing the nerves of the leaves. Pour clean water over them until quite clean; put them on blotting paper to dry—a piece of glass is useful to brush them on. Tender leaves should be floated in water and caught on a card, as are fine Seaweeds. Bleach with chloride of lime and then wash them thoroughly with clean water, otherwise they become yellow. It is better not to bleach them until required for setting up. Thistles and Teazels look well when bleached and aid much in arranging a group.

**Moss on Fruit Trees (T. S.).**—We have quite cleared moss from fruit trees by limewashing the trunks and main branches, and dusting freshly slaked lime liberally amongst the smaller branches and spurs when quite wet after a foggy or drizzling day. If there is no wind a man with the aid of a ladder may dress a good-sized tree in ten minutes, so that every side of every twig is reached, and the lime falling to the ground can be pointed in if needed, and will be beneficial to the roots. The lime should be obtained in lumps, then slaked into powder and used immediately. Having found this quite effectual we have not tried petroleum for the same purpose. If you consider lime unsightly, not only the Mosses and Lichens which so generally affect fruit trees, but the eggs of insects, may be effectually destroyed by dressing the trees in winter with a wash composed of a saturated solution of soft soap and common salt or brine. The trunks and large branches ought to be first scraped with a scraper made of old hoop or any other implement that may be improvised for the purpose, and when all the scales of bark are removed apply the mixture with a painter's brush, working it well into the crevices.

**Forcing Seakale (J. E. B.).**—Seakale may be forced in any place where it can be kept moist and dark in a temperature from about 50° to 70°. The milder the heat is the slower is the growth, and also the stronger; but the crowns must be in total darkness or the produce will be green, while if the roots and air be dry it will be tough. You may pack the roots closely together in pots, plunge these in a bed of manure and leaves, inverting other pots over the crowns; or you may pack a number of roots in a mixed fermenting bed and box the whole in with boards a foot or 18 inches above the crowns. In a quite dark place nothing of the kind for excluding light will be required; all that is needed in such a case is a humid atmosphere, gentle warmth, and regular moisture at the roots. Roots established in the ground, covered with pots, these covered to the depth of a foot or so with manure or leaves, will afford excellent Seakale. The thickness of the covering must be regulated by the heat. A stick forced into the mass to remain there, drawn out occasionally and grasped in the hands, will sufficiently indicate the temperature. If neither hot nor cold, but comfortably warm, it will be right for the growth of the crop. A certain number of crowns should be placed in heat or covered about every ten days to maintain a regular supply.

**Lilium auratum (J. N. G. B.).**—We are glad to hear you have been so fortunate with the imported bulbs of *Lilium auratum*. You have been fortunate in securing fresh, sound, and good examples. All are not alike in this respect. We know a gentleman who purchased 5000 bulbs, given numbers of them being subjected to different methods of treatment for experimental purposes. Not more than 500 of them grew and flowered; those that succeeded best were simply placed on a mass of cocoa-nut fibre refuse, the bulbs not being covered for a week or two until signs of roots were apparent, then the bulbs were potted and planted. The various methods of culture that have been advised in this Journal are all equally good; some apply to bulbs planted out, some to bulbs established in pots,

others to imported bulbs, and we have not a doubt that the writers of these articles grew their plants at least as well as you grew yours. It is a very easy matter for a young grower to criticise others of greater experience and to assume a knowledge that they do not possess. If you had read carefully you would have understood the whole subject better, and would have found also that the details of culture cannot be given in three lines, which is all the space you devote to the subject in the letter you have forwarded. Precisely the same method has been advised, but much more fully and clearly, in this and possibly "other gardening papers," and the instructions we trust did not prove "embarrassing" to all.

**Planting Vines (H. C.).**—The Vines should be obtained in pots now, shortened to the extent desired, and kept in a cool place through the winter, not allowing the soil to get dry, yet not keeping the roots very wet. The best time for planting is in spring, just when the buds start into growth, but if the canes are not shortened till then bleeding is apt to occur. The more they are shortened the better will the growth be, and provided they are long enough for the canes to reach well inside the house, if the roots are in an outside border, that will suffice and be better than leaving them several feet in length. If they are planted inside the house they may just reach the base of the rafters, provided the front of the house is not more than 4 feet high. Vines for planting that are not pruned now should not be shortened in the spring, but have instead all the buds rubbed off down to the one that is desired to extend and form the future cane. By allowing a number of buds to extend the resources of the Vines are divided into so many outlets, and the strength of the leading growth is proportionately reduced. It is of little use planting a young Vine in an old border without making a station of new soil for it. The old soil should be quite removed down to the bottom of the border, or say 2 feet deep, and about 4 feet square. It will do no harm to the old Vine by cutting any of its roots that may be in the space excavated, but probably good, as new roots will start from those cut if the ends are pared quite smooth, and take possession of the fresh soil. The branches of the old Vines intended to be removed should be removed now, paring the cuts smoothly and dressing them with painters' knotting, and there will be no escape of sap in the spring. The Madresfield Court Grape ripens well under Black Hamburg treatment, and is one of the finest and best flavoured varieties for autumn use. Unfortunately the berries sometimes crack, but not always, and we should certainly try it. The most useful white Grape for growing in a house such as yours is Foster's Seedling. It is a free grower and bearer of good bunches, but the berries are rather small, and their flavour not superior. Good turfy loam with an admixture of wood ashes and a sprinkling of crushed bones will be suitable for planting in, placing manure on the surface over the roots and for a good distance beyond their extremities.

**Names of Fruit (A Surrey Youngster).**—1, Dumelow's Seedling; 2, Cox's Pomona; 3, not known; 4, Golden Noble; 5, Beauty of Kent. (T. Stephens).—Tower of Glamis. (O. D.).—The Apple much bruised in transit and not known.

**Names of Plants (W. J. Croydon).**—The plant is *Echinops ruthenicus*, a member of the family Compositæ and a native of Russia. (F. K.).—*Stokesia cyanea*, a hardy herbaceous plant, readily cultivated in warm borders, and increased by division in the spring. (J. Chambers).—1, *Begonia insignis*; 2, *B. fuchsoides*; 3, *B. Ingrami*; 4, *Peristrophe speciosa*. (O. D.).—1, *Crataegus pyracantha*; 2, *Arbutus Unedo*.

#### COVENT GARDEN MARKET.—DECEMBER 17TH.

BUSINESS very quiet, with little alteration in prices. Grapes improving in value.

##### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. .. .	½ sieve	2 6 to 3 6	Oranges .. .. .	100	4 0 to 6 0
Chestnuts .. .. .	bushel	16 0 0	Peaches .. .. .	per doz.	0 0 0
Cobs, Kent .. ..	per 100 lbs.	60 0 0	Pears, kitchen ..	dozen	1 0 3 0
Currants, Red ..	½ sieve	0 0 0	„ dessert .. ..	dozen	2 0 6 0
„ Black .. .. .	½ sieve	0 0 0	Pine Apples English ..	lb.	1 6 2 0
Figs .. .. .	dozen	0 0 0	Plums .. .. .	½ sieve	0 0 0 0
Grapes .. .. .	lb.	1 6 4 0	Strawberries .. ..	lb.	0 0 0 0
Lemons .. .. .	case	10 0 15 0	St. Michael Pines ..	each	3 0 5 0

##### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes .. ..	dozen	2 0 to 4 0	Mushrooms .. ..	punnet	0 0 to 1 6
Beans, Kidney ..	lb.	0 3 0 0	Mustard and Cress ..	punnet	0 2 0 0
Beet, Red .. ..	dozen	1 0 2 0	Onions .. .. .	bunch	0 3 0 4
Broccoli .. ..	bundle	0 9 1 0	Parsley .. .. .	dozen bunches	2 0 3 0
Brussels Sprouts ..	½ sieve	2 6 3 0	Parsnips .. .. .	dozen	1 0 2 0
Cabbage .. .. .	dozen	0 0 1 0	Potatoes .. .. .	cwt.	4 0 5 0
Capicums .. ..	100	1 6 2 0	„ Kidney .. ..	cwt.	4 0 5 0
Carrots .. .. .	bunch	0 3 0 4	Rhubarb .. .. .	bundle	0 4 0 0
Cauliflowers .. ..	dozen	2 0 3 0	Salsafy .. .. .	bundle	1 0 0 0
Celery .. .. .	bundle	1 6 2 0	Scorzoneria .. ..	bundle	1 6 0 6
Coleworts .. ..	dcz. bunches	2 0 4 0	Seakale .. .. .	per basket	2 0 2 6
Cucumbers .. ..	each	0 4 0 8	Shallots .. .. .	lb.	0 3 0 0
Endive .. .. .	dozen	1 0 2 0	Spinach .. .. .	bushel	2 0 4 0
Herbs .. .. .	bunch	0 2 0 0	Tomatoes .. .. .	lb.	0 6 1 0
Leeks .. .. .	bunch	0 3 0 4	Turnips .. .. .	bunch	0 4 0 6
Lettuce .. .. .	dozen	1 0 1 6			



#### PIG MANAGEMENT.

ADVISEDLY do we take the term "pig management" for the heading of this paper, for one fault among many long prevalent in the treat-



ment of pigs is the want of a system—a purpose and plan in the breeding, rearing, and general care of them. Slovenly practice, and careless easy-going work usually has its origin in undertakings of a plain and simple nature, and certainly pig-farming is beset with so little difficulty that upon the surface very little reason for much care is apparent. Yet there is undoubtedly a good and bad, a right and wrong way of doing it, and taken as it ought to be in connection with dairy farming, it quickly assumes a degree of importance that is worthy of our best attention.

Porkers of about 60 lbs., and bacon pigs of 250 to 300 lbs. dead weight, are required for household supply on the home farm. The small white Yorkshire breed are the best porkers, but for bacon a good local cross bred pig can be had by the exercise of due care in selection and breeding. We require a supply of porkers to be ready for killing as the weather becomes cold in October, and pigs twelve to fourteen weeks old answer our purpose to begin with. Taking this as a basis for calculations, we find that the sow must be put to the boar about the middle of March so as to farrow early in July. But it seldom answers to depend upon one sow, nor need we do so; far better is it to have a dozen or more sows to farrow in July and onwards, so as not only to insure a supply of porkers for home consumption, but an abundant surplus for sale. Porkers weighing from 50 to 70 lbs. that are known to have been carefully fed on sound wholesome food invariably command a ready sale at the highest market prices. But then a farmer has first of all to afford proof to the dealers, or better still to the consumers, that his pigs have had nothing but milk, corn, and vegetables. He has, in point of fact, to build up a reputation, then to sustain it by subsequent practice, and his chief difficulty afterwards will be to supply the demands made upon his stock of porkers throughout the cool period of the year. Repeatedly have we heard the remark, "We cannot eat pork unless we know how it has been fed;" nor can this feeling excite wonder when it is remembered how hunger impels pigs to consume any foul garbage given them. But the pork is then never really wholesome, and the man who calculates consequences will have nothing to do with such practices.

Close calculations beforehand of results in connection with live stock are unsafe. There always must be a fair margin allowed for possible contingencies. Looking over a batch of porkers sufficiently forward for breeding last March, and which the owner offered for sale, we were tempted by the promising appearance of a young sow to offer £3 for it if the farmer would put it to the boar at once. Ample reason had we for satisfaction at his acceptance of our offer, for that sow had ten nice pigs at the expiration of sixteen weeks, most of which were sold in the autumn at £2 apiece. Three sows of the same age as the one we purchased were kept by the farmer for breeding. One of them proved barren, and the others did not rear so many pigs between them as that which we so fortunately secured. Mention is made of this matter to show how much uncertainty there is about breeding, as well as the wisdom of having several more sows than are really required, both to insure a full supply of porkers and to enable one to select enough good sows yearly for our requirements. By a good sow is meant a healthy, gentle, good-tempered, kindly animal, fond of its progeny, and careful not to lay upon or hurt them. These are matters in which sows differ materially, and a sow that is savage with its young ones, that has weakness of the legs, or any other fault or blemish, should never be suffered to breed again.

The sow should have a large lodge for farrowing, with sufficient short litter for a comfortable bed, and no more; for it will collect all the litter it can get into a heap for a bed, and if the litter be long there is much risk of the pigs becoming entangled among it, and of their being laid upon and smothered. A spare diet of rather thin pollard and skim milk answers best for the sow for a week after farrowing, and afterwards the quantity may be increased; and if there is any tendency to scour among the young pigs mix an ounce of sulphur in the food, and the two following days give a quarter of an ounce of bicarbonate of potash, subsequently adding a handful of salt occasionally to the food, or let the pigs have some water. As they become able to eat they should have access by means of a slip board to an outer sty and be fed separately from the sow. Castration should be done when they are from four to six weeks old, according to their condition, which also is the best guide as to the age for weaning, which should be at any time from six to ten weeks.

After the weaning the pigs should have a sty with a slip board drawn up so that they can run out upon grass land at will, which tends to promote health, and with regular feeding on pollard and water or milk in the sty they thrive apace, our object then being not to fatten but to induce a quick, healthy, sturdy growth. If, however, upon an emergency it becomes necessary to force the pigs on quickly there is no difficulty in doing so by giving better food. In any case it is decidedly wrong to suffer pigs to sink into a state of semi-starvation for a time, and afterwards to feed them specially for killing. More food is then consumed in putting on flesh, to say

nothing of fat, than is required to keep them always in a healthy, sleek, but not fat condition.

(To be continued.)

WORK ON THE HOME FARM.

*Horse and Hand Labour.*—Now that the weather has become unsettled, and wet days are of frequent occurrence, home farmers having horse gear in a building for two, three, or four horses, according to the power required, are able to turn horses and men to profitable account for grinding Wheat for the household supply of flour, and Oats, Barley, Peas, and Beans for calves, pigs, and poultry. We thus have no idle days, however broken the weather may continue, and we embody true economy by combining this practice with the growth of all corn, except Maize, that is required for home consumption. Heavy payments for corn and fodder spoil the balance sheet, and are a sure indication of mismanagement. Nor should there be a great outlay upon oilcake, for home-made meal from home-grown corn, combined in a judicious mixture of pulped roots and chaffed fodder, is cattle food cheap, pure, wholesome, and so nourishing that we require none other, and are able to decline the offers of agents, merchants, dealers, or whatever other euphonious titles the host of middlemen may prefer being known by. Corn-crushing should also be done. The use of whole corn among cattle should not be allowed, for they can consume much more of it at once than they can digest, proof of which we have repeatedly had in the whole corn to be seen in the droppings of cattle subjected to such faulty treatment.

Any possible reduction of horse power upon the home farm must always receive our best attention. To this end, if there is a stream of water of sufficient volume to drive either an overshot wheel or a turbine, it ought certainly to be turned to account, and it should not be forgotten that by the storage of the water of a little brook in ponds we have a power in reserve for use at our convenience, and by means of which we may do all the grinding work of the farm, the estate work of sawing and pumping; and we can also generate electricity, and convey it by wires for lighting the mansion, the outbuildings, offices, carriage drives, and entrance lodges, and also indulge in all necessary lighting of farm buildings, for the cost after the first outlay would be merely nominal. This important matter of electric lighting is receiving the attention it merits upon several large estates, and mention is made of it here as coming within the province of the home farmer. The apparatus is very simple, and the knowledge required for its manipulation is soon acquired by an intelligent person. The cost of motive power for the generation of electricity is the only possible hindrance to its use. It is therefore apparent that a stream of water at once enables us to overcome that difficulty. We believe that the late Dr. Siemens used actually to turn the wires of his field fencing to account for the conveyance of an electric current to different parts of his estate.

OUR LETTER BOX.

*Lincolnshire Sheep (Inquirer).*—The average price of thoroughbred Lincoln rams may be stated at £15, and the ewes at about a third of that sum. Sheep of this breed undoubtedly have the advantage of others both in weight of fleece and carcase, but this is counterbalanced by the inferiority of both the wool and mutton to that of several other breeds. We consider Shropshires preferable to Lincolns for exportation to South Africa, both for superior hardiness and quality of mutton. In price they have ruled considerably above the average of the Lincolns at the sales of recent years, the Shropshire average being now £26. The quality of wool of colonial growth is now so high that we should question the wisdom of the exportation of Lincolns, except for cross-breeding purposes.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.


Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.					Rain
1884.  December.		Barometer at 32°s and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
			Dry.	Wet.			Max.	Min.	In sun.	On grass.		
Inches.	deg.										deg.	
Sunday	7	29.936	47.9	46.4	S.W.	43.9	55.5	45.4	62.9	40.2	0.204	
Monday	8	29.804	47.8	45.9	S.W.	45.2	55.7	47.4	54.2	44.9	0.071	
Tuesday	9	29.954	40.4	39.1	S.W.	44.5	48.4	39.8	46.3	36.5	0.114	
Wednesday	10	30.120	42.7	40.6	S.	42.8	49.1	34.8	50.0	29.7	0.214	
Thursday	11	29.652	47.2	44.9	S.	43.5	50.3	41.7	54.7	40.1	0.157	
Friday	12	30.133	42.0	40.4	W.	43.8	48.6	39.9	61.6	32.7	—	
Saturday	13	30.157	51.6	49.2	W.	44.2	55.0	41.2	57.0	37.6	—	
		29.965	45.7	43.8		44.0	51.8	41.5	55.2	37.4	0.760	

REMARKS.

7th.—Fair till afternoon, then wild and rainy.  
8th.—Dull and damp all day.  
9th.—Wet morning, dull rest of day.  
10th.—Fine early, shower at noon, fine afternoon, very wet evening.  
11th.—Fine morning, wet afternoon and evening  
12th.—Fine and bright early, fair till 4.30 P.M., heavy rain till 7 P.M., fair evening.  
13th.—Dull all day.  
A rainy and almost sunless week. Temperature about 5° above that of the preceding week, and more than 7° above the average.—G. J. SYMONS.





## COMING EVENTS

25	TH	CHRISTMAS DAY.
26	F	BANK HOLIDAY. Quekett Club, 8 P.M.
27	S	
28	SUN	1ST SUNDAY AFTER CHRISTMAS.
29	M	
30	TU	
31	W	

### FRUIT IN 1884.

**F**RUIT culture in this country is beset with so many difficulties that it is always important to note peculiarities of each summer, or rather I should say spring and summer, for spring weather is a factor of no mean importance in this work, exercising an influence for good or evil upon the crop which we, in a very considerable degree, have to accept and make the best of.

Something we may do to correct an influence that is so frequently baneful in its deadly effects, scattering to the winds hopes fully reasonable and anticipations justifiably bright, for does not the sight of thickly clustering blossom buds on firm well-ripened wood give birth to them? Well is it, therefore, to note the peculiarities and results of the year as one calculated to exercise an influence for good or evil upon our work in the future.

Brightly shone the sun of early spring upon the swelling buds till trees of all kinds were fast bursting into the full beauty of blossom, so abundant that for once a full crop of fruit seemed not unreasonably a foregone conclusion. How the fickle wind went round to the north-east, and its icy breath fell upon the blossoms of Plums, Cherries, and Pears just as the fruit was setting, is still fresh in the memory of my fellow sufferers, once more enforcing the necessity of thorough shelter for fruit trees. How thorough that shelter must be only those of us know who have had to undergo the bitter experience of the past spring, as well as that other trial which occasionally comes—a spring south-western gale, battering all blossoms and young foliage to pieces that are exposed to it. These are the two cross winds between which and the fruit trees we must interpose barriers as effective as possible, and in doing it we must not forget how searching high wind is; how it sweeps round corners and darts downwards over the highest wall and trees. To plant belts of fast-growing trees around orchards and fruit gardens is not new; but in addition to that we must have shelter lines intersecting the garden and dividing it into snug little squares, and for this purpose I know no better tree than *Thuia Lobbi*. Its dense growth forms an admirable wind screen, so that if healthy vigorous young trees are planted 2 feet apart the growth soon meets and intermingles, forming a compact hedge, which may be clipped as closely as may be wished; but I think it decidedly a mistake to clip the sides till the trees are a dozen or more feet in height, for an unchecked branch growth tends materially to render the trees robust, and also accelerates the stem growth. The distance apart of these hedges should be from 50 to 80 feet, according to the position of the garden, 50 feet affording space for four rows of trees 10 feet apart and 10 feet from the hedges, and 80 feet would admit seven rows.

If possible, divide the garden into parallelograms rather than squares for cordons or palmette verriers, and plant the rows from north to south, or from north-west to south-east, so as to lay the trees as open to the sun as possible, as well as to have them well sheltered. The height of the fruit

trees should decide that of the hedges, which ought certainly to be at least 6 feet higher than the fruit trees; and here we have another advantage in the pliant nature and free growth of this *Thuia*, for whether the trees to be sheltered are 6 feet or 16 feet high it will grow to and may easily be kept at the requisite height above them, and yet continue clothed to the ground with its dense evergreen branches.

Early Cherries were almost a total failure, but the blossoms of intermediate and late sorts did not suffer much, and the fruit was fairly abundant. I may mention Black Bigarreau as having fine large fruit of most delicious flavour; but the tree is not healthy. Bigarreau, as affording a valuable supply of ripe fruit for a longer period than any other intermediate sort; Büttner's Yellow for fine richly flavoured fruit and bright yellow colour, both qualities rendering it a novel and attractive addition to the dessert; and Belle Magnifique for its splendid crop of clear bright red fruit so excellent for tarts, and making such delicious jam that most of it was used for that purpose. I believe I have already made favourable mention of this fine Cherry, but I must not lose this opportunity of strongly recommending it as decidedly superior to both Flemish and Kentish, to both of which sorts the fruit bears some resemblance, only it is larger, and the tree is more robust.

Of Plums most of the choice sorts were a failure, yet I had plenty of fruit from the old farm orchard, where the Plum trees are well sheltered with one exception—a fine standard Green Gage exposed to the north-east, and consequently without fruit; yet after a favourable spring I have had its branches bending beneath a heavy crop of fruit. The other sheltered trees gave us many bushels of excellent fruit, for the trees are fine ones. The only sort that was not quite satisfactory was Coe's Golden Drop, of which the crop was exceptionally heavy, but the fruit did not keep so well as usual; drought and abnormal heat may perhaps account for that.

The crop of Pears on the cordons was not so abundant as usual; nor is that extraordinary, for the wall faces due east, and the blossoms are always liable to suffer from very high wind from the north-east sweeping round the tree screen facing this wall. The flowers did suffer this year, and the fruit was thinner upon the trees than I like to see it; but, then, how fine it was! Never have I had such magnificent examples of Doyenné du Comice and Pitmaston Duchess; and Dana's Hovey was so large that I should certainly have been puzzled had the fruit been brought to me to name. Let me own that I make no pretension to grow Pears for exhibition, and aim rather to obtain a full supply of useful fruit for table, and the thinning is only severe where there are enough trees of a sort to enable me to indulge in it. Yet where space can be had it is, of course, advisable to plant enough trees to be able to grow a full supply of really fine fruit, and the best of all forms for the purpose is undoubtedly the cordon. Only once before have I known Duchesse d'Orléans so good in flavour from a pyramid. It evidently requires a hot summer to develop its full flavour, and it then answers fully to its description in the "Fruit Manual" as being "a most delicious Pear." Monarch well sustains its high title, for no December Pear is equal to it in flavour. Excellent as Winter Nelis and Glou Morceau undoubtedly are, both must yield the palm to Monarch for flavour. Perhaps there could be no more severe test of this than to take ripe fruit of Glou Morceau from a wall tree and Monarch from a pyramid as I have done before writing this. Fondante d'Automne from a wall certainly appeared to me deficient in flavour this year; was that owing to the heat? A pyramid of Comte de Lamy had a full crop. This is a Pear which everybody ought to grow. I must not omit mention of Fondante de Charnay. I had not many fruit of it, but that was most delicious. It is one of our best late autumn Pears, which is worthy of being better known.



Apples, though plentiful enough, can only have brief notice. Of dessert sorts it would appear superfluous to praise Cox's Orange Pippin, Margil, and other sorts, which, though excellent, are perhaps too well known and cultivated to the exclusion of other sorts of undoubted merit. Let me beg space in more gardens for Pine Apple Russet, Reinette Van Mons, Melon, Pearson's Plate, Pine Golden Pippin, Golden Russet, Lord Burghley, and Hubbard's Pearmain, all which had good crops this year, and impart a pleasing and useful degree of variety to the dessert. Among culinary fruit Gooseberry is certainly worthy of general culture, keeping, as it does, better than any other sort, and being really good for cooking in May and June; yet by Mr. Barron's showing it was only selected by three of the 130 exhibitors who sent him returns.

One word about fruit knowledge. To know fruit well a man must live among it and learn to know trees and fruit by sight. Not only must careful naming be practised among the trees, but also of the fruit in the fruit-room. Name fruit in the bulk, and if you wish to know it thoroughly select a dozen or more of each sort and lay them in rows side by side with the names clearly written, and so become familiar with the form, colour, period of ripening, and keeping properties of each.—EDWARD LUCKHURST.

### HYBRID PERPETUAL ROSES IN POTS.

THERE has been more written about the successful management of Roses for beds and borders outside than upon any other flower of our gardens. The successful cultivation of Roses in pots for flowering indoors has not, however, been so frequently treated upon, and, judging from the correspondence columns of this Journal, this method of culture is rapidly extending. There is, perhaps, more questions asked upon this subject than upon any other, Vines excepted; therefore no apology is needed for the introduction of this subject.

The first point to be considered in the cultivation of Roses is the stock upon which they are likely to succeed the best when grown in pots. Upon this, as upon many subjects connected with gardening, there is some difference of opinions. I have tried all, and after several years of experience, have come to the conclusion that no particular stock is really essential for the cultivation of the Rose. The only reason why stocks are employed is because plants can be increased with greater certainty and rapidity, with less labour and expense, than could be the case from cuttings. Not that worked plants attain a larger size in less time than those upon their own roots, for plants raised from cuttings have a decided advantage in this respect. They throw up growths freely from the base from the very earliest stages, whether varieties of Teas or Hybrid Perpetuals, which plants upon stocks do not until they have been buried sufficiently long for the union of the stock and Rose to produce roots and become independent. When worked upon the Manetti the advocates of that stock advise that the union should be buried in the ground to induce the formation of roots. The majority of Roses do well on their own roots, and these I decidedly prefer for pots. It is advisable in every case where practicable to lift plants on their own roots from beds and borders outside, and if these do not exist, plants that have been originally worked and rooted freely from the union should be selected. Even if the plants have not become independent of the stock upon which they are worked, it is wise to lift them for potting in preference to purchasing them from a distance. When worked, plants have to be purchased, those should be selected that have been budded nearest the root, and it is immaterial whether they are upon the seedling, cultivated Briar, or the Manetti stock.

The best time to lift plants for potting is towards the close of this month, but this depends in a great measure upon the earliness or lateness of the season, especially when the plants have to be obtained from a distance. They should be lifted directly the wood is ripe and before the foliage falls; for this is important, and gives the plants an opportunity of becoming partly established before winter. The only reason why plants lifted at home are preferred is because they can be at once potted with much less injury to their foliage than would be the case if they were packed and had a distance to travel. The preservation of the foliage as long as possible after they are lifted and potted is important if the strongest growth is desired the following spring. Home-grown plants can be lifted two or three weeks earlier than those that may have to travel a distance.

On several occasions we have potted plants before the end of October, and before they have been removed from the outside to be protected in frames large quantities of roots have been formed round the sides of the pots.

If the plants are strong and home-grown, 8 or 9-inch pots may be employed, which are sufficiently large for them the first season, if the ordinary 7-inch pots are the most serviceable. The pots should be perfectly clean, as well as the crocks used for drainage. A large quantity of drainage is not needed, but what is used should be carefully arranged. Over the drainage a thin layer of the fibre of the loam should be placed to prevent the small particles of soil being washed amongst the crocks, and thus rendering the drainage imperfect. The plants should be potted deeply, and if they are worked the union of the Rose and stock should be buried to give them every chance of forming roots from the place where they are united. The soil must be in a suitable moist state at potting time—neither wet nor dry, but so that it can be pressed firmly together without becoming a hard mass. After potting, when properly treated, no water is needed at their roots before the early spring months. The soil should be pressed as firmly as possible into the pots, for I have never found Roses do really well in a light loose soil that is constantly requiring water during the growing season. No pruning should be done at potting time, merely removing the long straggling ends of the shoots.

The treatment after potting is simple, and consists of plunging the pots outside, syringing occasionally if needed during dry or windy weather, and protection in a frame as soon as severe weather approaches. When plunging in coal ashes or other material the rim of the pots and surface of the soil should be entirely covered, for in this condition will the soil be retained in an intermediate state of moisture, and it is surprising what a number of active roots will be formed in a very short time. Plants placed on the surface of walks or beds of ashes with their pots exposed, as is usually the case, very soon have the moisture evaporated from the soil, and water has frequently to be applied, which is by no means conducive to the promotion of root-growth. While the Roses are in cold frames the lights may be thrown off on all favourable occasions to keep them cool and inactive.

To prune and introduce these plants into heated structures in spring for the purpose of forcing them into bloom is ruinous, but this method of treatment is too common. If blooms really must be had, it is better to prepare two batches of plants and sacrifice one lot, for they will only make poor weak growth, and be of but little service for flowering the following season. On the contrary, those grown under cold-frame treatment, as advised, will naturally start into active growth about the middle of February, which should be encouraged until the roots are thoroughly active. When in this condition they may be pruned, leaving about two eyes on each shoot if the plants are weak. If strong and they have a good quantity of roots when potted, the strongest shoots may be left 6 or 7 inches in length, and tied outwards towards the rim of the pot; but even in this case very little is gained, for they do not break so freely as if the plants were thoroughly established. After pruning and when signs of growth are visible, the pots may be lifted and stood upon the surface, or only plunged to their rims. The frame may be kept somewhat closer to induce a free active growth, which can be accomplished by closing the frame early in the afternoon while the sun is upon it. Air should be admitted freely during the day when the weather is favourable to insure a firm sturdy growth. It is much better to allow the temperature of the frame to rise considerably than to admit cold currents of air to the young tender foliage. Growth when once fairly started will advance with rapidity, and it must be determined whether the shoots are to be allowed to grow upright, or whether shapely specimens are to be formed. If the latter are desired, select those plants that have started the most strongly from the base. When the shoots are soft they can be gradually drawn outwards towards the rim of the pots by means of matting and a few small pegs inserted in the soil. This can be accomplished without breaking or injuring the shoots much better when in a young growing state than after the wood has become firm. Sufficient shoots should be trained outwards to form the base, and then be allowed to grow upright the same as the weaker shoots in the centre of the plants, which will have gained strength considerably while the process of training the others has been going on.—W. BARDNEY.

(To be continued.)

### CHRISTMAS VEGETABLES.

1884 will long be remembered as a good year for many vegetables. Dry and excessively hot as the summer proved it did not check the autumn and winter crops to an injurious extent, and of late all seasonable



vegetables have been abundant and excellent. Roots for storing, always important and of great value about Christmas and throughout the winter, were well matured in the autumn, and they are as fresh and good now as we ever saw them at this time. Carrots probably suffered most from the heat and drought, and in dry light soils many failed, but those sown in August made good progress, and as these are now young and tender they are the best of all Christmas Carrots for many purposes. Onions are capitally matured, and are as sound as when taken in.

Rhubarb, Seakale, and Asparagus were much benefited by the genial summer, and they are forcing most readily. The produce, too, is both abundant and good, and all who have tried to have any or all of these valuable additions to our Christmas supplies should have no difficulty in producing them. When Apples are scarce Rhubarb is greatly valued for tarts, and Seakale and Asparagus are generally preferred to any open-air vegetable at this time. We often think that produce of this kind, when grown from thoroughly ripened roots, is much superior in flavour to any grown from the same class of roots after a dull wet season.

Spinach has continued to develop its leaves to a large extent, and they are more succulent and better flavoured than when shrivelled by frost. Brussels Sprouts are a standard Christmas vegetable for those who have no means of forcing, and they are most acceptable at this time. We have none of the very large ones now. Those improved varieties which produce sprouts about the size of Coleworts may find favour with some, but they do not with us. They do not possess the flavour of the little knobs produced by the old-fashioned type, neither are they so hardy. Broccoli of the Veitch's Self-protecting type have had nothing to disturb them this autumn, and they are turning in quickly and good. With so many choicer vegetables to select from, Savoy and Leeks are hardly looked at, but we may require them by-and-by, when less favourable weather may be experienced.

Mushrooms are another delicacy to be added to the list. The summer and autumn were uncommonly favourable for their abundant growth in the open air, and the recent genial weather has favoured them in protected places. Celery is one of those good things which we cannot allow to go unnoticed or uncultivated. We think it is best and more crisp when it has been frosted to the extent of 12° or 15°; but we are using it without this now, and as it is sound and clean it is very satisfactory. All have a common desire to enjoy the best of the good things of this life on Christmas-day, and I am sure the enjoyment will be greatly increased if the supplies from the garden are good and abundant. Where appliances are at hand, and this is accomplished, those most concerned might find it advantageous to make a resolution at once, and adhere to it henceforth, that other Christmases will not find us unprepared.—  
A KITCHEN GARDENER.

### A WORD TO YOUNG HEAD GARDENERS.

ABOUT twelve months ago you kindly published a few words of advice to young gardeners, upon which some little difference of opinion was expressed amongst those for whom it was intended. May I ask a similar favour on the present occasion, for young head gardeners are always numerous?

The smallness of the wages paid to under gardeners compared with that earned by mechanics has often been brought under notice. But there is one view of this question that should not be lost sight of, and that is, while very few mechanics ever become masters, and only a limited number ever become foremen, very few gardeners of fair average ability fail to become head gardeners. There is a wide range in the gardening profession, from the "kid-glove" gentlemen gardeners, with their dozens of men under them, down to the "single-handed" man, who is sometimes expected to be "double-handed"—or both groom and gardener.

Generally speaking, most men find their proper level, or, in other words, drop into their appointed niche in the scale ere they reach the meridian of life. I say generally speaking, for it is not always the best men who hold the best positions, for instances are not wanting where very able men are found occupying very humble places, while others are found in larger places with greater scope, superior appliances, and other advantages, whose abilities do not compare favourably with his more humble neighbour. Some men secure good places by the influence of persons and circumstances more than by any real merits of the man; and if he is a prudent man, with a fair knowledge of his business and its management, he will generally succeed in keeping his position. On the other hand, how many men of real sterling worth are found struggling in obscure out-of-the-way places, simply because they have been tutored, and have laboured in less influential quarters, or are less pretentious. I think it was once recorded in these pages of a celebrated grower of big bunches of Grapes, that when your correspondent called upon him he was found digging up Cabbage stumps. In the eyes of some men such a humble finding would have been prejudicial to their estimation of other abilities. But not so with the Journal correspondent, nor with its worthy Editor, who seems to estimate men more for their sound practical knowledge than from any high position they may occupy.

In the first place, I would offer a word of advice to those who are about to become head gardeners. Let them not be in too great a hurry to take their first head place. Many fail in their first situation from want of experience, and such a failure is a very serious affair indeed, as many can testify. Another important matter is for each one to consider and look after places well within the scope of their abilities. A man who has been for a few years foreman in large places, should seek a similar charge for himself, and he should patiently wait for it. I think it is a mistake for a man who has had first-class experience to take a small place with which he is never likely to be satisfied, but accept it simply for "a start." The very fact of a man having charge of a small place is often a great hindrance to his succeeding to a larger one.

Men who have had less extended experience should never be afraid to confess it. It must be very disappointing for a gentleman to be led to believe, when engaging a gardener, that he has had experience in this or that, in which he may have a special interest in, to find out afterwards that his man is groping in the dark. There are some employers to be met with who seem to think a gardener should know everything, and there are, unfortunately, gardeners too proud to admit their ignorance. Let young men be moderate in the estimation of their own abilities, and it will be found that most employers are reasonable, and, if he finds his man better than he has been represented to be, the best results will follow.

I see a certain firm of bankers have decided that none of their clerks whose salary is under £150 per annum shall marry. I am afraid too many gardeners rush into matrimony before they have the necessary means of maintaining a wife and family in comfort; and this, no doubt, partly from necessity. Employers of gardeners are not so particular about this matter, except it is that their gardeners are married—for but few single men are sought after as head gardeners. Nine out of every ten men who are advertised for have to be married men. This matrimonial difficulty may be said to be the first to confront our young head gardener. If he is not married, or is prepared to marry, he is at once disqualified in the eyes of a great number of employers. If he is married, and has a family, his services are rejected by another class. No man ought to marry till he can comfortably furnish a cottage and have something left to keep him clear of contracting debts, for if a man cannot keep clear of this at the start he has a poor look-out for the future. Pay ready money, and contrive to keep your wants within your means. This will generally give a man a more independent feeling, and will be able to stand out for better terms than those who are always on their last shilling.

When once settled in a place, it would be well if men would make up their minds to stay in it and make the best of it. It is a good thing for a young man, while he is single, to move about, but, when engaged as a head gardener it is quite the opposite. "Rolling stones gather no moss" is an old saying and a true one. The gardener who is frequently changing places is not likely to become rich. The man who makes up his mind to wait for the first chance of another situation is not likely to earn the esteem of his present employer, for it is pretty certain that work will not be done in that thorough manner which a deeper interest in it would insure. And, if men would consider, they could not possibly fail to see the blindness of such a course of action. If they do not perform what they know to be their duty to their masters, how can they expect commendation when they leave their service? A gardener should never forget that what is for the master's interest is also his own interest, whether he intends staying or leaving. In the former case he should spare no pains to satisfy his employers in all things, and gain increased respect and confidence. In the latter he must do the same in order that he may carry with him a good character, and leave the place he has had charge of in thorough order, as a memento of faithful service.

I would advise all young men settling in their first head place to divest themselves of that unfortunate idea, entertained by so many, that a gardener's happiness and prosperity can be estimated by the number of men he has under him. It is an erroneous idea. A man having charge of a large establishment has his difficulties in managing his men; in getting them in various departments to do things just as he would like, in the innumerable things he has to think of, and run here and there after, in addition to all the petty annoyances to which men in humbler positions are subject to.

Most men on taking their first charge feel a little embarrassed. Suddenly thrown upon their own resources, they are brought face to face with many little matters not thought of before, while others do not seem so familiar as when acting under their late chief. This, however, will soon wear off, and reading



old notes taken in former years, articles on subjects which they may not be well up in, and a reference to a good calendar of garden work, will very much help them out of their first doubts and difficulties. They must first make themselves acquainted with the requirements of the establishment. With some a large supply of fruit and vegetables are the chief objects, while others "go in" largely for plant-growing and cut flowers; others make a speciality of hardy plants, florist flowers, or Roses, &c. Whatever a master or mistress takes a special interest in, the gardener ought to give such his first and personal attention and in all other matters try to anticipate their wants.

Some gentlemen, and ladies too, I am sorry to say, are too much occupied with other things to take much interest in their garden. The young gardener who finds himself under such a master must be very particular how he conducts himself. If his heart is not in his work he is apt to become lax in the performance of his duties. To the uninterested employer this may not be found out for some little time; but, depend upon it, one evil leads to another, and ere long things begin to go wrong in more than one quarter, and very often with such gentlemen little consideration is given to the faithless servant.

Another thing, I think a gardener ought to study to be a man of few words, and avoid pouncing upon his master every time he makes his appearance in the garden, about this, that, and the other little thing. Rather let him exercise his own discretion, and go quietly about any little improvements to which no outlay is attached. If an employer is not inclined to give a gardener everything just as he would like it, let him avoid any hasty words, for they are sure to be repented of. There are many things that are hard to be borne in silence, but it would be better so than that a heated temper let loose an ungovernable tongue. Many employers have peculiar ways, which they have a perfect right to, and servants should not be too hasty to judge or oppose them. Nor should they, without very careful consideration, resign a charge without some substantial reason. Many impulsive young men throw away chances they would be glad of in after life.

When once settled in a new place let our young gardener at once look up matters that have been neglected, and, as time will permit, make everything as tidy as possible, both outdoors and in. As opportunity occurs afterwards, such improvements as he thinks ought to be made may be suggested to his master. He should so arrange all routine work, such as watering plants, ventilating, firing, serving the kitchen, &c., so that each man may attend to such work, without fail, at regular hours. Cultivate punctuality in all things, and see that men under you do the same. Assist and encourage young men to improve themselves by giving them such papers as come into your hands; also see that their rooms are made as comfortable as possible, and that they do not waste too much of their earnings at unprofitable or dangerous amusements, such as card-playing, or other games of chance, which generally lead to frequenting public-houses and intemperance—a habit through which old men as well as young are continually coming to grief.

Endeavour to live in harmony with your fellow servants. Give especial care to the cook's wants, for her good graces are much to be desired. "Sow thick, thin quick, and keep friends with the cook" is the advice of the late Mr. R. Fish. Occasionally visit your neighbour gardeners, encourage them to return the compliment, and so conduct yourself as to command their respect. Be ready at all times to join in any good work, be it the management of a flower show, or advising a labourer how to profitably cultivate his garden plot.

But I have said enough, perhaps too much, although many more matters of importance might be referred to with advantage. It is just possible that I may have omitted some of the most important. Let me state, in conclusion, that I do not set myself up as a model servant; on the contrary, many points touched upon are matters in which I have myself made mistakes to my material disadvantage; and they are addressed, not to men in high positions, but to those who are like myself—A WORKING GARDENER.

## ORCHIDS.

[A paper read by Mr. D. Birt before the Caterham Horticultural Society, December 12th.]

It would perhaps be not unfitting to begin the discussion of our subject by giving an answer to the question, "What is an Orchid?" by showing, that is to say, in what respects Orchids differ from other plants. Their chief peculiarity consists by no means in the beauty of their flowers—for many of these flowers would scarcely be thought beautiful—but that which marks off the Orchids from general plant life is the curious structure and wonderful contrivance which their

flowers exhibit and which they possess for the accomplishment of a special purpose, which I will explain presently. It is one of these special points of flower structure which has given rise to the term "Orchid," but as I think we can best turn our attention to the flowers of these interesting plants after we have considered one or two other aspects of our subject.

A common idea about these plants is that they all grow in very hot countries, and that they all need very hot quarters when brought under cultivation. The fact is, that though the forests of the torrid regions, and particularly the South American forests, are very rich in Orchids, yet some of those which bear the finest and most interesting flowers are found in climates almost temperate. Orchids, indeed, are found in nearly all parts of the world except the very coldest and most arid, and of the 3000 species which have been described, thirty-eight are found amongst the wild flowers of Great Britain.

Orchids have two very distinct modes of growth. A large number (the tropical kinds, more especially) grow on the boughs of trees. They appear in no way to injure their big friends who thus hold them aloft, shade them from the fierce sun, and "rock them in their arms so wild." Hence Orchids are not classed with parasitic plants (such, for instance, as Mistletoe), which feed on the juices of the trees they occupy, but are termed epiphytes, which means a plant growing upon a plant. These epiphytes, or tree Orchids, form one of the two divisions of the Orchid family.

The other division consists of the terrestrial Orchids, as those are called which grow down upon the ground.

I will take two or three examples of these groups, first calling attention to the *Cattleya*. This is one of a large section comprising many sorts differing less in the character of their growth and the shape of their flowers than in the colouring of the latter, which is very various in the different species. Though the mode in which it is grown—viz., on the top of a clay pot, with a little peat under it, is found to be the best artificial mode of cultivation, it doubtless grew with far greater vigour high up on its native tree in some Brazilian forest whence it was brought. You must imagine it so growing; in hot sunshine by day modified by the overhanging leafage, at night blown by the cool night winds from the Atlantic, and anon during its growing season drenched by the downpour of a tropical thunderstorm. The base of each leaf (that upon which it grows) is much more than a mere leafstalk. It is, in fact, a reservoir of moisture upon which the leaf subsists during the long season of drought to which the plant is exposed. But for this reserve of moisture the plant would die in the hot rainless part of the year, which continues for some months. Due allowance has to be made for this when the plant comes under cultivation, and hence when *Cattleyas* go to rest after completing their growth for the year we give them scarcely any water. Under this treatment these pseudo-bulbs or reservoirs frequently show signs of shrivelling by partial loss of their contents, but when the growing season comes round again, and water is again given in more abundance, the bulbs get plump again.

We will next take the *Odontoglossum*, also found on the American Continent, and representative of the class of earth Orchids which are found in great variety in Central America. The particular species I have selected is named *O. Alexandræ*, because it was introduced to England about the time that our future Queen Consort first came to our shores as the Prince of Wales's bride. This Orchid, though it is native of Bogota, and, therefore, as near the equator as many of the *Cattleyas*, is found only at high altitudes, and experiences consequently a much cooler climate than the Brazilian *Cattleyas*. Travellers describe it as growing in an almost perpetual mist, the result of which is that it endures very subdued sunlight, a large amount of air moisture, and, as might be expected, is found surrounded with mosses and lichens and other moisture-loving growths.

The third example is a *Dendrobium*, of which there is a multitude of varieties. It is an epiphyte. You must imagine this variety, which comes from India, growing in some dense jungle amidst luxuriant vegetation, its long growths not turning upwards, as these are trained, but hanging down possibly over a stream of water from some overarching branch. These plump growths are called pseudo-bulbs, and serve the same purpose as the corresponding portion of a *Cattleya*—that is, as a reserve of moisture for the plant's sustenance during the long rainless season. As in the case of the *Cattleya*, each leaf has its own reservoir. Each pseudo-bulb of the *Dendrobium* carries many leaves ranged symmetrically down it. From these bulbs, after the leaves have fallen, charming clusters of flowers emerge. The terrible and the beautiful in nature are often very close to one another, and it may well happen to the traveller, as he turns away from the scene of floral beauty, to encounter the gaze of a tiger watching him with not less interest than that with which he has been gazing on the *Dendrobiums*. Well for his chances of escape if the tiger has not yet completed the digestion of his last victim.

Our fourth plant is a *Cypripedium* or Lady's Slipper, so called from the slipper-shaped pouch at the base of the flower. This section



is the most widely distributed of any Orchids. Varieties of it are found in every quarter of the world, and in England we possess one native variety, *Cypripedium Calceolus*, which is said to be found more especially in the north of England. The *Cypripediums* have no pseudo-bulbs, because they are not called on to bear drought. They are found in moist places at the foot of trees, or protected by moist rocks and stones. The plant I am specially referring to comes from Sylhet, and is called *C. insigne*. It may be of interest to contrast the flowers of the ordinary type with those of this superior variety called *C. insigne Maulei*, after the firm Messrs. Maule, of Bristol, who were fortunate in importing some plants of it many years ago. The upper portion of the flower has a much larger colouring of white than the normal type, and there are besides some handsome purple spots on the same part of the flower which are wanting in the common type.

The collection, the sending to this country, and the distribution here of exotic Orchids has become of late years an important industry. At first a few of the largest nurserymen, Messrs. Loddiges, Veitch, and others, sent out at great expense skilled botanists, who sought out plants and sent them home. The facilities for travelling in those days were not so great, nor were the best modes of packing the plants so well understood as they are now. At the present time the exact hunting ground for all the ordinary sorts is well known, and the collectors make for the right spots without the uncertainty which the earlier collectors experienced. The natives co-operate intelligently in the work of collection and packing, travelling is more speedy, and, therefore, the plants are imprisoned for shorter periods. Owing to all these causes, instead of only one or two out of a large importation arriving in this country in a living state, as used to be frequently the case, large quantities are now transmitted full of vigour and health, with constitutions prepared to bear up against what is in many cases the cruel kindness of their cultivators.

While many of the Orchids that find their way to this country are nursed by the importers into reawakened life, and are then sold as established or fully-growing plants, yet a large number are put up to auction in their yet dormant state at Stevens' and other sale rooms. The purchase of these lately arrived plants has about it the charm which mankind seems always to find in uncertain investments, for the Orchid buyer may give a few shillings for some freshly imported pieces, and after establishing them may find that one or more of them from some excellence or peculiarity of the flowers is worth in the Orchid market as many ten-pound notes as he gave shillings. Many romances could be told of such purchases. Mr. James of Norwood, a very estimable and successful nurseryman and cultivator of Orchids, bought at a sale some years ago for a few shillings a bundle of *Dendrobium nobile*. One amongst the number, when it flowered, turned out to be a very fine and indeed unique variety, and was named *nobilius*. Mr. James raises every year by cuttings a few very small plants of it, and for each of them when 5 or 6 inches high he gets ten guineas. He could sell scores of them at this price if it were possible to produce them. He raises, of course, as many as he can, and this one plant will probably bring him in a very agreeable annuity for the rest of his life, or till some finer variety of the kind puts it into the shade.

(To be continued.)

#### DRAINAGE FOR FRUIT TREES.

AN extensive grower of fruit trees for sale told me recently that the majority of them were sent out in December, January, and February; and as the planting season will now be on I think the question of drainage will repay for discussion in your pages and practice in the garden. In making new Vine borders and before planting Vines there is generally much work devoted to draining the border. Peach trees under glass are also considered worthy of this attention, but those planted in the open have not always the soil drained for them. Now, it appears to me if trees which are planted under glass and away from the influence of excessive rains require drainage under the roots, must it not be very detrimental to those planted in the open air to have no provision of this kind made for them? Under glass trees have generally the best of soil in their borders, and no one would ever think of planting them in the clay and other wet soils in which open-air trees are frequently planted. If more attention were given to the drainage of the soil underneath Apple, Pear, Plum, Cherry, and all kinds of fruit trees in the open air, we should see fewer fruits fall prematurely, become cracked, woody, and flavourless.

Canker in the wood, too, as a rule proceeds from causes at the roots, and if the roots have penetrated to an ungenial subsoil or are living in a wet undrained soil, atmospheric conditions, no matter how favourable they may be, will fail to produce good results. All fruit trees should have the positions they are to occupy fully drained before planting. On the driest and best of soils the roots may be induced to run down far beyond a genial depth, and if it were for nothing but to prevent this drainage ought to be provided. From 2 feet 6 inches to 3 feet is a good depth of soil for fruit trees, but large round holes should be made 18 inches deeper than this and filled with drainage. Rough ashes and

elinkers are very good when broken stones or bricks cannot be had. No roots of any importance will penetrate 18 inches of such material, and this will always insure the roots being in a sweet soil. We do not carry drainage to excess, however, with wall trees, as we consider a distance of 8 feet or 10 feet directly under the main roots sufficient. Trees in the kitchen garden or orchard should have their positions drained to the extent of about 6 feet across the bottom of the holes in which they have to be planted. When the drainage has been placed in to the required depth, if turves can be had a quantity of them should be packed closely upside down all over the drainage, and this will form one of the best beds for a fruit tree.—A. K. G.

#### CRASSULA LACTEA.

WHETHER grown in baskets or pots this *Crassula* is useful for yielding a profusion of white flowers during midwinter of a character quite dissimilar from all other plants flowering at the same period. Like some other plants, *Sedum spectabile* for instance, *Crassula lactea* is greatly im-



Fig. 94.—*Crassula lactea*.

proved by generous culture, and plants such as those above referred to are eminently worthy of special note. It may be remarked, however, that when grown in pots the plants produce much larger flower heads than when grown in baskets, and it is for pot culture especially that this old and almost forgotten *Crassula* is likely to become useful.

*Crassula lactea*, which was introduced from the Cape of Good Hope in 1774, is a white-flowering plant but little known or cultivated; but now that flowers are more the fashion than formerly, and when white flowers especially are in great request in the dull days of winter, anything to relieve the monotony of the *Camellia* and *Primula* must be looked upon as an acquisition. This *Crassula* is a plant of easy culture, and requires a temperature only warm enough to keep out the frost, except when it is about to come into flower. It is better then to remove a batch of the most forward plants into a warm house temperature from 55° to 60°. If this is done every ten days a good succession of flowers can be kept up.

The cuttings are best taken off in January or February. We insert four cuttings in a 60-sized pot, strike them in heat, and keep them there until the pots are well filled with roots. The plants may then be shifted



into 48's, or 5-inch pots. The soil in which the cuttings are struck consists of loam, leaf soil, sand, and a good proportion of burnt ballast. When the plants are shifted into their flowering pots some good decayed cow manure is added to the soil. They are kept in a close pit or house after being potted into their flowering pots until the roots take hold of the soil; they are then placed in a cold frame, from which the sashes are removed during July, August, and beginning of September to mature the growths of the plants.

## HISTORICAL JOTTINGS ON VEGETABLES.

### SUNDRY POT HERBS.

OUR Saxon, Danish, and Norman ancestors were, for the most part, men of mighty appetites, but for all that they liked to have their dishes tasty. Hence, as I have already remarked in the pages of this Journal, the culture of herbs for flavouring was a matter of importance, and a space was allotted to these in the earliest English gardens we read of. For stews and salads, it is true, they used to gather a variety of wild plants, often with the risk, like certain Hebrews of old, of getting "death in the pot" through careless or ignorant pickers. Gradually, during the Middle Ages, there sprung up a steady demand for garden-grown vegetables and herbs, and we find the herb-women spoken of as being distinct from the ordinary costers. These herb-women bore by no means a good name, in fact several authors class them with the fish-wives, so that their characters were far from possessing the sweetness of the herbs they vended.

"Buy my Sage; a farthing a bunch!" is an old cry of London streets, and Marjoram generally accompanied it at the same low price. The sellers of these herbs were certainly content with a moderate amount of profit. Now principally used as a seasoning for some meats that take a strong flavour from a herb or spice, Sage was formerly in repute for its medicinal qualities also. In Latin, the name of *Salvia officinalis* points to its effects as an internal healer, and the vernacular "Sage," taken from the French, refers to the belief that the plant increased the wisdom or sagacity of those who ate it; moreover, it was supposed to strengthen the memory. So food and physic were conjoined in Sage cheese, once commonly made by housewives, if it be of small popularity now. A tea was a favourite beverage. This was made from the leaves of the narrow-leaved variety. The London market gardeners raised it from seed, but more usually from cuttings, and as Sage is a plant that will not thrive in cold or damp places, some have grown it upon the top of ruined or half-decayed walls, where it can obtain both sun and air.

The classical name of the Thyme (*Thymus vulgaris*) makes a reference to the reviving properties the ancients attributed to the smell of the plant or its flowers. Highly celebrated was the Attic honey, because the bees were said to visit frequently the flowers of the Thyme, and in consequence the Romans planted it freely for the sake of their bees. The species evidently is a native of South Europe. If no certain allusion to the Thyme can be discovered in English books until 1548, there is good reason for believing it was well known in this island long before, at least from the period of the Crusades. Kent was famous for it in the reign of Charles II., says Evelyn, much being grown about Sandwich and Deal, no doubt cultivated with other herbs and vegetables by foreign gardeners, who, fleeing from persecution, landed in Kent, and by degrees worked their way to the vicinity of the metropolis. For some time only the seed was used as a flavouring, and also as a medicine. In the latter direction the plant has lost repute; in the former it has necessarily suffered by having to compete with foreign spices, which were either unknown to our forefathers or of great scarcity. It was the practice of the principal market gardeners who supplied London with this herb to sow the seed broadcast, and thin when the plants were 2 inches high. Others used to transplant and distribute a part of the crop, so as to raise fine bushy plants, although it has generally been the plan to cut and dry Thyme for winter use, in spite of its being a hardy species with us. There is a broad-leaved kind of vigorous growth (*T. citriodorus*), commonly called the Lemon-scented Thyme, which some botanists think may be a variety of the native species common on dry banks. Owing to its creeping habit this is mostly propagated by division of the roots.

Marjoram, or, as folks once called it, Marjorum, was then a great favourite, now of minor importance for obvious reasons; the name, in fact, covers a little group of species. The common Marjoram (*Origanum vulgare*) is a native of Britain, possibly a doubtful one, and presumed to be a plant preferring hilly places. Before people took to cultivating it in gardens they made tea

from its leaves, or dried these for snuff; the plant was also much liked as a flavouring for broths and similar compounds. Gardeners have always been accustomed to propagate this by cuttings, and so, too, the winter Sweet Marjoram (*Origanum heracleoticum*) which belongs to the south of Europe, and reached us about 1640. The Sweet or Knotted Marjoram (*Marjorana hortensis*), came from Portugal in 1573, a plant that was found in several respects to be superior to the common kind, hence it largely superseded it in cultivation. This has always been treated rather as an annual than as a biennial, and sown yearly by gardeners. That hardy sort, called the pot Marjoram (*M. Onites*), which stands our English winter of the average well enough, was from its introduction propagated by cuttings taken at intervals of three or four years. This was not brought to England until 1759, having then been introduced from Sicily.

With the Basil there are historical associations of some slight interest. As a culinary aromatic writers upon household affairs gave it high praise two hundred years ago or more. The leafy tops, occasionally accompanied by the flowers, were added both to stews and salads. In London city the time-honoured aldermanic turtle soup has its traditional flavouring of Basil. We notice also that an author of the reign of Elizabeth satirises some of the farmers because they grew pots or jars of Basil, and presented these to their landlords in order to secure their favour. Even yet it is a herb sown in pots, particularly on the north of the Tweed. The sweet or larger Basil (*Ocimum Basilicum*), was brought from the East Indies in 1548, and the bushy or least Basil (*O. minimum*), from the same country in 1573. Both are annuals, and the English gardeners have sometimes sowed the seeds in every month of the year for succession. There was also a demand, at one period, for Basil seed produced in Italy.

Parsley, which old Gerard occasionally spells "parscle" (*Apium Petroselinum*), is a plant that is a native of Sardinia and adjacent places, introduced to England in 1548, and before long well distributed over the island. Here and there it grows seemingly wild, a circumstance unfortunate for this reason, that the darker-leaved malodorous Fool's Parsley (*Æthusa Cynapium*), has been gathered and eaten in mistake for the true Parsley. It has also been picked from gardens under the same false impression. This might be lessened were the culture of Parsley restricted to the curled varieties. The ancients esteemed this herb, and they were cognisant of the fact that it thrives in or near moist spots, and the general scarcity of Parsley during the summer of 1884 is an illustration of the unsuitableness of dry seasons to the species, though some gardeners have, ever since it has been grown in Britain, preferred to put it on ground somewhat elevated and exposed, lest it should rot off in the continued rains which occur, at times, when we have a mild winter.

The Hamburg Parsley was introduced on account of its Carrot-shaped root; drawn between the autumn and spring, and supposed to possess medicinal properties. Some attention was formerly given to the Naples or Celery Parsley, believed to combine the good qualities of both species, the leaves being eaten with the young stalks, like those of Celery. Parsley is a hardy biennial, hence it has been customary to sow it chiefly in early autumn, but the London gardeners were accustomed to make a succession of sowings from February to May. It was sometimes sown in beds as well as in rows, and also occasionally made an edging. The supply to the metropolis at present, however, comes nearly all from localities beyond the sound of Bow bells. We find this plant oddly associated with the celebrated Peel, who, when experimenting in printing on handkerchiefs, had a sprig of Parsley brought him from the garden by his daughter Nancy. It was copied successfully, and some afterwards jocosely called him "Parsley Peel."—J. R. S. C.

### HARDY TULIPS.

For spring and early summer flowering, bulbs, whether Tulips, Fritillarias, or Scillas, &c., are now looked upon as indispensable necessities to modern gardening; indeed, when not a leaf is to be seen on the trees around us, and few flowers on our extensive flower borders, these bulbous plants come in to raise our drooping hopes by varying and lighting up our otherwise dull surroundings. At the present time single flowers in fashionable circles carry all before them, and although we do not claim a standard of æstheticism for Tulips, their bright and cheery colours do not come amiss when flowers are scarce, and in many cases too expensive.

In almost any soil, provided it be well drained, these bulbs come year after year with fresh vigour, and in almost every case in greater numbers, the greatest trouble seeming to be to pluck them when they are ready for table decorations. Objections have been made to so much space being left unoccupied during the summer months, but this need not be so, as planting at the depth of, say, 9 inches, a good depth for Tulips, the borders



or beds could be made gay without at all disturbing the bulbs, or even injuring them. This also raises another question. Many growers lift their bulbs and store them when they have flowered, and no doubt this answers well where there is nothing else to be done; but it appears to me that the success obtained by leaving them undisturbed is as great, and possibly greater, than in the other case, the trouble infinitely smaller, and all chance of mixing the bulbs avoided. Deep planting in well-drained soil is the main essential to their success.

**T. ELEGANS.**—This plant originated first in gardens, and said to be a probable hybrid, *T. acuminata* having something to do with the parentage. It grows about a foot, sometimes more, in height, with Campanula-shaped flowers 3 or 4 inches in length, of a bright or intense red, and having a yellow ring at base. Very distinct, and a most useful plant for mixed border, or for centre of bed or designs. Flowers in April.

**T. GESNERIANA.**—This is supposed to be the original parent of the late-flowering garden forms, and, in company with *T. suaveolens*, may have to do with all of them. It is hardly so tall as the above, but has larger flowers, bright red, but varying sometimes with and without basal blotch. It also includes *T. Schrenkii*, *T. fulgens*, and others, differing from the type in points not of little interest to the gardener. It flowers in May, and is a native of Caucasus and Armenia.

**TULIPA ORPHANIDEA.**—This is undoubtedly one of the finest and most useful Tulips of the *T. sylvestris* group, a charming plant for grouping, and quite hardy. It likes a rich, light, and open soil, and always best coloured in exposed situations. It grows about a foot in height, one flower being produced on each peduncle. They are bright shining yellow, suffused with red on the outside, and having reddish-purple blotches on the claw. The leaves are longish, glaucous green, and channeled down the face. It is a native of the mountains of Greece, flowering in May and June.

**T. BIFLORA.**—Though not one of the showiest, this recommends itself from its free-flowering habit, as many fine flowers are produced on each peduncle; also perfectly hardy, and perhaps increasing about the quickest of those in general cultivation. It seldom exceeds a foot in height, producing two leaves not above half an inch broad. The flowers are small compared with the former, white inside with a yellow eye, the outside being tinged green and purple. A native of the Caucasus and Siberia, flowering early in March and April.

**T. ILIENSIS**, which, however, belongs to another group, and one of the new central Asian species, will be hardly distinguishable from *T. biflora* from a garden point of view.

**T. AUSTRALIS** and the variety *Celsiana* are gems for the rockery, where their long-continued flowering from May onwards renders them always attractive. They do well on shelves, and are useful amongst Ferns. The leaves are narrow, dark green in the centre, edged with a crimson border; very neat. It flowers freely, the blooms being bright yellow, flushed or streaked with red on the outside. A native of southern Europe.—M. S.

### PRUNING VINES.

DECEMBER, January, and February are the principal Vine-pruning months, and as all but late vineries are now cleared of their fruit, the wood ripe, and the leaves gone, much pruning may be done just now. Amateurs are often not sure when to begin. So long as a leaf remains they think the sap is flowing, and to prune then would be injurious, but when the leaves are quite yellow and the wood hard no harm will follow cutting, especially at this season. As spring advances there is plenty of other work, and if the Vines are left unpruned until then they may have to be done hurriedly and very imperfectly, but now there can be no excuse for failing to do them properly. There is no time when Vines in a cool atmosphere are more at rest than at present. As the days lengthen the sap soon begins moving, and then it may flow and run out as the Vines commence growing. If pruning is done when the Vines are quite at rest the wood soon heals.

In pruning strong healthy Vines every one of the side shoots may be cut-in to two eyes or buds from the old wood. When perfectly dormant these buds are very small and not easily injured, but when growth has begun and they have swelled a little they are very easily rubbed off, and the utmost care must be taken that they are not removed. Young canes which are being left a considerable length should have the small side growths cut from them, and the small or unripe tops as well. Very old Vines with weak shoots should not be hard pruned; if they are, and only one or two eyes are left on each spur, the shoots which come from these will often be quite sterile, and those with old and weak Vines may lose a crop in this way, whereas had they left the shoots longer in pruning—that is, four or five buds, many bunches would be produced. This long-spur system will soon cause the spurs to become long, but it is better to do this for a year or two and let the Vines gain strength and bear fruit than have no crop. There are some Vines, such as Duke of Buccleuch, Golden Champion, and Gros Guillaume, which fruit much more freely on long spurs and young wood than when closely pruned. Indeed this is the only way to insure a crop on those varieties.

Where young rods have been taken up during the summer to supersede the old ones these should be cut out before any of the real pruning begins. They may be sawn off, then dress the cut part with a sharp knife. Where parts of the stem have become bare of branches the shoot next to this vacancy may be left long enough to fill the

space, but rods which have the spurs and buds clustered on one part and none for some distance again are neither sightly nor profitable, and the sooner a young rod is taken up from the base and the old one cut out the better.

Vines recently transplanted should not be hardly dealt with in pruning until they have become established again. Close pruning only agrees with robust Vines, and this should never be forgotten. Some use pruning scissors, but as the wood is softer than that of many fruit trees, and very liable to be bruised by the scissors, we prefer a sharp knife.—A KITCHEN GARDENER.



WE have received the following ROSE SHOW FIXTURES FOR 1885:—Canterbury, July 27; Crystal Palace, July 4; National Rose Society, South Kensington, July 7; Sutton, July 8; National Rose Society, Manchester, July 11.

—“J. B. T.” writes on JUDGING TOMATOES as follows:—“These should be judged by the taste, and judges should acquire it to be qualified, as the same variety differs in flavour according to treatment, soil, and climate. The general use of the Tomato in an uncooked state is still in its infancy, and at present growers for profit only study those for culinary purposes. To bring under public notice those suitable for table use much may be done by exhibits in a dessert class.”

—MESSRS. WILLIAM PAUL & SON of Waltham Cross, whose special exhibitions of Roses and other flowers have been twice honoured by visits from Her Majesty the Queen, and who supply Roses to nearly all the crowned heads of Europe, have lately received a Royal Warrant appointing them Rose-growers to Her Majesty.

—MR. S. WINDSOR, Glangwna Gardens, Carnarvon, sends us flowers and foliage of *LAPAGERIA ROSEA* AND *ALBA*, the former an extremely good variety, and both remarkably well grown. One leaf of *L. rosea* is 5 inches long and 3½ inches wide, exceedingly thick and strong. The flowers are 3¼ inches long, 2½ inches broad at the mouth, and very dark in colour—one of the best varieties we have seen. The white variety is smaller, but very pure. Accompanying these was also an excellent sample of Curled Parsley gathered in the open ground from plants raised from seed sown June 12th.

—MR. A. J. BROWN, The Lodge, Finches, Lindfield, Sussex, writes:—“Being too late for an alteration to be made in the Horticultural Directory, will you intimate in the Journal that since the death of Mr. and Mrs. Procter this estate has been purchased by W. Saville, Esq., and I remain with him as gardener?”

—“E. B., Streatham,” writes:—“HECKFIELD is noted for many good things, but particularly for its Lady Downe’s Grapes, and these are fully up to the average this season, although the rods bearing them are ‘standing on their heads.’ These Vines have a history, so far as I know, peculiar to themselves, having once possessed two separate sets of roots. The Vines were originally planted on one side a span-house, the rods being trained over to the other side of the house, and rooted at the extreme ends into another border. After fruiting in this way for several years Mr. Wildsmith commenced to sever the rods at the top of the house for the purpose of removing the original portion to plant young Vines. I believe some visitors to Heckfield doubted whether the remaining portion of the canes would continue to do well after being severed from the parent stem; but Mr. Wildsmith has amply proved that Vines are as much at home ‘on their heads’ as in their usual position, for no one could wish for a finer lot of Grapes than these rods are carrying.”

—THE Exhibitions of the NATIONAL AURICULA SOCIETY and of the NATIONAL CARNATION AND PICOTEE SOCIETIES (SOUTHERN SECTION) of 1885 will be held by arrangement with the Council of Royal Horticultural Society in the gardens of the Society at South Kensington—the Auricula Show on April 21st and the Carnation and Picotee Shows on July 28th. The 21st of April is not a Committee day of the Royal Horticultural Society. An effort was made to fix the Exhibition for April 28th, but failed, owing to that date having been previously appropriated by the



Council of the Royal Botanical Society of Manchester. A meeting of the Committee of both Societies will be held by permission in the conservatory at South Kensington on Tuesday, January 13th, immediately after the various Committees have completed their work. The principal business will be to pass the rules for exhibitors, and to arrange and sanction the printing of schedules for 1885.

— A WRITER in an American paper thus advocates the employment of WOOD ASHES FOR FRUIT TREES:—"My orchards cover some twenty acres. One of a little less than two acres has been kept under the plough and highly enriched ever since the trees were planted in the autumn of 1843 to the present time. Those trees have grown to be very large, though I have taken pains to keep them in hand by heading in; but some of them have passed maturity and are going to their decay. But trees of the same kind that were set in grass land, well cultivated for the first few years, but after the first ten years perhaps were only cultivated occasionally, and some of them not at all, have done better. This has been brought about by an annual and biennial top-dressing. The best top-dressing I have applied to the Apple is wood ashes and bone. Stable manure seems to promote growth rather than fruit-bearing; but bone and ashes applied together seem to develop the fruit-buds and growth of the fruit and to keep the trees, not in very luxuriant growth, but in a good healthy growth. Consequently I fully agree with the Secretary of the Board of Agriculture of Connecticut that the best mode for the ordinary farmer who has large orchards and does not wish to keep them under the plough is to give the trees an annual or biennial top-dressing. A bushel of ashes would not be too much for a tree of ordinary size. You will also find that where you put on an occasional top-dressing, as ashes, the grass is more luxuriant than on the outside."

— THE Annual Report of the METROPOLITAN PUBLIC GARDEN ASSOCIATION gives full particulars as to the extent, annual cost, and value of the parks and gardens and open spaces in London, and from a long list we select the following as the most important:—Hyde Park 390 acres, St. James's Park 83 acres, Green Park 71 acres, total annual cost £39,550; Kensington Gardens 310 acres, annual cost £6117; Regent's Park 400 acres, annual cost £9888; Finsbury Park 115 acres, annual cost £3765; Battersea Park 250 acres, annual cost £7522; Bushey Park 1100 acres, annual cost £3043; Hampton Court Gardens, annual cost, £2226; Kew Gardens 270 acres, annual cost £21,436; Richmond Park 2258 acres, annual cost £5719; Clapham Common 220 acres, cost of purchase £22,711, annual cost £1674; Wandsworth Common 160 acres, annual cost £800; Wimbledon Common 1000 acres, annual cost £2400; Barnes Common 100 acres, annual cost £200; Hampstead Heath 240 acres, annual cost £681; Thames Embankment Gardens 13 acres, annual cost £1731; Southwark Park 63 acres, annual cost £1966; Kennington Park, annual cost, £1464; Greenwich Park 174 acres, annual cost £2132; Epping Forest 5348 acres, cost of purchase £257,000.

— A REMARKABLE wood, known as MOUNTAIN MAHOGANY, grows in Nevada, which is thus described by a correspondent of an American paper:—"The trees do not grow large. A tree with a trunk a foot in diameter is much above the average. When dry the wood is about as hard as Box wood, and being of very fine grain might, no doubt, be used for the same purposes. It is of a rich red colour and very heavy. When well seasoned it would be a fine material for the wood-carver. In the early days it was used for making boxes for shafting, and in a few instances for shoes and dies in a quartz battery. Used as a fuel it creates an intense heat. It burns with a blaze as long as wood would last, and is then found (almost unchanged in form) converted to a charcoal that lasts about twice as long as ordinary wood. For fuel it sells much higher than any kind of wood; indeed, a cord of it always brings the same price as a ton of coal. The only objection to it is that it creates such an intense heat as to burn out stoves more rapidly than any kind of coal, however bad."

— PROFESSOR W. T. DYER calls attention in *Nature* to a recent important discovery with regard to the REPRODUCTION OF FERNS, from which it appears that Mr. E. T. Druery has observed a previously unnoticed mode of reproduction in the case of *Athyrium Filix-femina* var. *clarissima*. He states that "In this Fern the sporangia do not follow their ordinary course of development, but, assuming a more vegetative character, develop more or less well-defined prothallia, which, according to Mr. Druery's observations, ultimately bear archegonia and antheridia. From these adventitious prothallia the production of seedling Ferns of a new generation has been observed to take place in a perfectly normal

way." Mr. Bower has followed up this by observations on *Polystichum angulare* var. *pulcherrima*, in which the apex of the pinnules grow out into an irregular prothallium, upon which the antheridia and archegonia have also been discovered. To this phenomenon the term of apospory is given, and the following dates are given by Professor Dyer as showing the advance in a knowledge of the reproduction of Ferns:—"1597, Gerard observed seedling plants near parents; 1648, Cæsius, sporangia; 1669, Coles, spores; 1686, Ray, hygroscopic movements of sporangia; 1715, Morison raised seedlings from spores; 1788, Ehrhart, prothallium; 1789, Lindsay, germination of spores; 1827, Kaulfuss, development of prothallium; 1844, Nägeli, antheridia; 1846, Suminski, archegonia; 1874, Farlow, apogamy; and in 1884 Druery observed apospory."

— PART 17 of the ILLUSTRATED DICTIONARY OF GARDENING (L. Upcott Gill, 170, Strand), continues the subjects from *Cunonia* to *Dahlia*, with several illustrations of *Cyclamens*, *Cypripediums*, and other plants. Under *Dahlia* is a figure of *D. Juarezi*, which could scarcely be recognised if the name were not given with it.

### NOTES ON ORCHIDS.

CALANTHES.—It is a great mistake to have these in flower in early autumn, for they are much more useful about Christmas. The closing days of the year and the first month of the next are without doubt the worst time for the production of flowers in large quantities, hence the value of those plants that flower freely at that time. The flower spikes on the whole of our plants are now visible, and the foliage showing signs of decay, although on the latest plants much of the foliage is still fresh and green. It is a great mistake to discontinue the supply of water to the roots of the plants before the foliage has naturally died and several of the flowers expanded on the spike. When plants are judiciously supplied with water the roots are still active, and to keep the soil dust dry about them, or to remove the foliage prematurely because it appears somewhat unsightly, is one of the greatest evils that can be practised in the cultivation of these Orchids. The destruction of the roots in this stage results in the imperfect development of the pseudo-bulbs, and consequently a decrease in their size another season. Water must be carefully supplied, but the soil should never be allowed to become destitute of moisture until the foliage has died. Not only does premature ripening affect the development of the pseudo-bulbs, but the giant flower spikes drain them for their support to a much greater extent than would have been the case had the roots been retained until they had completed their work. Upon close examination it will be found that the young growth that issues from two-year-old pseudo-bulbs, or even the tops of large pseudo-bulbs, emits roots very much sooner than those growths from large perfectly developed ones. The reason for this is not far to seek, for when the young growth has drained all the supply of food at command it is brought to a standstill, and the emission of roots is a necessity for its further development. In the first instance, the young growths from these pseudo-bulbs, or even small ones, appear equally as strong as from those of a much larger size, and although they form roots earlier for their own support, they never make such large pseudo-bulbs. Under these circumstances, if observations are rightly formed, it is of the utmost importance that every care be taken of the roots and foliage as long as possible in order to store up the requisite food for future use.

DENDROBIUMS.—What a marked difference there is between the flowering qualities of those that are thoroughly developed in their last stages and those that are prematurely brought to a standstill and ripened. Quick development and hasty ripening cannot be too strongly condemned. If the plants are to flower profusely, and have large well coloured blooms, they must be gradually developed under the influence of light, sunshine, and air if they are to flower from every alternate node along the stem of such varieties as *D. crassinode*, *D. Wardianum*, and others of similar growth and deciduous habits. Not unfrequently, when the growth has been made under the most suitable conditions and well matured afterwards, such varieties as those alluded to will commence to produce their flowers freely while the foliage is still green and fresh upon them, and before they are deciduous, flower buds will be visible from every joint. I do not believe in growing these plants and maturing them and then allowing them to flower without removal from a warm structure, for this would rob them of their season of rest, which would tell against them the following season. Their removal from a heated to a cool house should be gradual and in accordance with their stage of development. This can be accomplished even after the



whole of the flower buds are visible without the slightest injury. If allowed to remain in heat to flower they cannot be rested afterwards in a lower temperature, because they will have started into growth, and to check them then would be injurious. Large pseudo-bulbs are of very little use unless they are properly ripened, for they will not flower freely. Prematurely ripened pseudo-bulbs are very often injured by damp if the utmost care is not taken to prevent them when placed under cool treatment or when they are introduced into heat to start them. Some of these varieties are so floriferous in habit, that although they are badly ripened, they may produce a few flowers, but the majority of the buds that show frequently turn yellow and fail to come forward. This very rarely takes place in the flower buds of those that have been carefully and judiciously ripened.

Not only is thorough development in the last stages of importance towards securing healthy plants and abundance of flowers in deciduous varieties, but it is equally important for those of evergreen habit as well as *Oncidiums*, *Cattleyas*, and many others. However large and fine pseudo-bulbs may appear, they never yield such a gorgeous return as those of small size if thoroughly finished and ripened. Greater care is really necessary after the pseudo-bulbs have been formed than before, for upon the after treatment depends whether the plants flower well or poorly.

**STARTING DENDROBIUMS.**—Plants that have enjoyed a good season of rest of such varieties as *D. nobile*, *D. Bensoniæ*, *D. Devonianum*, *D. heterocarpum*, *D. Wardianum*, *D. primulinum*, *D. crystallinum*, and other early-flowering species of a similar habit of growth may be started by introducing them into an intermediate temperature. They should be allowed to start gradually, and as soon as they commence growing they may be arranged in the stove or suspended from the roof if grown on blocks or in baskets. It is unwise to remove these from cool quarters in which they have been resting to stove treatment, for they are excited too suddenly, and often the flower buds turn yellow and fail to develop. The moisture of the atmosphere will prove ample for them at first until they are removed to the stove and fairly on the move, and even then, if dewed once daily with tepid water, it will prove ample until after they have done flowering. They should, until the time they are fairly started into growth, or until their roots have fairly commenced activity, be watered on similar principles to those recommended for them when at rest.

The only water they really need at their roots is just sufficient to keep their pseudo-bulbs fresh and plump. It is a great mistake to soak them and keep them wet afterwards when first started into growth, for they are then sure to be unsatisfactory. If kept in a wet state the roots will perish and the growths will diminish in size. Water should be applied with very great care until the roots are in full action, when it is almost impossible to give them too much afterwards.—W. B.

**SHADING FOR ORCHIDS.**—A very simple but effectual means of shading Orchids is that adopted by Dr. Paterson at Fernfield, Bridge of Allan. To avoid the trouble and uncertainty of moveable blinds, which require a man in constant attendance to render them really serviceable, a permanent shading composed of the following ingredients is employed. A portion of white-lead is reduced to a proper thickness by adding turpentine, a little linseed oil and patent driers, which are well incorporated and applied like thin paint to the glass. While resisting ordinary showers for several months this mixture can be easily removed at any time, if necessary, with a little warm water. A great advantage is, that while breaking the force of the sun's rays sufficiently it does not cause a dense shade, and even in dull weather does not darken the house too much.—L.

### THOUGHTS ON CURRENT TOPICS.

WHEN I read Mr. Iggulden's interesting discussion with himself on the subject of trenching, on page 521, I could not help fancying that when he was writing he must have been at the same time wondering what I should think about his production when it appeared. I am not so vain as to class myself with the "more scientific and more experienced men," whom he anticipates may differ from him; but when he intimates he had better say nothing about the aëration of the subsoil or the disintegration of the ground, lest some of his "thinking" friends should take him to task I felt the force of his observation, though I could scarcely reconcile the fear expressed in that sentence with the boldness of utterance in the first paragraph. He commences with a "don't care" how far "more scientific and more experienced men" may be at variance with his ideas, he will yet express them, and then pretends to tremble lest he should start the ghost of a buried thought, which is nothing very formidable surely.

BUT perhaps, after all, your correspondent would like to know what

I think about his article. On the whole I consider it a very good one. It is both seasonable and useful. It may prevent a great waste of labour on the part of the earnest and industrious young men, who are very apt to bury what little good soil they may find on the surface of gardens so deeply that the crops may be half a year before they reach it; while, on the other hand, it affords a good excuse for those individuals who take no particular delight in using the spade in a thorough manner, but are content to scratch over the surface and call it digging.

THE man who finds a garden having a foot in depth of well-tilled fertile soil, and commences trenching with a vengeance by turning this down and placing a foot in depth of the sour excavated subsoil on the top of it for the crops to grow in, makes a great and costly mistake. This has been done. I have assisted to do it, and possibly Mr. Iggulden has, and if so he may well warn others against committing a similar error. I join with him in condemning such a practice as that, and agree where such a mistake has been made, that the very best and cheapest method of rectifying it is forthwith to trench the ground over again.

BUT while I am convinced that evil is done by trenching thoughtlessly and extravagantly, and that much land is made worse rather than better by the labour thus applied, I am equally convinced that still more might be rendered additionally productive by a system of trenching rightly conducted. I could give your correspondent the address of a gentleman whose garden has during the past summer yielded more and better produce than was obtained from it during the previous three years. It has been transformed by working it half as deep again as was previously the custom, and this in one season. Next year it will be worked still deeper, and be further improved beyond a doubt. In this case only 2 or 3 inches of the subsoil was brought up and mixed with the surface soil, not placed on the top, the lower stratum being broken and covered with vegetable refuse and manure.

WHEN land is alike good to a depth of 2 feet it will produce much more abundantly than if it were of the same quality to the depth of 1 foot only. It is quite true that the work of improving the soil downwards must be accomplished as it were by gradation; it is the steady systematic work of years, but it is work worth doing, as it pays its way, and when accomplished it is work well done. The most productive land in the country, and that which commands the highest rent, is where the soil is in every respect as good to the depth of 2 feet as the best that can be imagined but only half that depth.

I HAVE lately been inspecting some ornamental plantations or belts of trees surrounding an estate. The first planted are twenty years old, and the land was merely ploughed; others were added five years afterwards, the land being trenched. The trees in these far exceed in health and stature those of the former, and show conclusively and unmistakeably the value of deep culture. If the same plots had been cropped with vegetables the aggregate value of the produce during those years would have been far greater from the trenched than the untrenched portions. Of that, I think, there cannot be a doubt. I will go further, and venture a very strong opinion that if Apple trees had been planted instead of forest trees, and not been "improved" by injudicious pruning, those in the trenched land would be much better and more profitable now than those in the land that had not been deeply worked.

"DEEP root-action," says Mr. Iggulden, "is the ruin of 90 per cent. of the fruit trees planted." My thought on that dictum is this, that when trees are ruined by rooting deeply it is because they are in bad and not in good soil. And what drives them into the bad but the speedy deprivation of moisture and sustenance from the mere surface layer of good soil? "Mulch," I think I hear my advocate of a thin larder mutter. But 90 per cent. of the fruit trees planted cannot be adequately mulched over a series of years. Does your correspondent think that the best samples of fruit, I will not say at exhibitions, but offered for sale in markets, represent the produce of trees upon land only good to the depth of a foot or so? I do not. I know quite well, at least I think I do, that many trees under artificial treatment in gardens have too much root power, but that is because the gardener is always either nibbling or slashing at the top to keep them within prescribed limits. Trees that have to be crippled and distorted may easily have too large and rich a feeding ground; but, instead of these forming "90 per cent. of trees planted," they do not represent half of that number, I think, if we ask the nurserymen.

No doubt Mr. Iggulden knows very well what he is doing, and can grow crops as good as he desires in the garden in his charge without trenching the ground; but there are other gardens and different soils in which deep tillage is essential for the production of good crops, and especially in a season like the past; and there are other cultivators who do not dig half deep enough glad to be furnished with an excuse for their practice; but I would ask them to believe there is at least some truth in the old adage, "Dig deep to find the gold."

SOME highly interesting communications have recently appeared on the subject of mildew on Roses. Mr. Worthington Smith's illustrated contribution on page 479 has made the subject clearer than ever it was made before, inasmuch as he has shown the indestructibility of the *Oidium* spores or seeds of the parasite; and the practical deduction from that



information is to rake and sweep up all the Rose leaves possible and burn them, at least all those that fall from plants infested with mildew.

MESSRS. BARDNEY, DIVERS, and others have shown the great importance of free and healthy root-action with adequate support for the plants, as offering decided advantages against the attacks of the enemy. I have found that strong, free, and well-grown Roses with their growths thinly disposed, and the foliage consequently fully exposed to the sun, to be far less liable to become infested than weaker plants crowded with clusters of smaller shoots and flimsy leaves. The question of the texture of leaves in connection with this subject ought not, I think, to be quite overlooked. Not long ago I inspected some thousands of Roses in a nursery more or less white with mildew, but a few rows of Madame Clemence Joigneaux in the middle of the bed were spotless, except at the tips. The leaves of this strong-growing variety were quite leathery in texture, and I suspect on that account their resisting power was too great for the penetration of the fungus, just as the resisting power of thick and hard Vine leaves is too great for the red spider, which at the same time can and does feast on the young and tender laterals. Our object, therefore, it seems to me, should be to produce well-nurtured growths so thinly arranged that the leaves can develop the stoniest possible texture; then when mildew attacks the soft young leaves near the tips of the shoots towards autumn, we should shorten the shoots and remove the vulnerable parts. This I have done with advantage, and the wood has ripened the better and produced bolder lower buds.

THEN undoubtedly mildew is much more at home in some localities than in others. This is due to atmospheric influences not easily definable. Where the air is damp and still there the pest shows itself, and spreads with rapidity, but where the position is higher or breezy, Roses, if healthy, are comparatively little affected. I have seen some thousands of plants in a high and exposed position in the north of England with not a speck of mildew on them; but in a dell not a mile distant some Roses were white as a miller's hat. A full and free circulation of air is, in my experience, good for Roses and bad for mildew. If the plants are confined by close screens of any kind, or air is excluded by the overcrowding of their own growths, then the attacks of the enemy are the most successful, and we should act accordingly. Those are my thoughts on the mysterious mildew.

BEFORE closing my cogitations for the year, or entirely, I have two postcards to deal with that have reached me through the Editor. I ask that they be printed. They are slightly different in tone, and both, no doubt, creditable to the intelligence of the writers of them. Which is the more creditable is not for me to judge. That is a question for the jury. What I will call the Derby card, because posted there, says—"Stir up your correspondent for some more 'thoughts,' we like them here, for they set us a-thinking too." The Oxford card says—"Why can't your contributor leave out three parts of his twaddle in a column and a half, and go straight to the point as other writers, instead of going round Robin Hood's barn." I rather like this last one, but which is really the "correct card" cannot be determined by—A THINKER.

#### TRENCHING LAND.

I CONSIDER that Mr. Iggulden's advice upon trenching (page 521), is calculated to mislead young men. I have practised deep trenching during forty-five years, and my father did the same before me on the same old garden, the subsoil of which is good clay. Since 1850 it has been my practice to trench a portion two spits deep every year to plant with Strawberries, and to dig up the same after three years' crop of fruit. I have been over all the old garden with this crop, and some parts the second time. My method of planting is to have rows 2 feet 6 inches apart, and the plants 1 foot 6 inches apart, and just before the fruits ripen they are tied to stakes, clean straw being placed between to keep the fruit free from dirt, and I have had them by bushels. Fruit trees should certainly not be deep-rooted; but those who would grow Roses without deep trenching should pay Mr. B. R. Cant of Colchester a visit, and they will there see the result of trenching.

I have been a reader of this Journal since 1849, and have all the volumes bound. I have read with much interest particulars of the writings of Mr. D. Beaton and Mr. R. Fish. I am practical with the spade, and am never afraid to put it in deeply unless roots are to be spared. I do not approve of bringing all subsoil up, but a portion of it will sweeten old garden soil that has been liberally manured for years. Mulching is beneficial for many crops, and I have proved its value.—SAMUEL CHINERY, *Boxford*.

#### AUTUMN-FRUITING RASPBERRIES.

So many people have expressed surprise at our crop of autumn Raspberries this season that I am induced to offer a few remarks concerning them, not that I can say anything of their cultivation that is not already well known to most of your readers; but with the view of bringing to notice a most useful fruit that those who have not yet grown it may be induced to give it a place in their gardens. I feel sure they will be amply repaid for the space and attention required. The variety I grow is Belle de Fontenay, having found this the best of several tried. It is a strong grower, but most prolific, the fruit being large, of good colour and flavour.

Now is a good time to form a plantation, a west border being a suitable position, or a row may be planted across a quarter of the garden. It is not advisable to manure the ground too heavily for planting, or the growth will be too strong and less fruitful than canes of moderate size. Plant the canes 4 feet apart each way, and cut them down to within

3 inches of the soil. When growth commences, select two of the strongest suckers, which will be enough for the first year, and train them to stakes or trellises. They will commence flowering in August. The present is the time to apply the manure in the shape of a good surface mulching; it will assist the fruit to swell and the canes to keep on bearing until cut off by frost.

As soon as the fruit commences colouring protect it well from birds with netting; if a temporary framework is erected for this purpose it will also be found useful to stretch some canvas or hexagon netting across on the first appearance of frost, as, if the few first autumn frosts are warded off, the canes will continue fruiting a considerable time. We commenced gathering this year in the early part of September, and through October had daily gatherings both for dessert and tart, and they were much appreciated. The last day we gathered on the 23rd of November, when a sharp frost put an end to any further supplies. When the leaves have fallen cut the canes off close to the ground; next year the suckers will be abundant, but only three should be allowed to grow from each stool, all the others should be forked out, but do not dig between them or give any manure until the time above mentioned.—A. BARKER, *Hindlip*.

#### IN SCOTLAND.

IN most districts of Scotland the gardens of note are rather widely separated, and this is also the case at Crieff, for though there are three first-class establishments in its immediate vicinity—viz., Drummond Castle, Abercairny, and Ochertyre, they are each three to four miles from the town and in nearly opposite directions. Thus upon leaving Drummond a drive of about seven miles was necessitated to enable me to reach Abercairny, though this estate is little more than three miles east of Crieff, but the traveller by road is compelled to return to the town first, proceeding thence to this ancient and beautiful property. The journey on a fine day, is, however, a most enjoyable one, for in passing through the valley, which is really the outskirts of the extensive and charming Strathmore, we are surrounded by the most delightful scenery. The Vale of Strathmore is a fine tract of country extending from near Callendar to Forfarshire, bounded on the south by the Sidlaw and Ochil ranges of hills, and on the north by the Grampians and their offshoots. A large portion of this magnificent vale is very fertile and well cultivated in its more open portions, and elsewhere is densely wooded. So it is that the journey named as unavoidable proved a rather agreeable necessity, and brought into view some of the most characteristic of the Perthshire scenery. We were forcibly reminded of Sir Walter Scott's description of the district in which he observes, "The rivers find their way out of the mountainous region by the wildest leaps, and through the most romantic passes connecting the Highlands with the Lowlands." Above, the vegetation of a happier climate and soil is mingled with the magnificent characteristics of mountain scenery and woods; groves, and thickets in profusion clothe the base of the hills, ascend up the ravines, and mingle with the precipices. It is in such favoured regions that the traveller finds what the poet Gray, or someone else, has termed Beauty lying in the lap of Terror."

#### ABERCAIRNY.

The first impression produced by the appearance of this estate upon a visitor familiar with southern parks and gardens is its English-like character, which is the more remarkable when entering the policies from the lower road. Here we see an extensive dense bright green turf, with scattered but numerous old and well-developed trees, majestic adornments for a most noble and beautiful park, while on a nearer approach to the mansion some fine lakes impart that light and life which are so essential in a finished landscape. There is a gentle undulation of the general surface of the park sufficient to give all the charms of variety without any obtrusive boldness, and it is probably owing to this, combined with the richness of the vegetation, which reminded me so strongly of some estates in the south and west of England, and it was difficult to realise that the one under my notice was over 400 miles north of those with which I mentally compared it. Abercairny indeed well deserves high rank among the most handsome of Bonnie Scotland's estates; nor does its fame rest upon its beauty alone, for there is a long and interesting history connected with it that would require a volume to give in detail. From the earliest records it appears that an estate bearing this name was in existence in the twelfth century, being mentioned with the Earl of Strathearn's possessions, the Abbey of Inchaffray, and of which a few crumbling ruins are still to be seen in the district. From this ancient family the present owner, Charles Stirling Home Drummond Moray, Esq., is descended, and he can also claim relationship with some of the most noble families in Scotland, amongst whom may be named the Dukes of Athole and Buccleuch, Earl Bothwell, and others. Many members of the family have taken a prominent part in military affairs during their long occupation of the property, and in the seventeenth century the Morays gave their favour and assistance to the Stuarts. Of one of the lairds Dean Ramsay has related the following anecdote. "One of the lairds of Abercairny proposed to go out in '15 or '45. This was not with the will of his old serving man, who, when Abercairny was putting on his boots, overturned a kettle of boiling water upon his legs, so as to disable him from joining his friends, saying—'Tak' that; let them fecht wha like, stay ye at hame and be laird o' Abercairny.'"

Approaching the mansion from the south we obtain a similar view to that shown in the engraving (fig. 95), with a portion of the lake in the foreground and some of the fine Conifers and deciduous trees to the right



and left. The house is in the "florid Gothic" style, and was commenced in 1806 from designs by the noted Edinburgh architect, Mr. Crichton; the central tower, with some other improvements, are, however, of more recent date. The general appearance is massive and handsome, according well with its surroundings, and being situated on slightly elevated ground, forming a well-proportioned terrace, it commands an extensive prospect in the direction of the Ochils and the Turlum Hill. The home attractions, too, in the magnificent park of 800 acres, the well-kept flower garden, the rich arboretum, and the admirable kitchen garden are such as few estates can surpass, and whether to the horticulturist or the lover of Nature in general, Abercairny possesses an interest that proves its fame is well merited.

#### THE FLOWER GARDEN AND ARBORETUM.

To the north of the mansion the ground rises gently to considerably above the level on the opposite side, and this very suitable situation was chosen for the flower garden. It comprises twelve acres, and was laid out by Mr. Lewis Kennedy of London in 1812, the design being distin-

Perthshire it appears to thrive exceedingly well, growing strongly, yet preserving its variegation as clear as possible. In this state it is very beautiful, and it might be much more generally employed in the south than is the case at present. The *Pyrethrum*, too, colours well, and makes a very pretty marginal plant. The *Matricaria* flowers most profusely, and though having a tendency to become somewhat straggling, particularly when growing vigorously, its pure white neatly formed blooms are pretty and useful for cutting. Near the flower beds is a range of glass houses, which are devoted to miscellaneous plants, either to afford flowers for cutting or to be employed in table and room decoration, and the best use is made of the means at command for producing a good supply.

Turning to the arboretum we find ample to occupy our attention, for the collection includes a large number of the most handsome species of Conifers, mostly represented by fine examples, varying in age from twelve years to half a century. It is surprising how well the Conifers develop their characters and beauties in this district, for there are several species reputed tender or unsatisfactory in England, which at Abercairny and some other gardens in Perthshire not only grow but assume very hand-



FIG. 95.—ABERCAIRNY.

guished by a simple effectiveness that is far more pleasing than many more elaborate and correspondingly formal arrangements. The centre of the garden is traversed by a fine grass walk some hundreds of yards long and 30 feet wide, bounded on each side by large beds of luxuriant *Rhododendrons*, the hardy *Azaleas*, and numbers of other shrubs which are boldly grouped in large numbers. With this walk are connected several others of similar dimensions, the majority opening up pleasing vistas or bringing into prominence some of the finely developed Conifers which abound. The turf is dense, even, and excellently kept, imparting a most charming freshness to the appearance of the garden; and though there are special disadvantages attending walks of this kind, they seem more truly in accord with the character of a flower garden than the most carefully attended gravel walks can be. The flower beds are homely in design, and their occupants are homely also, but not the less effective or satisfactory on that account. Roses occupy a number of beds, and such plants as *Pentstemons*, *Petunias*, *Gladioli*, *Phloxes*, *Violas*, *Carnations*, *Calendula Meteor*, *Godetias*, especially *Duchess of Albemarle*, the double *Matricaria inodora*, *Perillas*, the variegated *Polemonium coeruleum*, and *Pyrethrum selaginoides* are largely and tastefully employed in masses, margined with one or two rows of dwarf plants. The *Polemonium* is a much-valued plant at Abercairny, and as in several establishments in

some proportions. The whole county, however, seems to be in some way particularly well suited to tree-life, for in the earliest ages it was, at least in the lowland region, covered with a dense forest, which proved impassable to the Romans, and an effectual protection for the natives. It has been suggested that one cause for this may be found in the form and position of the county giving a more Continental character to its climate; but there also appears to be something due to the soil, as climatal conditions alone would not produce the vigorous yet solid growth which distinguishes the Conifers and deciduous trees of the district. At Abercairny are handsome specimens of *Picea nobilis*, *P. cephalonica*, *P. grandis*, *P. Webbiana*, and *P. Nordmanniana*, *Abies Menziesi* in some cases exceeding 40 feet in height; *Abies Albertiana* about the same height; *Cupressus Lawsoniana*, 30 feet to 35 feet high, and numbers of others of slightly smaller dimensions, *Sciadopitys verticillata*, *Thuopsis dolabrata*, and *Cupressus nutkaensis* being very fine and abundant, some of the latter nearly 30 feet high and 12 feet in diameter at the base. The Silver Firs are, however, the grandest of all in size, for some reach the height of 60 to 70 feet, and beautifully proportioned. Such trees as these cannot be seen in many gardens, and in general beauty they are unsurpassed in the country. There is a number of these, together with other evergreen and deciduous trees bordering the remarkable grass walk named "Lady Fanny's Walk," which is seen



on the way to the kitchen garden. This walk is 45 feet wide, and about a mile and three-quarters long, nearly half the length very perfectly straight, and presenting a wonderfully fine vista of majestic trees. It is said to have been made under the direction of Lady Frances Montgomery in 1750, so that some of the trees are probably over 100 years old, and the majority appear to be still in their vigorous prime. In all directions are grand specimens of various kinds to be seen, but we must quit the arboretum and proceed to the

#### KITCHEN AND FRUIT GARDEN.

It may here be observed that the two departments, the flower and kitchen gardens, are kept quite distinct, being under different supervision. The latter is in the charge of Mr. James Brown, who has held that position for over thirty years, and the superintendence of the flower garden has during the past two years devolved upon his son, Mr. John C. Brown, who, from the careful training he has had with his father, appears likely to gain a similar degree of fame as an intelligent and practical gardener. In the kitchen garden, which is fully half a mile from the other department, Mr. James Brown has performed some excellent work, as his successes at the International and other large exhibitions in Scotland have abundantly proved, not only to his neighbours, but to noted exhibitors from the south, who have had on several occasions to confess themselves defeated in competition. During the present season, both at Dundee and Edinburgh, Mr. Brown was awarded premier honours in a keen competition for collections of vegetables—facts which speak for themselves. The garden is four acres in extent, enclosed by high walls, and the soil, though slightly inclined to be heavy, is good, and suits fruit trees and vegetable crops admirably, but as Mr. Brown significantly remarks, "weeds won't grow." The range of fruit houses is 300 feet long, lean-to, in seven divisions, which are devoted to Grapes, Peaches, and Figs. A central Peach house 45 feet long, 13 feet wide, and 17 feet high, is an old and interesting house, for it has been employed as an orchard house for eighty years, and is said to be one of the first of its kind in the country. Standard Peaches are planted out in the border in front of the path, and some of these are of considerable age, though still bearing large crops of fine fruits. On the back wall Peaches and Nectarines are trained, and yield abundant crops. In another house Peaches are trained on the walls, on vertical transverse trellises about 3 feet apart, and between these are trellises sloping to the front of the house, and extending about 3 or 4 feet up the vertical trellises, so that every portion that can be exposed to light is covered with fruit-bearing trees. The varieties of Peaches which are the greatest favourites at Abercainry are Royal George, Stirling Castle, Noblesse, Hale's Early, Grosse Mignonne, Bellegarde, and Walburton Admirable, individual fruits of the latter reaching 11 ozs. in weight, while those of 8 and 9 ozs. were quite numerous. The principal Nectarines are Pine Apple, which succeeds exceedingly well, bearing fine crops of handsome fruits; Pitmaston Orange, Elruge, Stanwick, and Murrey. Grapes are similarly well grown, Black Hamburg and Muscat of Alexandria receiving the chief attention, while Madresfield Court is becoming a favourite, and at the time of my visit was bearing some large and beautifully coloured bunches. Golden Champion, Lady Downe's, Gros Colman, and Mrs. Pearson are also successfully grown. Abercainry Seedling is well grown, and is considered by Mr. Brown as quite distinct from West's St. Peter's, with which it has been stated to be synonymous by Mr. A. F. Barron. It was raised by Mr. James Arnott over thirty years since, and has been regularly grown and fruited here since with the greatest satisfaction to the family. It is very late in finishing, and in September it was not sufficiently advanced for me to form a judgment concerning its characters, but it is described as distinct and richer in flavour than West's St. Peter's.

Outdoor fruits have not been quite so abundant as usual this season, but there was what many would have considered a highly satisfactory crop. That valuable Apple, Stirling Castle, was loaded with good fruits, as it was also in nearly every garden I visited, and Lord Suffield, Ecklinville, and King of the Pippins were scarcely less well cropped. Plum trees of the Victoria variety succeed extremely well at Abercainry as standards, and there are several handsome trees which had borne a splendid crop this season. Raspberries succeed well, making wonderful growths, some of the young canes being 8 or 9 feet high. Against the walls in suitable aspects Cherries and Apricots form an important portion of the fruit supply. Of the first the great favourite is Tradescant's Heart or St. Margaret, which is a fine late variety, bearing handsome purplish black fruits of excellent flavour. It is a constant and heavy-cropping variety, and can be gathered long after all the others have been exhausted, and in the middle of September it was somewhat surprising to see a Cherry tree loaded with fruits. Of the Apricots Hemskirk and Moorpark are the chief varieties, and it would gladden the heart of many a southern cultivator who struggles in vain to ensure the success of his Apricots to see them in this garden growing freely and vigorously, and bearing fruits as fine as those produced under glass in many establishments. For Red Currants Mr. Brown has obtained considerable note. He has a selection of his own bushes, which are trained to a wall, and being liberally treated at the roots they produce astonishingly large bunches and berries, such as have frequently created a sensation at horticultural shows in the north. The general kitchen crops are excellent, and the principles Mr. Brown works upon in his practice are deep and frequent digging with liberal supplies of manure. The results are seen in the most satisfactory clean growth, the uniform good culture rendering it an easy matter to select a collection of handsome specimens for exhibition.

My visit to Abercainry was a hurried one, and a very short period of time was at my disposal in which to inspect its attractions, but no horti-

culturist travelling in the district should miss it, for it undoubtedly deserves a place amongst the best kept establishments in Scotland.—LEWIS CASTLE.

#### NOTES ON CHRYSANTHEMUMS.

IN a recent issue of the Journal Mr. Murphy asks Is there a better reflexed flower than Mrs. Forsyth? I consider most of this section equal to that variety, and some certainly better. Does Mr. Murphy grow the Christines? If not he should do so. Dr. Sharp is another grand variety, also Felicity. Cloth of Gold is a fine yellow, while Crimson Velvet and Julia Lagravère are good for late work, and King of the Crimson should be in all collections. Lady Selborne could not be called anything but a Japanese variety. I consider this a fine variety. I have never seen it incline to the reflexed class, and as I have grown it the florets come quite twisted in the centre. I am inclined to think Mr. Murphy is not in possession of the true Elaine. I have grown and exhibited this fine variety for years, also in small pots for furnishing purposes, but have never found it come with a bad centre; in fact, I would prefer this to any other white variety. I am speaking of plants propagated in the spring. I have never tried old stools or plants placed in the ground and re-lifted. I should expect this system to produce the centres your correspondent speaks of.—J. PITHERS.

CHRYSANTHEMUMS MISS MARÉCHAUX AND MARY LIND.—I forward to-day by parcel post a bloom of this variety. I have been from home a few days, and in my absence I am afraid the best blooms have been cut; but the flower sent is a fair sample of the variety. It is fully a fortnight earlier this year than I have ever known it to be. It is usually at its best about Christmas and the New Year. I have grown it several years, and have found it one of the very best late whites, lasting a long time in perfection, and when well grown is, in my opinion, greatly superior to Princess Teck; but the habit and foliage are not nearly so good as that variety. I shall be glad to have your opinion of it from the bloom sent.

The small white Pompon I have grown many years under the name of Mary Lind, a name which I cannot find in any list of the present time, but under which name it appeared in the trade lists of twelve or fourteen years ago. I consider it well worth growing as a late bloomer.

I also send you some late blooms of Père Delaux, which strikes me as being very useful and bright as a late decorative variety.—GEORGE HEMMING, *Allerton Hall, Gledhow, Leeds.*

[The bloom of Miss Maréchaux deserves all that is said about it, being of good substance, very pure and beautifully incurved. The variety named Mary Lind is also a beautiful Pompon, white, with a very slight tinge of lilac in the outer florets, and much resembling Snowdrop in the form and build of the bloom, but larger than that variety.]

CHRYSANTHEMUM ELAINE.—In reply to Mr. Murphy's inquiry, if there is a variety of Elaine which shows no centre, I may say that I have grown two plants the present season with very fine blooms (from the terminal buds), one of which measured fully 16 inches in circumference, and was completely filled in the centre. My plants remained outdoors until the flowers began to expand in October.

In regard to Mr. Murphy's other inquiries, I have no experience of the varieties mentioned.—A. SALES, *Hampstead.*

#### DIGGING AMONGST FRUIT BUSHES.

THE season is again here when all who think that their fruit bushes require manure will begin applying this by forking or digging it in about the roots. In my opinion there is no fruit-bearing tree or bush that are not greatly injured in applying manure to them. It would be very well if the soil were simply top-dressed by having the manure spread on the surface without attempting to dig or fork it in, but it is quite impossible to use the spade or the fork amongst or near the roots without cutting or breaking many of the most useful young rootlets. When Gooseberries and Currants grow in rows with 6 feet or 8 feet of space between them, this is generally manured, and then every particle of the surface is dug. It is right to spread on the manure, and digging may be done too, but only in the centres of the spaces, where probably some rows of vegetables may be grown in summer; but for at least 2 feet all round the stem, or more than that if possible, a fork or spade should on no account be used. The same remarks apply to Raspberries, and when we come to Apples, Pears, and Plums, it is still more necessary to avoid disturbing the surface at any time.

It is generally admitted that the nearer the roots of fruit trees are to the surface, and the more numerous they are there the better will the trees and crops succeed, but to fork and break the surface up is entirely opposite to securing this desirable condition. We have noticed for many years that our heaviest and best crops of Apples and Pears are annually produced on our old orchard trees where the grass has not been broken up over the roots for many years; but we cannot say the same of some of our trees in the kitchen garden, where, owing to their being situated on the vegetable borders, we are obliged to dig nearer sometimes than is beneficial. Surface dressings of good manure will benefit all fruit-bearing trees, especially those which have been growing in the same quarters for a number of years, and it may be applied as soon as the pruning has been done in winter. If it be put on to the depth of 4 inches or so, and to extend as far as it is thought the feeders are to be found in



any great numbers, the advantages will soon become visible in the robust character of the trees or bushes and the excellency and quantity of the fruit; but when it is forked in and an annual breaking off the surface roots takes place, no improvement need be expected, nor will any occur. Young bushes and old ones are alike in this respect, and when it is really necessary to renew the surface of side soil it should be done thoroughly and in such a way as nothing of the kind need be done again for a number of years. Where bushes and trees are in a thoroughly satisfactory state we would leave them alone, and neither fork or top-dress them until a stimulant is wanted, when the latter only would be added.—K. G.

### EXHIBITION CHRYSANTHEMUMS.

DURING the past month or two the queen of winter flowers has been having the lion's share of attention, and I am quite sure no one will grudge the many praises which have been bestowed upon so beautiful a flower. Our greenhouses and conservatories would be very dull during the early part of winter were we to be deprived of the Chrysanthemum. The diversity of colours from the snowy white to the deepest crimson, with the innumerable shades between, render them most suitably adapted for embellishing and decorating the conservatory, or for using in a cut state for filling vases, for which purpose they are invaluable, as they remain a long time fresh if properly cared for. So varied are the forms of the flowers, the graceful Japanese, the strict symmetrical forms of the incurved sorts, not to mention many others to be had in the reflexed, the Anemone, and Pompon classes, that the most fastidious will be able to find amongst the many forms some that will please the fancy. My intention at present is not to enter into any cultural details, but merely to help those who may be about to commence the cultivation of this really beautiful and useful flower by giving a list of the best varieties which are grown at present. I have carefully examined the prize lists of several of the principal shows that have been held during the past season, and have selected the varieties which have been most times included in the winning stands in their several classes.

#### JAPANESE.

Madame C. Audiguier ..	19	Elaine ..	8
J. Delaux (F. A. Davis) ..	16	Hiver Fleuri ..	8
Thunberg ..	15	Boule d'Or ..	8
Baronne de Prailly ..	15	Triomphe de la Rue des Châtelets ..	8
Meg Merrilees ..	12	Album Plenum ..	7
Fair Maid of Guernsey ..	11	Fanny Boucharlat ..	7
Criterion ..	11	Japonaise ..	6
Peter the Great ..	10	Mlle. Lacroix ..	6
Comte de Germiny ..	9	M. Desbrieux ..	6
Mons. Ardène ..	9	Grandiflorum ..	5

#### INCURVED.

Empress of India ..	20	Hero of Stoke Newington ..	11
Princess of Wales ..	18	Jeanne d'Arc ..	10
Golden Empress ..	16	Lady Hardinge ..	10
Barbara ..	16	Refulgence ..	8
Queen of England ..	16	Princess Beatrice ..	8
Princess of Teck ..	14	Emily Dale ..	8
Lord Wolsley ..	13	Prince Alfred ..	8
Mrs. Heale ..	12	Jardin des Plantes ..	7
Lord Alcester ..	12	Prince of Wales ..	7
John Salter ..	11	Mrs. G. Rundle ..	7

#### ANEMONE.

Mlle. Cabrol ..	6	Georges Sand ..	4
Fleur de Marie ..	6	Mrs. Pethers ..	4
Gluck ..	5	Sœur Dorothée Souille ..	3
Lady Margaret ..	4	Empress ..	3
Fabias de Maderanaz ..	4	King of Anemones ..	3

#### REFLEXED.

King of Crimsons ..	6	Cloth of Gold ..	4
Golden Christine ..	6	Peach Christine ..	4
Dr. Sharp ..	5	Phidias ..	3

#### POMPONS.

St. Michael	Mlle. Marthe
Rosinanto	Cedo Nulli
Eldorado	Snowdrop

#### SPECIMEN PLANTS.

Mrs. Dixon ..	12	Geo. Glenny ..	6
Mrs. G. Rundle ..	10	St. Michael ..	5
Peter the Great ..	7	Dr. Sharp ..	5

—CALEDONIAN.

### ROYAL METEOROLOGICAL SOCIETY.

THE usual monthly meeting of this Society was held on Wednesday evening, the 17th inst., at the Institution of Civil Engineers, Mr. R. H. Scott, F.R.S., President, in the chair.

Mr. C. H. Cotton, Mr. S. A. Jolly, L.R.C.P., and Rev. C. J. Taylor, M.A., were elected Fellows of the Society.

The following papers were read:—

(1) "On the Reduction of Temperature Means from Short Series of Observations to the Equivalents of Longer Periods," by Dr. Julius, Hon. Mem. R.Met.Soc. The author has recently carried out an investigation into the climate of the Alpine districts of Austria, and in doing so he has endeavoured to reduce the monthly and annual means of all the temperature observations from the districts in question during the interval from 1848 to 1880, and in some places to 1884, to the mean for the thirty years' period 1851 to 1880. In this paper Dr. Hann describes the methods he adopted to reduce observations at mountain stations for short periods to the equivalents of longer periods.

(2) "The Diversity of Scales for Registering the Force of Wind," by Charles Harding, F.R.Met.Soc. The object of this paper is to call attention to the confusion that exists in the systems in use by various countries for

registering wind force, whether instrumentally or otherwise, and to show the need of action for improvement.

(3) "Report on the Phenological Observations for the year 1884," by the Rev. T. A. Preston, M.A., F.R.Met.Soc. The salient features of the weather during the period embraced in this report—viz., October, 1883, to September, 1884, were: The mild winter, the cold April, the hot August, and the long period of drought, which at the end of September began to be seriously felt. The general effects on vegetation have been the prolonged existence of many of the autumn species; the great loss of wall fruit; the failure of bush fruits: the plentiful supply of Strawberries as long as they lasted, but the time was short; the good hay harvest, although it was light in quantity; the good corn crop; the unusually plentiful Potato crop; and the great abundance of wild fruits.

### NOTES FOR WINTER UNDER GLASS.

WE have now reached that season of the year when the greatest difficulty is experienced in managing plants growing in glass structures. Much of that difficulty arises from having improperly constructed houses. or in turning houses that may be suitable enough for certain purposes at other seasons into plant houses during the winter months. The great demands made on gardeners now cause them to try, by every means, to keep ahead of current wants, and from this system of crowding during winter, much that is annoying is continually arising. One of the worst types of houses to keep gay with flowers, from this time onwards, are high flat-roofed greenhouses, with ends to the north and south; and when the woodwork is close placed and heavy we have the type in an aggravated form. Pelargoniums, Roses, Carnations, Primulas, Cinerarias, cannot be kept in good condition for long. The most suitable plants, and these require a little heat almost constantly, are Callas, Azalea narcissiflora, Lily of the Valley, late Chrysanthemums, Eupatoriums, Camellias, Coronilla glauca, and winter Heaths in variety. Hyacinths and Narcissus do very well in such structures, but Tulips do not last long, while Cypripedium insigne does remarkably well. Those plants named above as absolutely unsuited I find do much better in flat-roofed pits, where they can be kept within a few inches of the glass. Pelargoniums succeed perfectly well in common frames, provided they are dry and heated with a flow and return pipe to keep the plants growing, for that really is the secret of success with such plants. If Pelargoniums, Roses, Carnations, Bouvardias, and other plants of the same continuous-flowering habit are kept in a growing state, there is not the slightest fear that they will not bloom throughout the winter and spring—this is a fact worth bearing in mind. The essential condition, besides a sufficient amount of heat, is that they be kept near to the glass. I have seen the most striking difference made in the health of growing plants at this season by merely raising them a few inches.

Another point is to keep the roots in as moist a condition as during the summer months. Many err in this matter, thinking that plants as a whole are better to be kept on the dry side. However, in the case of plants which are both growing and flowering, sufficient water to keep the roots in a state of activity is absolutely necessary to continued good results. In the case of Primulas to flower in spring, the difference between plants kept in a moist condition at the roots and in a warm temperature and those kept cool and dry, will be of the most marked nature. It is also well to guard against using any other than small pots for the size of plants. This is a good practice for any season; but for plants growing during the winter it is of the first importance. Occasional applications of liquid manure must not be neglected either. The stock plants required for the summer flower garden are mostly kept in any kind of position into which other plants would never be placed, and as a result in any cold damp weather throughout the winter they die in numbers. This system is a mistake. Even Pelargoniums which, if kept dry enough, pass the winter safely, are all the better for being allowed a good position, and to be always growing. Lobelias, Verbenas, and Iresines should always be kept growing. Few plants are required to supply stock when they are growing without check throughout the winter.

With regard to plants grown in cold frames—such, for instance, as Carnations, Pentstemons, Auriculas, Violas, Pansies, and Calceolarias—the best system is to keep the sashes off in weather which is not wet or frosty. In damp weather and in frost it is safe to keep the sashes closed. In continued frosty weather it is much better to keep the sashes closed and the mats on until the frost has gone. There is no advantage to be gained even when the days are clear and sunny, with nights frosty, in removing the coverings. If the enclosed air is cold no growth will be made, and where no growth is made the plants do not suffer from semi-darkness. Unless with special plants, such as Auriculas, which we keep dry in order to check premature growth, I like plants in cold frames to be kept moist at the roots. In the case of those in pots this is best managed by plunging the pots over the rims in coal ashes, and if the soil is moist in the beginning of winter no watering will be required before the middle of February. Calceolarias, of which cuttings were inserted in the end of October, or even a fortnight later, will now be rooted if they have been kept moist enough, and from this time the sashes should be kept entirely off the frames, unless when it rains or snows, or when keen frost sets in. The result of such treatment will be that at the beginning of April the plants, if once pinched, will be short and sturdy, well rooted, and well fitted to be transplanted into their permanent quarters. By the above treatment only can certain success with these old-fashioned flowers be ensured.

As regards the routine management of stove houses, it may be accepted as a safe plan to do with as little fire heat as possible during the winter. I would much rather have a 55° night temperature with mildly heated



pipes than one, 5° or 10° higher with the pipes hot. I do not object to the higher temperatures, but when the only way of securing them is accompanied by a drying heat that necessitates an almost unlimited supply of moisture to counteract the bad effects that would inevitably follow, then I prefer a lower temperature and a drier condition of the air. It would be well to remember that the cooler stove houses and Orchid houses are kept during winter the less moisture is required. The water spilt in supplying water to the plants and in washing the pathways is all we find it necessary to give. Too much moisture in a low winter temperature is certain destruction to many plants which do perfectly well in a low stove temperature if kept in a rather dry atmosphere. Cold dry temperatures are best suited for the ripening or resting of many Orchids, such as *Dendrobiums*, some *Cypripediums*, *Odontoglossums*, *Aerides*, and many others. They flower so much more freely and grow stronger after passing a term of treatment as above. Orchids resting in a low temperature require absolutely no water at their root. If growing in a moderately low one they require water as necessary, but do better without it in the atmosphere; and the same applies to most forced or growing plants—that is, a sufficiency at root and little in the air.—B.

### CHRISTMAS BERRIES.

At present I do not intend writing exhaustive notes on the cultivation of the different plants which produce berries at Christmas, but just now, when so many householders in the country are buying evergreens, more especially those bearing berries, for decorative purposes, I would like to call their attention to the desirability of every garden owner growing some of their own. There are innumerable gardens where bushes and trees are grown, but as a rule very few of them are berry-producing. Laurels form about three parts of all the bushes grown in small gardens, and in many large gardens they are far too common. Choice plants ought to take half their places, and berry-bearing plants should be generally and largely introduced. As a rule, they are all ornamental in appearance when only in leaf, and they are doubly so when in fruit.

Amongst the Hollies there are some of the most beautiful decorative plants anyone could wish to see. Indeed, as a class they are most valuable, and if those who plant Laurels and common forest trees so extensively in their pleasure grounds and small gardens could only be induced to deal more with the Hollies, they would improve the general appearance of their gardens, and stand a good chance of securing abundance of fine berries at Christmas time.

The *Arbutus Unedo* near the sea and in mild climates and districts are a most valuable addition to berry trees. The fine clusters of fruit resemble small ripe Strawberries, and are very charming. The *Aucubas* are also grand, but in nine cases out of every ten only the female variety is planted, which never fruits; but when a few male plants are introduced, most beautiful clusters of berries will be produced. The variegated leaves and large red berries are almost unique for Christmas decorations. The Sweet Bay produces quantities of very dark conical berries, which generally remain on until Christmas, and make a good addition to the others. When the *Mahonia Aquifolia* holds its fruit until this time it is a capital shrub, but birds and game are very fond of the fruit, and devour it greedily. As wall and creeping berried plants *Cotoneasters* should be planted. They are pretty evergreens, and covered with red berries at this time. *C. microphylla* is the small-berried one. *C. Simondsii* is much larger, but not so free in fruiting.

Everything considered, there is no berried evergreen so useful at Christmas as the Holly, and when a few varieties are planted they fruit very constantly as a rule. I daresay many garden owners will not quite understand why they should have so many bushes and have no berries, and probably they may be buying these when their place is overrun with evergreens, and it is this we contend might be rectified by planting the proper varieties of evergreens. Laurels may often be bought by the dozen cheaper than Holly plants singly, but it is only at the beginning that anything like a saving is manifest, and then it is a delusion, as a fine Holly tree with berries or without them is of more value ornamentally than a mass of Laurels and other cheap bushes.

Then there is the Mistletoe. How very few gardens there are in which this is to be found growing. The impression seems to be that it will not grow everywhere, but has it ever been tried? In many nurseries Apple trees may be bought with the Mistletoe growing on them, and by planting a few of these, all may have the pleasure of seeing this curious parasite growing, and it will soon become of use where, as just now, many may be paying as much every Christmas for Mistletoe as would buy the Apple tree and it combined.—J. MUIR, *Margam*.

### REVIEW OF BOOK.

*Plant Lore, Legends, and Lyrics.* By RICHARD FOLKARD, jun. London: Sampson, Low & Co., 188, Fleet Street. 1884.

In a work of over 600 closely printed pages Mr. Folkard has given us a very full account of all the legends and popular history connected with plants. No less than eighty old and modern works have been carefully searched for all matters bearing on the subject, and the old herbalists have especially been made to contribute largely to the multitudinous "Myths, traditions, and superstitions" contained in this volume. It is a most interesting compilation, and the author has performed his task in a satisfactory and thorough manner, considering the number and varied character of the sources from which he derived his materials.

It is in two parts, the first comprising sixteen chapters of 200 pages, in which the plants are referred to under the particular customs or persons with which they have been associated. Examples of these are "Floral Ceremonies," "Plants of the Fairies," "Plants of the Devil," "Magical Plants," &c. In the second part, which includes 400 pages, the plants are arranged alphabetically under their popular or local names. One

part is therefore necessarily to a great extent a repetition of the other, but a full index removes any difficulty that might arise from this method of arrangement. The headlines and titles of the chapters are in antique type, and the majority of the illustrations are exact reproductions of those given in Parkinson's and Gerard's "Herbals" and other old works of a similar character; but the body of the work is in good clear Roman type, both paper and general finish being excellent.

Much care has evidently been exercised to render the book as accurate as possible, but although a considerable list of errata is given, several have escaped notice, particularly in the names of plants. For instance, we find the Box described as *Buxas semperviva*, Canterbury Bells as *Campanula Trachelium*, the Scotch Bluebell as *Campanula lalifolia*, and the Greater Celandine as *Chelidonium major* (majus). *Polypodium Barometz* should be *Cibotium Barometz*; "*Polypodium dicotomon*" is corrected in the errata to "*P. dichotomon*," neither being correct, as it was figured by Thunberg under the name of *P. dichotomum*, and is now known as *Gleichenia dichotoma*. In the alphabetical list, as already mentioned, the popular name is given first, and then in some cases the botanical name follows; in numbers of instances, however, this is unfortunately omitted. Some very strange local names are also introduced without the slightest indication as to what plants are referred to, such as "Avaka, an Indian aquatic plant," "Chohobba," "Kounalnitza," and many others of a similar character. With these few exceptions the work has been carefully revised, and it will undoubtedly find a place upon the bookshelves of numbers of plant-lovers.

As an example of the style adopted in the first part of the book, the following extract will suffice:—

"FLORAL CEREMONIES, WREATHS, AND GARLANDS.—The application of flowers and plants to ceremonial purposes is of the highest antiquity. From the earliest periods, man, after he had discovered

'What drops the Myrrh and what the balmy Reed,'

offered up on primitive altars, as incense to the Deity, the choicest and most fragrant woods, the aromatic gums from trees, and the subtle essences he obtained from flowers. In the odorous but intoxicating fumes which slowly ascended, in wreaths heavy with fragrance, from the altar the pious ancients saw the mystic agency by which their prayers would be wafted from earth to the abodes of the gods; and so, says Mr. Rimmel, 'the altars of Zoroaster and of Confucius, the temples of Memphis, and those of Jerusalem, all smoked alike with incense and sweet-scented woods.' Nor was the admiration and use of vegetable productions confined to the inhabitants of the Old World alone, for the Mexicans, according to the Abbé Clavigero, have from time immemorial studied the cultivation of flowers and odoriferous plants, which they employed in the worship of their gods.

"But the use of flowers and odorous shrubs was not long confined by the ancients to their sacred rites; they soon began to consider them as essential to their domestic life. Thus the Egyptians, though they offered the finest fruit and the finest flowers to the gods, and employed perfumes at all their sacred festivals, as well as at their daily oblations, were lavish in the use of flowers at their private entertainments and in all circumstances of their everyday life. At a reception given by an Egyptian noble, it was customary, after the ceremony of anointing, for each guest to be presented with a Lotus flower when entering the saloon, and this flower the guest continued to hold in his hand. Servants brought necklaces of flowers composed chiefly of the Lotus; a garland was put round the head, and a single Lotus bud or a full-blown flower was so attached as to hang over the forehead. Many of them, made up into wreaths and devices, were suspended upon stands placed in the rooms, garlands of Crocus and Saffron encircled the wine cups, and over and under the tables were strewn various flowers. Diodorus informs us that when the Egyptians approached the place of Divine worship they held the flower of the *Agrostis* in their hand, intimating that man proceeded from a well-watered land, and that he required a moist rather than a dry aliment; and it is not improbable that the reason of the great preference given to the Lotus on these occasions was derived from the same notion.

"This fondness of the ancients for flowers was carried to such an extent as to become almost a vice. When Antony supped with Cleopatra, the luxurious queen of Egypt, the floors of the apartments were usually covered with fragrant flowers. When Sardanapalus, the last of the Assyrian monarchs, was driven to dire extremity by the rapid approach of the conqueror, he chose the death of an eastern voluptuary; causing a pile of fragrant woods to be lighted, and placing himself on it with his wives and treasures, he soon became insensible, and was suffocated by the aromatic smoke. When Antiochus Epiphanes, the Syrian king, held high festival at Daphne, in one of the processions which took place boys bore frankincense, myrrh, and saffron on golden dishes, two hundred women sprinkled everyone with perfumes out of golden watering pots, and all who entered the gymnasium to witness the games were anointed with some perfume contained in fifteen gold dishes, holding Saffron, Amaranthus, Lilies, Cinnamon, Spikenard, Fenugreek, &c. When the Roman emperor Nero sat at banquet in his golden palace a shower of flowers and perfumes fell upon him; but Heriogabalus turned these floral luxuries into veritable curses, for it was one of the pleasures of this inhuman being to smother his courtiers with flowers.

"Both Greeks and Romans carried the delicate refinement of the taste for flowers and perfumes to the greatest excess in their costly entertainments; and it is the opinion of Baccius that at their desserts the number of their flowers far exceeded that of their fruits. The odour of flowers was deemed potent to arouse the fainting appetite, and their presence was rightly thought to enhance the enjoyment of the guests at their banqueting boards."

From the second part we extract the following, which, besides indicating the style, are also of seasonable interest:—

### CHRISTMAS PLANTS.

"HOLLY.—The Holly or Holme (*Ilex aquifolium*) derives its name from the Anglo-Saxon *Holegn*, whilst another ancient designation, Hulver, or, as



Chaucer wrote it, Hulfeere, has been taken from the old Norse *Hulfr*. From the use made of its branches in decorating churches at Christmas time the monks, by an easy corruption, bestowed on the Holly the designation of the Holy Tree. The disciples of Zoroaster, or Fire Worshipers, believe that the Holly tree casts no shadow, and both in Persia and India they employ an infusion of its leaves for several purposes connected with their religious observances. They also sprinkle the face of a newly horn child with water impregnated with Holly bark. Pliny states that if the Holly, or Hulver tree, be planted about a house it will keep away all malign spells and enchantments and defend the house from lightning. He also, among other marvels, relates that the flowers of the Holly would freeze water and would repel poison, and that if a staff of its wood were thrown to any animal, even if it did not touch him, it would so influence the animal as to cause him to lie down beside it. The custom of decorating houses and churches with Holly at Christmas is probably derived from the Romans, who were wont to send boughs to their friends during the festival of the Saturnalia, which occurred about the same period, and the Oaks being then bare of leaves the priests obliged the people to bring in boughs of Holly and evergreens. There is little doubt that the early Roman Christians, disregarding the Church's interdiction, introduced the heathen practice of decorating their houses with Holly, and in course of time connected it with their own faith. There is an old English superstition that elves and fairies join the social gatherings at Christmas, and this led to branches being hung up in hall and bower in order that the fays might 'hang in each leaf and cling on every hough during that sacred time when spirits have no power to harm.' This evergreen 'Christmas' should be taken down on Candlemas eve. Herrick says:—

'Down with the Holly and Ivy all,  
Wherewith ye deck the Christmas hall;  
So that the superstitious find  
No one least branch there left behind;  
For look how many leaves there be  
Neglected there—maids 'tend to me—  
So many goblins ye shall see.'

"De Gubernatis tells us that in certain parts of France, in Switzerland, at Bologna, and in other continental countries, there is an old custom extant of cutting branches of Holly on Christmas eve, and hanging them in houses and stables in the hope of driving away evil spirits and witchcraft. As the Holly leaf is prickly it repulses and drives away enemies. Witches are reputed to detest Holly; in its name they see but another form of the word 'holy,' and its thorny foliage and blood-red berries are suggestive of the most Christian associations. In Northumberland Holly is employed in a form of divination. There the prickly variety is called He-Holly, and the smooth She-Holly. It is the leaves of the latter only that are deemed proper for divining purposes. These smooth leaves must be plucked late on a Friday by persons careful to preserve an unbroken silence from the time they go out to the dawn of the following morn. The leaves must be collected in a three-cornered handkerchief, and on being brought home nine of them must be selected, tied with nine knots into the handkerchief, and placed beneath the pillow; then, sleep being obtained, dreams worthy of all credit will attend this rite. In another form of divination a maiden places three pails of water on her bedroom floor, then pins to her nightdress opposite her heart three leaves of green Holly, and so retires to rest. She will be aroused from her first sleep by three terrible yells, followed by three horse laughs, after which the form of her future husband will appear. If he is deeply attached to her he will change the position of the water pails; if not, he will glide from the room without touching them. This spell is only effectual when performed on All Hallowe'en, Christmas eve, New Year's eve, and Beltane, or Midsummer eve."

"MISTLETOE.—According to Scandinavian mythology, Baldr (the Apollo of the North) was rendered by his mother Frigg proof against all injury by the four elements, fire, air, earth, and water. Loki, the evil spirit, however, being at enmity with him, fashioned an arrow out of Mistletoe (which proceeded from neither of the elements), and placed it in the hand of Hödr, the blind deity, who launched the fatal dart at Baldr, and struck him to the earth. The gods decided to restore Baldr to life, and as a reparation for his injury the Mistletoe was dedicated to his mother Frigg; whilst, to prevent its being again used adversely to her, the plant was placed under her sole control so long as it did not touch the earth, the empire of Loki. On this account it has always been customary to suspend Mistletoe from ceilings; and so, whenever persons of opposite sexes pass under it they give one another the kiss of peace and love, in the full assurance that this plant is no longer an instrument of mischief. Like the Indian Asvattha and the northern Rowan, the Mistletoe was supposed to be the embodiment of lightning; hence its Swiss name, *Donnerbesen*, and like them, again, it is very generally believed to spring from seed deposited by birds on trees. Some naturalists, indeed, say that the seeds will not vegetate until they have passed through the stomach of a bird, and so recommend that fowls should be caused to eat the seeds, which, after evacuation, should be sown. This old belief in the Mistletoe seed being sown by birds is referred to by Lord Bacon in his 'Natural History.' His lordship says, 'They have an idle tradition that there is a bird called a Missel-bird that feedeth upon a seed which many times she cannot digest, and so expelleth it whole with her excrement, which, falling upon a bough of a tree that hath some rift, putteth forth the Misseltoe.'

"In Druidic times the Mistletoe was regarded as a Divine gift of peculiar sanctity, only to be gathered with befitting ceremonies, on the sixth day, or at latest on the sixth night, of the sixth moon after the winter solstice, when their year commenced. Pliny tells us that 'the Druids hold nothing more sacred than the Mistletoe and the tree upon which it is produced, provided it be an Oak. They make choice of groves of Oak on their own account, nor do they perform any of their sacred rites without the leaves of these trees, so one may suppose that for this reason they are called by the Greek etymology Druids, and whatever Mistletoe grows upon the Oak they think is sent from heaven, and is a sign of God Himself as having chosen that tree. This, however, is rarely found, but when discovered is treated with great ceremony. They call it by a name which in their language signifies the curer of all ills, and, having duly prepared their feasts and sacrifices under the tree, they bring to it two white bulls, whose

horns are then for the first time tied; the priest, dressed in a white robe, ascends the tree, and with a golden pruning hook cuts off the Mistletoe, which is received into a white *sagum* or sheet; then they sacrifice the victims, praying that God would bless His own gift to those on whom He had bestowed it.' As the Druids attributed to the Mistletoe marvellous curative properties they placed it in water, and distributed this water to those who deserved it, to act as a charm against the spells of witches and sorcerers. If any portion of this plant came in contact with the earth it was considered as ominous of some impending national disaster.

"The practice of decorating dwellings with Mistletoe and Holly is undoubtedly of Druidic origin. Dr. Chandler states that in the times of the Druids the houses were decked with boughs in order that the spirits of the forest might seek shelter among them during the bleak winds and frosts of winter. Among the Worcestershire farmers there is a very ancient custom of taking a hough of Mistletoe and presenting it to the cow that first calved after New Year's day, as this offering is presumed to avert ill-luck from the dairy. In some provinces of France they preserved for a long period the custom of gathering the Mistletoe of the Oak, which they regarded as a talisman. Many public documents attest that in the fifteenth and sixteenth centuries large gatherings of the country people took place at the fêtes held in commemoration of the ceremony of the sacred Mistletoe, and which was called *Auguilanneuf* (*Gui de l'an neuf*). In Holstein the peasantry call the Mistletoe the 'Spectre's Wand,' from the supposition that a branch borne in the hand will enable the holder not only to see ghosts but to compel them to speak.

"The magical properties of the Mistletoe are alluded to by Virgil in his 'Æneid,' as well as by Ovid and other ancient writers. Albertus Magnus states that the Mistletoe, which the Chaldeans called *Luperox*, the Greeks *Esifena*, and the Latins *Viscus Querci*, like the herb *Martagon* (Moonwort) possessed the property of opening all locks. The Druids called it *All-heal*, and represented it as an antidote to all poisons and a cure for all diseases. When there were no longer any Druids in England left to gather the holy plant with the customary sacred rites, it was gathered by the people themselves with a lack of due solemnity, so that, according to Auhrey, this want of reverence met with miraculous punishment. He relates how some ill-advised folk cut the Mistletoe from an Oak at Norwood to sell to the London apothecaries: 'And one fell lame shortly after; soon after each of the others lost an eye; and a rash fellow who ventured to fell the Oak itself, broke his leg very shortly afterwards.' At this time the powder of an Oak Mistletoe was deemed an infallible cure for epilepsy; and Culpeper, the astrological herbalist, prescribed the leaves and berries of this precious plant, given in powder for forty days together, as a sure panacea for apoplexy, palsy, and falling sickness. Clusius affirmed that a sprig of the sacred plant worn round the neck was a talisman against witchcraft, always providing that the hough had not been allowed to touch earth after being gathered. In the west of England there is a tradition that the cross was made of Mistletoe, which until the time of the Crucifixion had been a noble forest tree, but was thenceforth condemned to exist only as a mere parasite. Culpeper remarks that it was sometimes called *lignum sanctæ crucis*—wood of the holy cross—from a belief in its curative virtues in cases of consumption, apoplexy, and palsy—'not only to be inwardly taken but to be hung at their neck.' In Sweden Oak Mistletoe is suspended in the house to protect it from fire and other injuries; a knife with an Oak Mistletoe handle is supposed by the Swedes to ward off the falling sickness; for other complaints a piece of this plant is hung round the patient's neck or made into a finger ring."

#### MYRSIPHYLLUM ASPARAGOIDES.

It appears that this old-fashioned plant is much better known and appreciated in the United States of America than it is on this side of the Atlantic, though if I am rightly informed it is there frequently incorrectly termed a *Smilax*. In America it is most extensively grown for dinner-table decoration, principally in a cut state, and rarely fails to delight those visitors who have been more accustomed to the elaborate, and as it often happens, much too heavy style of table decoration practised in this country. Being always on the look-out for novelty in the way of dinner-table decoration, the description I received of the *Smilax* induced me to procure both plants and seeds from America, though, as it happens, I need not have gone out of this district for plants. However, the fact of both plants and seeds coming from the same quarter, one correctly and the other incorrectly named, satisfied us we were growing the right thing, this being none other than *Myrsiphyllum asparagoides*, and which was very many years ago introduced from the Cape of Good Hope.

The old plants made but poor progress either in a cool or intermediate temperature, and though the plants can be readily divided, we soon found that a good stock is most quickly obtained from seed. Unfortunately none of our seedsmen, to my knowledge, offer seeds of this plant, though doubtless they would soon do so if there was a demand for it. The seeds considering the size of the plant and flowers are large, being somewhat of the shape and colour of Cabbage seed, only they are larger. Early in March it was sown in a pan filled with light soil and plunged in a brisk bottom heat. Nearly every seed quickly germinated, and when the seedlings were about 3 inches high they were pricked off in threes in 3-inch pots and loamy soil, and still kept growing in heat. When well established they were transferred to a temperate house, and before becoming badly root-bound were shifted into 6-inch pots, using rather rich loamy soil, this liberal shift being all the potting required for the season. The plants were stood on a shelf, the long and naturally twining growths being allowed to fall to their full length. Being coarse-rooted, plenty of moisture and frequent supplies of strong liquid manure was considered necessary from the time the pots were well filled with roots, and they have well repaid for this treatment. By way of experiment a few of the plants were placed on a shelf in a forcing-house, but this only served to hasten flowering, and the appearance of red spider further convinced us that a temperature of a greenhouse or intermediate



house best suits the plant. We have plenty of seeds for sowing early next year, and hope to save more for the following season on the plants now in flower.

When the growths are required for table or vase decoration, a plant or plants are cut clean over, the growths carefully separated, being then available for various methods of decorating. On the first night the growths are freely distributed throughout the centre of the table, and the white cloth shows it off to the best advantage. The better to realise this it should be added that many of the growths are 3 to 4 feet long, the stems being very fine or wiry, and the leaves widely disposed and pinnate, are very neat, of a pleasing green colour, and very glossy. In addition to a profuse use of these wreaths of foliage we also employ a number of small fish globes, each containing specimen blooms of such fine Japanese Chrysanthemums as Bouquet Fait, Boule d'Or, Fanny Bouchardat, Grandiflorum, J. Delaux, Madame C. Audiguier, Meg Merrilees, and Oracle. At another time Poinsettias, trusses of red and pink Chinese Primulas, and single and double-flowering Zonal Pelargoniums are substituted, though these are reserved as much as possible for use when the Chrysanthemums are past. The Myrsiphyllum growths being taken off when the table is cleared and laid on a cool floor, keep fresh, and may be employed in a different manner for the next two nights. It forms a pretty fringe to the small banks of green moss and flowers, and is also very pretty when lightly intermingled with the latter.

These growths are also suitable for twining round the stems of tall flower vases, and when in flower they prove still more attractive, as the pretty little greenish white flowers are produced very thickly, and are strongly and pleasingly perfumed. Other uses for this comparatively but little known plant could be mentioned, but I think I have enumerated sufficient to prove its value as a decorative plant, and the ease with which it can be grown ought to further tell in its favour. It is Asparagus-like, in that it is constantly pushing up fresh growths from the crowns, and also in having thick fleshy roots. If cut clean over, a fresh batch of shoots are produced, and these are available in the spring and summer months. Old plants will not be kept here, as we find the seedlings the most vigorous, and they do not shed their leaves so quickly.—W. IGGULDEN.

#### BORDERS OF HERBACEOUS PLANTS.

THE space usually allotted for the cultivation of hardy plants is in the majority of cases, even in well-ordered establishments, small and altogether inadequate both for their requirements in general and also for the purpose of showing what may be accomplished when plants are well arranged. In some it may be of necessity that the collection is small; but many places with a little management could be utilised for this purpose, all in some way assisting to make things more beautiful and cheerful. There are few gardens not surrounded by a belt of trees or shrubs for shelter—in many cases, too, themselves a feature if tastefully arranged; but in too many instances the desire to fill up and afford the necessary shelter is the main one, after which, unless in trimming up that part visible from the walk, little or no care is taken to keep it in order. The thinning-out process, which should be commenced gradually and carried on judiciously, is often left until it presents a thicket, and when the trees or bushes that might have been symmetrical are all one-sided and unsightly, the gradual thinning-out process is not only advantageous to the trees and shrubs but it in a measure opens up quite a new aspect, where the taller and stronger-growing of our herbaceous plants thrive in a most remarkable way.

Asters, some of the taller-growing Helianthus, a few of the Malvaceae, Coronilla varia, and others are particularly fond of such situations. Ferns in quantity may also be well grown, getting as they do just the requisite amount of shade, so essential to their success. Helleborus foetidus is also partial to such places, and, indeed, in a few years may be had as much at home as it is near the famed "brig of Doune." This also applies to *H. viridis* as regards situation. The little borders at the foot of fruit walls could also be utilised as bulb beds, simply transferring the bulbs there as they cease flowering in pots. In this way Hyacinths, Polyanthus Narcissi, Tulips, Crocuses, &c., will in the course of a year or two regain their old vigour without materially robbing the soil, a good top-dressing in autumn being their only requirement.

Near espaliers there are often narrow empty borders on each side. The roots of the trees will invariably be found only on one side, and if this happens to be the shady side Violets and Christmas Roses succeed well. We have now some well-established plants of the Christmas Rose, which we mulch in autumn, and these will supply us with flowers from now to the beginning of February. On the other side, which may be widened so as to make a small border, a supply of flowers may be had at almost all seasons from Sternbergias, Crocus, Cyclamens, &c., which in open seasons are hardly a fortnight past.

In back rows large plants could be used sparingly, so as not to exclude light, a number of which could also be used as isolated specimens—Acanthus in variety, Achillea Eupatoria, Aconitums in variety, Delphinium in variety, Alstroemeria aurantiaca, A. psittacina, Anchusa italica, Asclepias tuberosa, &c., Aster Novae Angliae, multiflorus, turbinellus, &c., Helianthus, various, Campanula pyramidalis, Phlox, Astilbes, and Bocconias. Others for first and second row—Saxifragas, Silenes, Lithospermum prostratum, Violas var., Lobelias, Gaillardias, Gladioli, Liliums umbellatum and Kramerii, Tulips and Narcissi in quantity, Irises, Fritillarias, Calochortus luteus, Ornithogalums and Colchicums, Crocuses, Anthericums, Sternbergia lutea, Anemones, Carnations, and a host of others that need not be mentioned. The bulbs, if deep planted, may be placed between the rows

and also between the plants in the row. The border will not require to be disturbed more than pointing a rich top-dressing in spring.—S.

#### BOMAREA ACUTIFOLIA.

THE Bomareas are very closely allied to the Alströmerias, and were formerly included with them. They differ, however, from the latter in their twining stems and several details of their floral structure. In the genus Alströmeria the two upper segments of the perianth differ generally from the others either in form or colour, so as to give the flower an unsymmetrical appearance. In Bomarea it is destitute of this irregularity, the two series composing the flower, although differing slightly from each other, being composed of segments uniform in shape and colour.

Bomarea acutifolia is a tuberous-rooted plant, with twining stems, growing in the open ground to the height of 6 feet or more. The leaves are, as the specific name suggests, long and pointed, smooth and dark green on their upper surface, but paler and strongly nerved on their under side, the nerves being clothed with numerous hairs. A curious feature, common, however, to all the species, as well as to the Alströmerias, is the twisted petiole or leafstalk, by which the position of the leaf is re-



Fig. 96.—Bomarea acutifolia.

versed. It would seem if Nature had, in a careless mood, originally attached the leaves upside down, and afterwards corrected the error by the very simple expedient of twisting the footstalk.

The plant luxuriates in a rich sandy loam, and when the soil is naturally heavy and retentive a considerable proportion of sand should be mixed with it before planting the roots. In low moist situations it will also be highly desirable to place a few inches of drainage beneath the soil on which the tubers rest. This will give them a much better chance of enduring frost, for it is only in dry soils that they can be considered hardy. The tubers should be planted at least 6 inches deep, in a warm aspect; if at the foot of a south wall the plant will flower finer than in more exposed places.

When grown against a wall the stems of the plant may be secured to a narrow trellis; in other situations a neat stick will be requisite. In those localities in which there may be some risk in leaving the tubers in the ground through the winter, they should be carefully dug up soon after the stems have died down, and be preserved in pots of sandy loam in a dry place until spring. It is not advisable to remove the soil entirely from them, or they will shrivel, and perhaps decay.

The increase of *B. acutifolia* may be effected by division of the tubers, or by seeds, which are usually ripened freely. Like those of some other endogenous plants, the seeds are apt to become so hard by keeping,



especially if in a very dry place, that they will only germinate after a long interval, unless sown as soon as ripe, which is not always practicable or desirable.

This desiccation may be prevented to some extent by burying the seeds in a pot of sandy loam, which should be preserved in a dry cool place. It is usual to sow them in artificial heat in spring, but stronger plants are obtained by sowing in the open borders under a handglass about the middle of April. Soil of a light porous nature will be indispensable, and when the plants appear above ground air must be admitted, but they must be covered at night as long as there is any danger of frost. The snails and slugs are very partial to this genus, as well as to the *Alströmérias*, and should be watched for, or they will eat off a batch of seedlings in a single night. Some of the strongest plants may be expected to flower the second year, but generally blossoms are not produced until the third season.

In dividing the tubers, which in this and most of the species which have come under our notice, are small spherical potato-like masses, and suspended from the collar of the plant by a long footstalk; care must be taken, to secure with each, one of the eyes developed at the collar, the tubers themselves producing none.

*Bomarea acutifolia* is a native of the temperate parts of Mexico, where several other species are found.—W. T.

### ROBERT VEITCH & SON'S EXETER NURSERIES.

THERE are, I believe, no better known nurseries than these in the west of England. The name of Veitch has long been a household word among gardeners; and although the Chelsea branch is now pre-eminent, it was their near relatives at Exeter who were the first by many years to bring the name into prominence, and have contributed not a little to its popularity. The senior member of the firm I am sorry to say is in a very delicate state of health, but his son, having had long experience both at the Chelsea nurseries and abroad, there is every prospect of the business being improved rather than being allowed to deteriorate.

The nurseries are most conveniently situated near the New North Road, Exeter, and are within easy distance of both railway stations. Being old, the majority of the plant-growing houses are anything but ornamental, but they are evidently very serviceable, and that is the point to be considered by business people. Neither is there a number of sensational plants, but those that are grown are, like the old houses, very serviceable, and here Messrs. Veitch must receive credit for keeping pace with the times. Nearly all kinds of plants that are worth growing are cultivated, and nearly every plant grown would give satisfaction to a purchaser. Yet the houses are crowded, and how so many neat little plants can be thus grown is a mystery, to those especially who insist upon so much more space being necessary for each. A large span-roofed house filled with a great variety of Ferns was particularly interesting, and it is surprising how vigorous all were under a comparatively cool treatment. A plant of *Adiantum speciosum* was considered to be the best in the country, and the grand variety should prove of great service to exhibitors. *Adiantum Lathomii*, in the way of *A. scutum*, but much superior to that species, should also find its way into most gardens, and is well adapted for exhibition purposes. *Adiantum rhodophyllum* somewhat resembles *A. farleyense*, but is much more robust and dense-growing, and is certain to eventually become popular for various decorative purposes. *Adiantum dolabriforme* is one of the prettiest basket Ferns imaginable; it is evergreen, and the elegant drooping fronds produce young plants at the tips, and it is these that add so much to the beauty of the plant. Many other good *Adiantums* are grown to meet the increasing demand for them. Another good basket Fern is *Goniophlebium appendiculatum*, and the young fronds of this variety are very attractively coloured. *Goniophlebium subauriculatum* and *Asplenium longissimum* are also admirably adapted for suspending in baskets. *Microlepia hirta cristata*, besides being very popular as an exhibition Fern, is also one of the most beautiful for a conservatory, and is of easy culture; and another Fern not so popular for various purposes as it ought to be is the *Lomaria discolor bipinnatifida*. *Davallia polyantha* appears to be of very vigorous habit, and quickly grows to noble proportions. *Nephrolepis davallioides furcans* is also in great demand for exhibiting purposes, but I must confess to a preference for many other Ferns growing in these nurseries. Messrs. Veitch also make a speciality of hardy British Ferns, and their collection includes many good specimens of rare or valuable species and varieties.

All kinds of stove flowering and fine-foliaged plants are grown, including many rare old species and some of quite recent introduction. Among the latter is a Cape Asparagus, of which they have, I believe, the entire stock; this, besides being distinct from other known species in its heavy plume-like growth and rich green colour, also freely produces a number of charming small and white star-shaped flowers. It is very robust, and is likely to prove a valuable acquisition. There is also a good stock of *Asparagus tenuissimus*, this in some respects resembling the now well-known *A. scandens*, but is rather coarser. *Crotons*, *Dracenas*, *Anthuriums* (including several with very fine spathes), *Ixoras*, *Pancratiums*, *Tabernæmontanas*, *Gardenias*, *Jasminums*, *Marantas*, *Caladiums*, *Aralias*, *Euphorbias*, and various other flowering and fine-foliaged plants are all well represented, the limited number of varieties being well chosen. Orchids

are not extensively grown, but there is a good selection of small well-established plants of both stove and cool species, including many *Dendrobies*, *Calanthes*, *Cattleyas*, *Cœlogynes*, *Cypripediums*, *Lælias*, *Lycastes*, *Masdevallias*, *Vandas*, *Phalænopses*, and *Odontoglossums*. Pitcher Plants, including choice *Nepenthes*, *Sarracnias*, and *Dioncæa Muscipula*, are also cultivated. A considerable number of Palms of all sizes are growing in different houses, and of these a good selection for a stove would be *Arecas lutescens*, *Verschaffeltii*, and *rubra*; *Cocos Weddelliana*, *Cycas revoluta*, *Dæmonorops plumosus*, *Euterpe edulis*, *Geonomas gracilis* and *intermedia*, *Thrinax elegantissima*, and *Verschaffeltia splendida*; while for an intermediate house or conservatory, *Areca Bauerii*, *Chamaerops humilis* and *tomentosa*, *C. rypa australis*, *Kentias Belmoreana* and *Forsteriana*, *Pritchardia filamentosus*, *Seaforthia elegans*, and *Latania borbonica* would prove very ornamental and useful.

Azaleas and greenhouse Rhododendrons are very well grown, the majority of the plants being very healthy, well set with buds, and of a good saleable size. Attention was directed to a good stock of Azalea Lady Poltimore, which this firm first distributed. Judging from its sturdy habit, floriferousness, and the size and colour of the flowers I have seen, it somewhat resembles but is far superior to the Old or Fielder's White. It forces readily, and the flowers are large, of good substance, and beautifully white. The greenhouse or hybrid Rhododendrons are a class of plants not nearly so much grown as they deserve to be. They can be had in bloom, provided the selection is good, nearly all the year round; they are of various colours. The blooms also vary in size, some being very large, and all that I have yet seen are very sweetly scented. Messrs. Veitch have good stocks of such sorts as Princess Royal, rose pink; Duchess of Teck, buff-yellow; Taylorii, pink and white; Duchess of Edinburgh, brilliant scarlet; Jasminiflora, small white; Princess Alexandra, blush; Veitchii, white, very large flowers; and Exoniense, creamy white. The latter was originally sent out by Messrs. R. Veitch and Son, and they still annually distribute great quantities of it. Unlike the majority of hybrid Rhododendrons, it is very dwarf and "stocky" in habit; quite as much so, in fact, as any Indian Azalea, and quite as floriferous. The flowers are of good size and very sweetly scented, and are found invaluable for bouquets. It should be grown in every greenhouse. Plants have been growing and flowering freely in an open border for two seasons, but it cannot be classed as a hardy plant till it has stood a more severe test. Other greenhouse plants extensively grown are *Lapagerias*, *Ericas*, *Epacrises*, *Carnations*, *Tuberous-rooted Begonias*, &c. Among the Tuberous-rooted Begonias are several good novelties which are now being distributed. The one that most favourably impressed me was Sulphur Queen, this being sturdy and floriferous, having very double flowers of a pleasing sulphur yellow, the edges of the petals being prettily fringed. Exonian is a showy free-flowering variety, and produces large rosette-like salmon-coloured blooms. White Lady produces very fine double white flowers, and this and Sulphur Queen are perhaps the most distinct and valuable. Perfection, also double-flowering, produces very fine blooms of a brilliant carmine red. Besides these Messrs. Veitch also cultivate many other fine single and double varieties.

Herbaceous plants are extensively grown, and the collection appears to be very complete. Chrysanthemums, Tea Roses, Zonal Pelargoniums, and other serviceable kinds of plants are all grown, both for sale and for wreath and bouquet making, which work is carried on in connection with an extensive seed business they have in the busiest part of the city.

In the nursery grounds there is a good assortment, and valuable and common forms of *Coniferae*, evergreens, and deciduous trees, while Roses, single and double Dahlias, and various other flowering plants all receive proper attention. There is a very fine stock of fruit trees, all of which, being grown on poor soil and frequently lifted, transplant readily and soon become established in fresh quarters and almost any kind of soil. The dwarf and standard-trained trees of Peaches and Nectarines and the many dwarf-trained Plums, Cherries, and Apricots, appeared to have made excellent but not too sappy growth, and reminded me of the best trees that used to be distributed by the Messrs. Osborn of Fulham.—W. I. M.

### ON SOME CHANGES WHICH NITROGENOUS MATTER UNDERGOES IN THE SOIL.

(Continued from page 558.)

WE will first glance at the functions of the animal life existing in soils—the worms, the larvæ, the insects. If anyone will turn up a turf in a pasture field in April or May, and pull it carefully to pieces, he will probably be astonished at the amount of animal life which it contains. These animal organisms feed both on the fresh and decaying vegetable matter present in the soil. Worms, according to Darwin, may even, apparently, feed on humus. In the animal body, as is well known, carbon is speedily oxidised, carbonic acid being exhaled in the respiratory process; at the same time nitrogenous matter is returned to the soil in the form of excrement, and also in the body of the animal at death. The function of the animal is thus to burn carbon, and to cause the organic matter of the soil to become more nitrogenous.

A perfectly similar function is exerted by the fungi which inhabit soils. These feed on the organic matter present, exhale carbonic acid, and at their death contribute to the soil their own highly nitrogenous tissue. The action of fungi on soils is excellently illustrated by the fairy rings common in many pastures. Here a ring of fungus is closely followed by a ring of luxuriant grass. The fungus has fed on the nitrogenous organic matter of the soil, which is useless as food to the grass, and on the death of the fungus the nitrogen which it has taken up is left in the soil in the form of albuminoids and other bodies easily converted into nitric acid. The nitrates thus produced act as a powerful manure to the grass. The composition of the soil



in the various parts of a fairy ring has been ascertained in the case of several rings at Rothamsted (*Trans. Chem. Soc.*, 1883, 208). The amount of carbon destroyed during the progress of the ring of fungus is very considerable. The difference between the amounts of carbon found in the soil outside the ring, where the fungus has not yet appeared, and within the ring, where the action of the fungus is completed, represents indeed a loss of something like £000 lbs. of carbon per acre.

Neither the animal life of the soil, nor the fungi, carry their oxidation of nitrogenous matter to such a point that ammonia or nitric acid is produced. These two agents perform some of the rough work of oxidation, but do not bring the nitrogen into the condition most suitable for plant-food. This object is accomplished by the bacteria, the third of the principal oxidising agents within the soil. The bacteria of soil have been as yet but slightly studied; but such organisms undoubtedly exist in great numbers, and of many kinds and functions.

It may be taken as a general rule that in the absence of oxygen bacteria act as ferments, splitting up the organic matter into new compounds, while in the presence of oxygen they become active oxidising agents. In the case of many bacteria the nitrogen of the organic matter attacked is reduced to the form of ammonia, and under some conditions it may be partially evolved as free nitrogen. The nitrifying organism forms apparently a class by itself, it alone producing nitric acid. We do not yet know with certainty what nitrogenous bodies are capable of direct conversion into nitric acid. Albuminoids, amides (asparagine and urea) and ammonia can, indeed, readily be nitrified, but the first stage of the action on albuminoids and amides is apparently the production of ammonia, and we cannot yet say if the action of the special nitrifying organism begins at the ammonia or extends to the earlier stages of the action. If ammonia alone is attacked by the nitrifying organism, we must then regard the other associated bacteria as executing the preliminary portion of the work.

We will now glance at the influence which external conditions exert on the action of the various agents just mentioned. One essential condition for processes of oxidation is, of course, the presence of oxygen: an open, porous soil is thus far more exposed to oxidation than one in a closely consolidated condition; the effect of tillage is consequently greatly to promote oxidation. Water is also essential for the activity of all living agents: oxidation is thus far more rapid in a moist soil than in a dry one. A great excess of water is, however, fatal to oxidation, air being naturally excluded as soon as the soil is filled with water. Temperature is another prime factor in determining the rate of oxidation in soil; the activity of all living agents, whether vegetable or animal, being dependent on the occurrence of a favourable degree of heat, and being confined to certain specific ranges of temperature. Oxidation is consequently far more rapid in summer than in winter, and much more energetic in hot climates than in cold. A further condition very favourable to oxidation is the presence of some base in the soil capable of neutralising the acids that are produced. Without the presence of such a base no formation of nitric acid will occur. This part is generally played by the carbonate of calcium commonly present in soils. Liming, of course, will act in the same direction.

We are now probably in a position to understand what is the cause of the enormous differences between different soils, as to the quantity of organic matter and of nitrogen which they contain.

In a peat bog we find the conditions most favourable for the accumulation of organic matter. The sphagnum and other bog plants cover the bog with a perennial growth, which supplies annually a large residue of dead vegetable matter; while the soil, being waterlogged, and necessarily free from carbonate of calcium, the oxidation of this vegetable residue is reduced to a minimum. Peat bogs also usually occur in cool climates.

In fertile meadow land we have conditions much more favourable to oxidation. The soil here is not waterlogged, but fairly well aerated, and oxidising agents, both animal and vegetable, are abundantly present. The land being, however, always covered by a thick vegetable growth, considerable accumulations of organic matter may take place in the soil, though never to the extent observed in a peat bog.

When we next turn to arable land we find that the conditions have become so favourable to oxidation that loss rather than gain of soil nitrogen is probably the general rule. Oxidation is here greatly assisted by the operations of tillage, and by the fact that the land lies in a state of fallow during a considerable part of most years. In such soils large quantities of nitric acid are produced, which may be washed out by winter rains and lost. At Rothamsted the old pasture land contains in the first 9 inches nearly twice as much nitrogen and more than twice as much carbon as the arable land to the same depth. As all arable land was once pasture or woodland, the loss that has occurred during cultivation is obvious.

It is quite clear from what has now been stated that arable culture affords great opportunities for serious loss of soil nitrogen, and from this point of view arable culture may be said to present considerable disadvantages as compared with pasture. But there is another side to the question. The rapid oxidation of organic matter which occurs under tillage means the production of a large amount of available plant-food. The nitrates produced, though liable to be lost by drainage, are also equally capable of producing valuable crops, and the skill of the farmer is displayed in so arranging his methods of culture that the nitrates shall be a source of profit instead of loss. The effect of free oxidation on the productiveness of land is, indeed, strikingly shown by the fact that arable land, though containing only half the amount of nitrogen that is found in pasture, is, nevertheless, capable of yielding a greater weight of annual produce per acre.

these trees are swelling freely, and 45° should be the minimum temperature on cold nights, and between that and 50° is ample even on mild nights, with a rise of 10° to 15° by day from sun heat. Nothing is gained by undue haste until we have increased light and length of days. Peach blooms allowed to unfold in a low temperature, particularly at night, with free ventilation, always set and stone well. They will thus ripen good crops of fruit in a higher temperature, by which means time lost at the outset is redeemed, the trees make strong short-jointed wood, and if due attention is paid to thinning one fruit to every square foot of trellis covered with foliage, they will long remain profitable trees. Large crops of Peaches are only the forerunner of disaster, as Peach trees, like other fruit trees, are only capable of maturing a given weight of fruit, and if overcropped they do not exceed that weight in the aggregate, consequently the extra quantity is obtained at the expense of size and quality. Cease syringing as soon as the flowers open, but maintain a genial condition of the atmosphere by damping in the morning and afternoon of fine days. Raise the temperature early in the day to 50°, and not exceeding 55° from fire heat, and admit a little air, yet not to lower the temperature below 50°, and increase the ventilation with the sun heat, having it full at 65°, and gradually reduce it with the declining heat, closing for the day at 55°. A little ventilation should be provided constantly at the top of the house.

*Houses to Ripen Fruit in Early June.*—Where there are three or more Peach houses annually forced, the second should be ready for closing January 1st. If the house has been open so as to receive the autumnal rains the borders may be in good condition—that is, thoroughly moist to the drainage, but if there is any doubt about this an examination should be made, and if necessary repeated soakings given so as to thoroughly moisten the soil in every part, and if the trees are weakly liquid manure may be given. It has been a prevailing practice to allow the inside borders to become dry through the autumn and early winter months, but it is a mistake that is often followed by the buds falling—the most prominent flower buds, and the disaster is frequently attributed to every cause but the right one. With the borders of suitable material resting on ample drainage, there is little danger of their receiving too much water either by exposing them to the autumn rains or by giving liberal supplies of rain water from the tanks. Fire heat will only be necessary during the first fortnight to raise the temperature by day to 50°, at which open, and close the house, and to prevent its falling below 40° at night, and it ought not to exceed 45° at night, except it be from natural means. Syringe the trees twice a day, morning and afternoon, the latter sufficiently early to allow the trees to become fairly dry before night.

*CUCUMBERS.*—Take every opportunity to encourage growth in the plants by closing the house early on bright days, and damp the pathways and plants with tepid water, using a fine-rose syringe for the latter. Tepid liquid manure in a weak state must be given to plants which are making free growth. A beneficial and invigorating influence will be given the plants by a top-dressing to the bed of a compost composed of two parts turfy loam, one part fibrous peat, and one part horse droppings, thoroughly mixed and warmed to the temperature of the house by being taken in some time previously. If the plants are only growing weakly it will be well to ease them of fruit, and to withhold liquid manure until they show signs of free growth.

*Manure Beds.*—Fermenting material having been mixed and turned to allow of the rank heat escaping, it will be ready for making into a hotbed, which should be done on a southern aspect, and in front of a wall or hedge, so as to break the north wind. The site should also be higher than the surrounding level, or if damp and low a layer of faggots placed where the bed is to be made will keep it dry. Let the bed be made sufficiently large to take the frame, and be a few inches larger than the frame all around. As the bed is made beat it down firmly and even with the back of the fork, and sufficiently high to allow for shrinking; and as this will be fully one-third, hence the bed will need to be about 4 feet high in front and 5 feet at the back. If some 3-inch drain tiles are at hand place them on the manure across the bed end to end right across, so as to form drains about 18 inches apart, or a few pea sticks may be placed across and along the bed for the purpose of preventing overheating. This is a good old plan too much neglected. For early work, too, it is a good plan to have the inside of the frame lined with half-inch boards to within 6 inches of the top, and down to the bottom, with an inch cavity between it and the frame; and this is a ready means of admitting top heat instead of its being absorbed by the plunging material through the sides of the frame. Place sufficient fermenting material in the frame to make the back level with the front, then 2 or 3 inches depth of dry leaves, and 4 to 6 inches of dry sawdust, and as soon as the heat is developed it will be ready for Cucumber and Melon seeds, and will also be extremely useful for cuttings.

*STRAWBERRIES IN POTS.*—The Strawberry is very impatient of forcing in its early stages and until the fruit is fairly swelling, therefore caution at this time is absolutely essential. In frosty or dull weather it is well to be guided by external conditions, allowing the temperature inside to fall correspondingly with that outside, so that there may be no great progress made except on sunny days. The pipes should be warmed early in the day, and the walls and paths damped when there is the prospect of sun, so that a little air may be given to dry up or change the atmosphere. The day temperature should be maintained at 50° to 55°, with 10° rise from sun heat, losing no opportunity of admitting air, commencing ventilation at 50°, from which the temperature may recede through the night to 40° or 45° in the morning. With fine weather it is surprising how the plants progress in the new year, and it is then a good plan to start a batch of at least two varieties, so that one will come in after the other in succession. Before the plants flower examine them closely for aphides, and if any are present fumigate moderately on two or three consecutive evenings. Look



#### FRUIT FORCING.

PEACHES AND NECTARINES.—*Early Forced House.*—The buds of



over the plants daily, and see that none of the plants is in need of water. Admit air freely to plants in frames; for those plunged outdoors a little protection over the crowns in severe weather is beneficial.

#### PLANT HOUSES.

*Gardenias*.—The flower buds are now forming in large quantities, and swelling fast under ordinary stove treatment. If the plants are wanted in bloom as early as possible the most forward must be plunged in bottom heat that can be kept at about 80°, with an atmospheric temperature about 10° lower. If the plants are syringed twice daily the buds will develop quickly. If the pots are full of roots weak stimulants may be given, or, better still, a little artificial manure applied to the surface. In the later batches the roots must be kept steadily growing, or the flower buds when they appear will be puny if not deformed. In the majority of cases the deformity of the flower buds of these plants is due to inactivity of their roots and strong supplies of liquid manure during the time root-action is defective. Strong insecticides will also cause the same results when applied as the buds are forming. At this season mealy bug or other insects should be removed by the aid of a sponge or small brush instead of trying to destroy the insects by applications of strong insecticides. Young stock and all successional batches should not remain in a lower temperature than 58° or 60°, according to the weather, or they will become seriously checked and their progress brought to a standstill.

*Pancratiums*.—These during their season of flowering are even more useful for bouquet-making than the beautiful *Eucharis*. Both, however, are much admired, and should be grown in numbers where stove heat can be provided. It is a mistake, however, to keep *Pancratiums* in the stove the whole year, for under these conditions they do not rest so thoroughly and completely as could be desired to ensure the most perfect success in their culture. If not removed from stove heat they should be gradually dried at their roots and placed in a lower temperature, say 50° to 55°, where they will be given no more water than is sufficient to keep their roots and foliage healthy. Cold draughts of air must be kept from them, and under these conditions they will rest perfectly, and the growth they make afterwards will be strong. No attempt should be made to ripen the foliage, for the lower temperature is sufficient to arrest growth and ensure a perfect rest.

*Achimenes*.—If the tubers of these plants have not been removed from amongst the old soil no time must be lost in completing this operation with those that rested early in the season. After this the tubers of the earliest batch may be spread thinly in pots or pans according to the quantity grown. They will do in any light material, and the tubers should be covered with about half an inch of fine soil on the surface. If the pans or pots containing the tubers are stood in a temperature of from 60° to 65° they will soon start into growth. If the soil is in a proper state of moisture give no water, but cover the surface of the pots with cocoa-nut fibre or other similar material after they have been plunged, which will save watering and prevent evaporation. They should remain in this condition until they commence growing. It must be determined when placing the tubers in pots or pans whether they will be taken out and placed into others 1 or 2 inches apart after they have commenced growing, or whether they will be allowed to grow together for yielding cuttings which will be rooted in pots and pans for the future specimens. If the former, the tubers must not be sown too thickly; if the latter—and the best specimens are those grown from cuttings—it is immaterial how thickly they are placed together.

*Caladiums*.—The roots of those that were placed to rest early may now be shaken from amongst the old soil, repotted in as small pots as possible, and placed in heat, treating them the same as advised for *Achimenes* until they commence growing. In potting a good dash of sand may be placed about the roots. A compost of good loam, one-third leaf soil and old Mushroom-bed refuse, with a dash of coarse sand, will suit these plants well. They need have no water until signs of growth are visible, for they are very liable to decay if kept in any way too moist when they are first started. If the pots are entirely plunged no water will be needed. A better plan than potting the roots is to place them in a box, just covering them with equal parts of leaf mould and sand until they show signs of growing, when they may be potted at once. Under this system the plants occupy considerably less room than when potted singly at the commencement.

*Gloxinias*.—A few roots may be started for early flowering, and these we prefer to shake out of the old soil and place them thickly together in boxes or large pans in preference to potting them singly at first. All that is needed is to spread about 1 inch of leaf soil at the base of the boxes, then place in the roots and cover them with about 1 inch of the same material. They should be placed in heat, the surface of the box syringed occasionally; they will very soon start into growth and commence rooting, when they may be potted singly in pots varying in size according to the size of the corms.

imperfectly understood, and that many bees die at an early age through ignorance on the part of the owner. There is no time throughout the whole year that the apiarian is justified in pursuing a course that is likely to shorten bee life. Where profit is expected it should be the aim at all times of the bee-master to prolong it. Although care to prolong bee life is necessary at all times, yet during autumn a little extra attention is absolutely necessary before we can reasonably expect our favourites to tide over the winter months successfully, and obviate untimely deaths we read so much about. That bee life can both be prolonged or cut short there is no doubt, and the bee-keeper has the control of that to a great extent, as can be witnessed by comparing results under different managements.

I have expressed my views strongly as to what constitutes the best preserving hive, the first principle in apiculture. I have also shown that the short term of bee life, as set down by modern writers, is misleading; in short, the six-weeks theory cannot be supported by any evidence. However desirable the youthful element may be in the hive at certain seasons, it is positively injurious at others. It is a fact well known that bees, on or about the fifth day of their existence, if the weather is warm, fly out and void their excreta, which, if delayed beyond a reasonable time, they become restless and cold, communicating the restlessness to the adult bees; and the young ones, unable to fly, either leave the hive to die outside, or are chilled to death inside. Young bees cannot endure the same length of confinement, if they have never had an airing, as adult bees, and are often the direct cause of the entire loss of the hive that bred them.

Late feeding is a mistake, and many a bad result has arisen therefrom. Late breeding we cannot always prevent, but it should not be encouraged. It has always been our object to be in possession of hives that neither require feeding nor coddling. Some years since, and for years in succession, a contemporary advised feeding in October, and we know something of the evil that beset those who took that ill-timed advice.

Bees, as a rule, cease breeding with the decline of the honey season, which usually occurs about the end of August, except in the case of those having young fertile queens, which, unless fed, will not breed beyond the autumnal equinox, but will sometimes begin again soon after the shortest day. When this is the case, and a mild February follows, there will be a chance for the young and tender bees to get an airing. Then all may go well; but should the weather be untoward and protracted, so as to prevent the flight of the young bees, the hive may succumb to the influence of the evil. But, happily, early breeding is not so fatal or injurious to bees as late breeding.

I have for some time past been paying particular attention to hives with late-bred bees, not for the purpose of getting information, but to be enabled to give that to others from accurate observations. Since the 10th of November, the last day bees carried pollen for this year, I have collected all the dead ones from several hives, having taken the precaution that none should be carried off by the birds, by netting the front of the hive. I collected the ejected dead, and found, as I fully expected, not more than 10 per cent. of adult bees out of more than ten thousand. These I laid down near a hive, and in less than an hour the sparrows and titmice had carried every one away. My reason for mentioning the alacrity the birds displayed is to impress bee-keepers that, though their hives may show no signs of dead bees, they may be actually dwindling rapidly through some autumnal mismanagement.

The foregoing will, perhaps, impress the beginner with the evils of late feeding and breeding, and convey to him the cause of dwindling stocks. This is sometimes aggravated by uncalled-for molestations, and a superabundance of cloth coverings, which often cause internal damp and disease in the bees. Thus by excess they aggravate evils that sensible bee-keepers would obviate by using, in moderation, the proper quantity of a suitable material, which helps greatly to prolong the life of the bee.—A LANARKSHIRE BEE-KEEPER.

#### BEEES AND FLOWER COLOURS.

It has been shown that the petals of flowers are for the purpose of attracting insects to carry pollen from one plant to another, so that the seeds would be more perfectly fertilised; and also that petals have been evolved from stamens. As stamens are almost universally yellow, it is natural to suppose that the primitive petals were also yellow; and the question arises, "How came these originally yellow petals to assume the many varied hues which they now possess?" A quarter of a century ago this question would hardly have been thought of, to say nothing of an attempt to answer it; but now, thanks to the researches of Darwin, Lubbock, Müller, Wallace and others across the Atlantic, as well as Gray, Beal, and scores of other enthusiastic workers in our own country, we can at least point to a very plausible solution of the question.

These researches have proved not only what has before been stated, tha

## THE BEE-KEEPER.

### THE TERM OF BEE LIFE.

NOTWITHSTANDING all that has been written upon the natural term of bee life, there is still much misconception regarding the limit. From the fact that many articles have been written on preserving of bees is proof that their management is by many but



flowers with their coloured petals are parts of the plant specially set aside to attract insects, but also that certain colours attract certain insects. Thus Dandelions, May Weeds, and other white or yellow flowers are found to be most freely visited by two-winged flies, while bees and butterflies are most freely attracted to more highly coloured ones. Think over the most important bee plants, and see how many of them are pink, purple, blue, or lilac in colour. True, there are some conspicuous exceptions, as Sweet Clover (but it will generally be found in such cases that nectar is unusually abundant), attracting the bees without high colours. Nature is very economical with her forces, and places none of them where they are not needed.

Besides this evidence of the ability of insects to distinguish colours, we have the conclusive experiments of Sir John Lubbock regarding the colour sense of bees. In these experiments honey was placed on glass, beneath which were slips of pink and blue paper, and it was found that the bees first selected that over the blue paper, thus proving not only their ability to distinguish colours, but their preference of blue.

But someone will ask, "How and why did the primitive yellow flowers commence to vary?" It is well known to gardeners that when the conditions of a plant are changed, it is likely to vary, or sport as it is called. This is especially true of the highly organised petals, where variation is more likely to occur than on the rest of the plant. Chemistry also teaches that the composition of pink and yellow petals differs but little, and that a very slight change in the composition may produce marked differences in colour. Hence variation is very likely to be produced if a seed is carried by the wind, or otherwise, to a new locality.

To illustrate the theory now held by eminent botanists regarding the development of colours in petals, let us suppose a case of a flower of the primitive yellow varying slightly to a white or pink colour. Obviously, it

only. We cannot reply to questions through the post, and we do not undertake to return rejected communications.

#### TO CORRESPONDENTS.

In consequence of having to prepare our pages for the press some days earlier than usual, the publication of several interesting communications and replies to correspondents must be deferred to a future issue.

**Erratum.**—In the remarks upon "The Insect Foes of the Rose," page 556, last issue, the word "not" was omitted in the first line, giving an opposite meaning to the sentence to that intended by the writer.

**Books (T. C., Newport).**—You will find Dr. Masters' edition of Henfrey's "Course of Botany" a thoroughly useful book. It is published by Van Voorst, London, price 15s. We are unacquainted with any book of the precise form mentioned by you. Forms used by our home farmer will be given in articles on dairy farming early in the new year, and these will probably afford you the information you require. "Dairy, Pigs, and Poultry," 2s., by R. Scott Burns (published by Crosby Lockwood & Co., 7, Stationers' Hall Court, London, E.C.), may be useful to you. Messrs. Letts & Co., King William Street, London, publish a work entitled "The Farm Expenses Book," which may probably suit you.

**Moss on Tennis Lawn (J. W. H.).**—If the water cannot drain freely from the soil, but becomes stagnant, moss will take possession of the lawn whatever you may apply to the surface. Lack of drainage is possibly the cause of the evil in your case, and it will probably be advisable to make drains 4 or 5 yards apart and 18 inches deep, falling into a cross drain at the lower level for conducting the water away. Two-inch pipes will do for the drains, covered with rubble, but in the catchwater drain the pipes should be

larger. If you cannot drain the land we should spread a layer of ashes 2 or 3 inches thick, covered with an inch or two of soil, on which to lay the turves. Whether the present turf will do to lay down again we have no means of knowing; but you may judge by the following test:—If when pared off about an inch thick it will roll as represented in the engraving (fig. 97) you may venture to use it again; but if it is full of moss as to break in pieces when you attempt to roll it, it will not be likely to prove satisfactory. Before removing it comb out all the moss you possibly can with a small and sharp-toothed rake, and when it is laid down again give a light sprinkling of fine soil containing a sixth part of its bulk of lime, and scatter on some fine grass seeds, and roll the surface when it is dry enough not to adhere to the roller. Under any circumstances we should not purchase fresh turves, but if the present turf cannot be used should prefer a lawn formed entirely by sowing seeds. We have seen close lawns in six weeks from the date of sowing, and in two months tennis was played in the most satisfactory manner. Sheep must be kept off

newly formed lawns, and from old lawns too in wet weather, as, unless the ground is very firm and well drained, they will inevitably make indentations in the surface that will not be agreeable. On some tennis lawns they do no appreciable injury. The seasons recently having been unusually wet caused the moss to spread in the manner you describe.

**Judging Tomatoes (J. B. T.).**—The note referred to was withdrawn after the indexing had been completed, to afford space for another item of a more urgent nature, and it was by accident that the line was left in the index. Your note appears this week.

**Pruning Vines (G. S.).**—The rods are too numerous by half, and you will never have good Grapes so long as you encourage such a thicket of foliage that few or any of the leaves can develop. At once cut out a number of the rods, retaining the younger and promising, and train them 3 feet apart. The spurs on these should not be less than 1 foot asunder; if they are closer than that cut some of them off, and one lateral will be sufficient from each spur in the summer, stopping a leaf or two beyond the bunch as soon as it shows, according as there is space for the expansion of the foliage. If no bunches show nip off the end of the shoot at about the sixth leaf. The pruning should be done at once, then with the thinner disposition of the growths in summer and adequate support at the roots your Vines will soon grow more strongly and bear better fruit.

**Ground Nuts (E. Mason).**—The Ground Nut, or Earth Nut, which is met with in the fruiterers' shops in this country, is the fruit of *Arachis hypogæa*, a native of South America, but cultivated in all the Southern States of North America, in the south of Europe, in Africa, and in Asia. It is an annual plant, growing to the height of 2 feet, with a trailing straggling habit. In South Carolina this is cultivated to a great extent, and there the inhabitants roast the "nuts," as they are called, and make use of them as chocolate. When fresh, the seeds, or "nuts," have a sweet taste, not unlike that of nuts or Almonds. The natives make them their principal food, and they form an article of great consumption among the negroes. An extremely sweet fixed oil is extracted from these seeds, which, according to some, is quite equal to olive oil, and does not become rancid, but, on the contrary, improves with age. There is something remarkably interesting in the economy of this plant. After the flowers fall off, the young pods are forced into the ground by a natural motion of the stalks; and there they are buried, and are only to be obtained by digging 3 or 4 inches under the soil, and hence their name.

**Peach Buds Falling (Inquirer).**—The most fertile cause is a deficiency of water at the roots, and the evil is aggravated by overcrowding the growths in summer and permitting the foliage to be infested with red spider. As you send no particulars relative to the condition of the trees nor the treatment to which they have been subjected, you must decide for yourself which has been the most active cause of the evil in your case, and act accordingly to prevent a recurrence of it another year.

**Raising Cyclamens (E. D.).**—As you have a heated pit we should certainly sow the seed now in preference to waiting until spring. We suspect that those persons who are the most successful in growing these

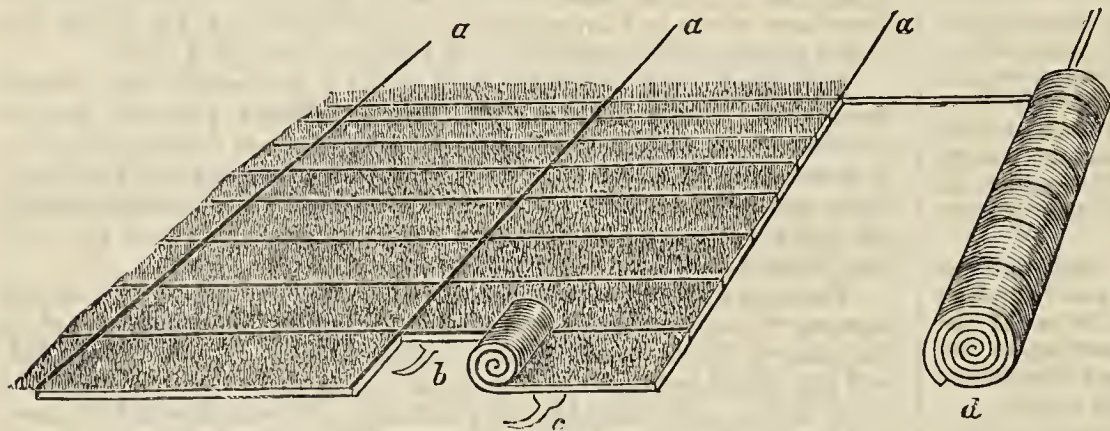


Fig. 97.

will be more conspicuous than its surrounding non-sportive brethren, and hence will receive more visits from bees and other nectar-loving insects. Hence, as has been so often shown by Darwin and others, the seeds will be more perfectly fertilised, and will produce stronger and more thrifty plants. These resulting plants will be likely to have flowers with the original variation more strongly marked, which, in turn, being more conspicuous, will be more freely visited, produce thriftier plants, and so on until the progeny of the original sport will become a well-established species.—(*American Bee Journal*.)

#### TRADE CATALOGUES RECEIVED.

E. Webb & Sons, Wordsley, Stourbridge.—*Spring Catalogue for 1885 (illustrated)*.

N. Davis, Lilford Road, Camberwell, London, S.E.—*Catalogue of New and Old Chrysanthemums*.

Waite, Nash, Huggins & Co, 79, Southwark Street, London, S.E.—*Wholesale Price Current of Seeds*.

James Veitch & Sons, Chelsea.—*Catalogue of Garden and Flower Seeds (illustrated)*.

Chr. Lorenz, Erfurt, Germany.—*Illustrated Catalogue for Owners of Gardens and Amateurs*.

B. S. Williams, Upper Holloway, N.—*Catalogue of Flower and Vegetable Seeds*.



\* \* All correspondence should be directed either to "THE EDITOR" or to "THE PUBLISHER." Letters addressed to Dr. Hogg or members of the staff often remain unopened unavoidably. We request that no one will write privately to any of our correspondents, as doing so subjects them to unjustifiable trouble and expense.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper



plants have seedlings pricked off now and growing freely, and these plants will be in splendid condition in the autumn of next year and the spring following.

**Carnations not Flowering** (*D. Edwards*).—We have no means of knowing why your plants do not flower. Perhaps they are not strong enough; possibly the varieties are not the most free, or your house may not be light enough nor of the requisite temperature. Strong healthy cuttings established in spring and the plants grown first on a shelf in a house having a temperature about 50°, then transferred to frames and eventually placed in the open air, will, if well attended to, be strong and sturdy by the autumn, and will flower freely enough in winter in a temperature of 50° to 55°, but they must have a light position. As you wish them to be dwarf and floriferous, try Miss Jolliffe and A. Alegatière. We can cut handfuls of flowers from fifty well-grown plants of those useful varieties; but many others have finer individual flowers.

**Wall-covering Plants for a Dark House** (*Willesden*).—We doubt if there is a more suitable plant for your purpose than *Ficus repens*. It is evergreen, and we have seen it luxuriating in ferneries that were densely shaded, and it succeeds in a stove or greenhouse temperature. The small-leaved variety of this plant, *F. repens minima*, forms a particularly neat and smooth surface, and is on that account attractive. It will grow in a cool house, but more rapidly in a warm one.

**Ink for Zinc Labels** (*J. Mersey*).—We agree with you that it is most disappointing to find the names on zinc or any other labels obliterated. The proper ink for writing on zinc is nitro-muriate of platinum, which produces a jet-black indelible stain. This preparation is easily made, and at very little cost. Procure an ounce stoppered phial, into which have two pennyworth, or half an ounce, of nitro-muriatic acid (composed of two parts muriatic to one of nitric), which may be obtained of any chemist. Next obtain from the gunsmith an old platinum touch-hole, which may be had for a few pence; then putting the latter in the acid and leaving out the stopper, set the phial in the sun or else upon hot sand until the acid has assumed a deep rich brown tint, or that the metal has ceased to give off bubbles of gas from the acid becoming a saturated solution. A few drops of this should now be added to a little water and tried with a quill pen, adding drop by drop until a sufficient blackness is produced. When using great care must be taken to wash the writing thoroughly in plenty of water immediately it has blackened, and then it should be wiped quite dry and varnished as soon afterwards as possible. 2, Take one part verdigris, one part sal-ammoniac, half part lampblack, and ten parts of water; mix well, and keep in a bottle with glass stopper; shake the ink before using it. It will keep any length of time. Write it on the label with a steel pen not too fine-pointed. It dries in the course of a minute or two, and will endure for many years. Or put into two-pennyworth of common writing ink two pieces of sulphate of copper the size of a hazel nut; let it dissolve, and write on the zinc with a quill pen.

**Heating a Fernery** (*T. W. G.*).—There is no method comparable with a small boiler and a flow and return pipe conducted along the front of the house or partly round it for circulating the water. Three-inch pipes would probably do in this case, but everything depends on the kinds of Ferns grown, the height of the house, and its exposure. Small boilers have been regularly advertised, any of which would answer. It will be best to write for illustrated prospectuses, and choose the apparatus which as regards its form can be the most conveniently fixed to the house. A bellglass placed over *Androsaces*, but so fixed that the plants can receive abundance of air, will be useful.

**Myrobalan for Hedges** (*Trike*).—We have been informed that this—commonly termed the Cherry Plum—makes a quick and good hedge, and we think it very likely to do so, though we have not had actual experience on the point. Plants are raised from seed, but as they cannot be ready for planting until four or five years after sowing you will perhaps rather purchase them from a nurseryman. You can get all the information you need on the question of artificial manures from a merchant or dealer in Reading. It is not our custom to procure and publish prices of articles when persons can obtain the information for themselves as easily as we can.

**Forcing Asparagus and Seakale** (*Edwin*).—The most convenient plan of forcing Asparagus is to transfer it to a light pit provided with a moderate bottom heat, and duly covered with light soil; allowed as much sunlight and air as possible, an abundant supply of excellent Asparagus may be obtained. This system of removal may be considered extravagant when the destruction of the roots is considered; but its adoption in some instances could not fail to be of use, as a system might be originated of substituting young and healthy stock in place of anciently established and worn-out plants, whose occupation of the land has continued for many successive years. There is no question but that the best-flavoured and finest Seakale is obtained from established plants subjected to no system of forcing, but merely covered with light earth or sand, and brought forward by the natural warmth of the season; but Seakale is demanded at Christmas, and a more active system of procedure is imperative. The old plan of covering with pots and supplying a stimulating heat by a body of leaves is still preferred by many. The more recent plan of taking up the roots and forcing them in the Mushroom-house, or any dark place, has its recommendations both in regard to economy and rapidity of production; only, if the precautions for excluding light be not effectual the flavour will be deteriorated.

**Odontoglossum grande** (*Amateur*).—If absolutely necessary the plant may be repotted now, but we should prefer delaying the operation for a month or two. This species succeeds best in a pot, and you may employ a compost of peat and sphagnum moss intermixed with liberal and carefully placed drainage. Fresh living moss should be placed over the roots and surface of the compost. The plant must never be permitted to become dry, as it speedily suffers from neglect in this matter.

**Names of Fruits** (*H. H. Jones*).—1 is Sweeny Nonpareil; 2, Mannington's Pearmain; 3, not known. (*Crowder & Sons*).—Loan's Pearmain. (*J. Hartland*).—1, not known. 2, Pitmaston Nonpareil. 3, Franklin's Golden Pippin. 4, Lord Burghley. 5, Golden Harvey. 6, Morris' Nonpareil Russet. The plant is *Montbretia crocosmæflora*. (*J. D.*).—3, Trumpington. We cannot recognise any of the other Apples, they are probably local varieties; 12 is not Golden Harvey. The Pear is Vicar of Winkfield.

(*H. T. Frere*).—1, Fearn's Pippin; 2, Court Pendû Plat; 3, Blenheim Pippin; 5, Dumelow's Seedling; 4 and 6, not known.

**Names of Plants** (*W. L.*).—1, *Mahonia aquifolia*. 2, the fungus is *Stereum purpureum*. 3, the *Poinsettia* is included in the natural order *Euphorbiaceæ*.

## COVENT GARDEN MARKET.—DECEMBER 24TH.

BUSINESS very quiet, with little alteration in prices. Grapes improving in value.

### FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples .. .. .	½ sieve	2 6 to 3 6	Oranges .. .. .	100	4 0 to 6 0
Chestnuts .. .. .	bushel	16 0	Peaches .. .. .	per doz.	0 0
Cobs, Kent .. ..	per 100 lbs.	60 0	Pears, kitchen ..	dozen	1 0
Currants, Red ..	½ sieve	0 0	„ dessert .. ..	dozen	2 0
„ Black .. .. .	½ sieve	0 0	Pine Apples English ..	lb.	1 6
Figs .. .. .	dozen	0 0	Plums .. .. .	½ sieve	0 0
Grapes .. .. .	lb.	1 6	Strawberries .. ..	lb.	0 0
Lemons .. .. .	case	10 0	St. Michael Pines ..	each	3 0

### VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes .. ..	dozen	2 0 to 4 0	Mushrooms .. ..	punnet	0 0 to 1 6
Beans, Kidney ..	lb.	0 3	Mustard and Cress ..	punnet	0 2
Beet, Red .. .. .	dozen	1 0	Onions .. .. .	bunch	0 3
Broccoli .. .. .	bundle	0 9	Parsley .. .. .	dozen bunches	2 0
Brussels Sprouts ..	½ sieve	2 6	Parsnips .. .. .	dozen	1 0
Cabbage .. .. .	dozen	0 0	Potatoes .. .. .	cwt.	4 0
Capsicums .. ..	100	1 6	„ Kidney .. ..	cwt.	4 0
Carrots .. .. .	bunch	0 3	Rhubarb .. .. .	bundle	0 4
Cauliflowers .. ..	dozen	2 0	Salsafy .. .. .	bundle	1 0
Celery .. .. .	bundle	1 6	Scorzonera .. ..	bundle	1 6
Colicworts .. ..	doz. bunches	2 0	Seakale .. .. .	per basket	2 0
Cucumbers .. ..	each	0 4	Shallots .. .. .	lb.	0 3
Endive .. .. .	dozen	1 0	Spinach .. .. .	bushel	2 0
Herbs .. .. .	bunch	0 2	Tomatoes .. .. .	lb.	0 6
Leeks .. .. .	bunch	0 3	Turnips .. .. .	bunch	0 4
Lettuce .. .. .	dozen	1 0			



## PIG MANAGEMENT.

(Continued from page 562.)

IN the ordinary course of management enough pigs are reared upon the home farm to supply every possible requirement for home consumption, both of porkers and of bacon pigs. To do this perfectly there must always be a surplus over all extraordinary demands which may and do frequently arise, such surplus being easily disposed of when not wanted. In addition to this it is worthy of our serious consideration how many more pigs may be profitably bred for sale, and some degree of caution must be exercised in the matter, for it seldom answers to rush into extremes; rather should we aim to maintain a fair proportion of cattle, sheep, and pigs. If this is done it will be found in many instances that not nearly so many pigs are reared annually as might be managed without undue interference with other matters. Taken in this, the only safe way, it quickly resolves itself into a question of ways and means—convenience, food, labour, and a market. Most wisely are we taught that “The great art of remunerative stock-keeping is the same for all animals when kept for meat-production. From the period of birth until slaughter there should on no account be the slightest stagnation in growth or decline in condition rendered possible. This should be avoided as a fatal stumbling-block to success; and no stock can be kept so as to pay well for their food unless this art be well understood and its principles acted upon.” Acting upon this sound advice, we take care, after weaning pigs, to keep them in sleek condition by giving them enough wash or milk, slightly thickened with pollard, in addition to a vegetable diet, or when Potatoes can be had they are cooked and mashed as a substitute for corn.

Of vegetables nothing comes amiss—all the Cabbage tribe, green Tares, Clover, grass, and Prickly Comfrey; and of roots, Parsnips, Carrots, Swede Turnips, and best of all, Mangolds, of which we may have a useful supply during the greater part of the year. There must, however, be systematic arrangement in reference to the growth of such crops specially for the pigs, and not the too common careless practice of letting them have odds and ends of crops only. If it is worth while keeping pigs at all they certainly must have a share of our attention in our plans for cropping the farm in the coming season. The most important crop for them is Peas, which when harvested and stacked, may be used by giving the unthreshed haulm to pigs and letting them extract the Peas, which they do so thoroughly that not one of them is wasted, and they also consume much of the haulm.



A stack or two of Peas should also be threshed to afford a supply both of whole and ground Peas, to be used principally for fattening pigs, and any surplus quantity can always be sold. Nicety of calculation in reference to live stock or growing crops is never quite reliable; crops fail, animals die, notwithstanding our best efforts; and even with flourishing crops and healthy animals, we can hardly bring about results with mechanical precision, but we may do much to insure success by the exercise of forethought and care.

Small-boned porkers not over 10 lbs. in weight command the highest price in the best markets. Particular attention should therefore be given to this class, and a more generous diet adopted for it from the weaning than for the larger breeds. Milk thickened with meal, whole Peas and Mangolds, answer perfectly for them, and they are ready for use at from sixteen to twenty weeks of age. Porkers do not increase in weight so fast as older pigs. Ignorance of this fact has led to much erroneous calculation of the cost of pig-keeping, for while a porker of twenty weeks may only show an average increase in weight of half a pound daily over the whole period of its existence, yet a pig of thirty to thirty-five weeks that has been regularly well fed, will show a daily average of double that weight.

The process of curing pork for hams and bacon is simple and easily acquired. Hams weighing 20 lbs. or a pound or two more when dried are best liked, and this is our guide as to the size and age of pigs for that purpose. Pigs of 30 stones of 8 lbs., dead weight, are large enough, and killing begins when they are thirty weeks old. The carcasses hang in the slaughter house twenty-four hours, they are then weighed, the heads cut off, and the remainder of the sides trimmed for salting in a simple pickle of salt with a little saltpetre. For the hams we have a separate pickle, consisting of 1 lb. of salt, 1½ oz. saltpetre, 1½ oz. bay salt, 1½ oz. Shallots, half oz. Coriander seed, half oz. Juniper berries bruised, quarter pound beef suet, and 2 lbs. treacle for each ham. We use large glazed pans, each containing two hams with the pickle, in which they are turned daily for a month. For the bacon we have large wooden troughs lined with sheet lead, each trough being deep enough to contain two flitches, which also remain in pickle a month. Bacon and hams are then taken to the smoking house and are kept there for two months, oak logs and sawdust only being used for the smoking. Both bacon and hams so cured keep well, and it is a rare occurrence for any of it to prove faulty. The hams are delicious in flavour, and we have repeatedly heard connoisseurs pronounce them to be perfect, and altogether superior to the ordinary ham of commerce.

### CHRISTMAS POULTRY AND PRICES.

PLENTIFUL supplies, prime quality, and low prices are announced in the reports of Christmas supplies in the metropolitan markets. Like ourselves, farmers are not unfrequently puzzled at prices for which prime birds have been purchased in London—prices altogether below ordinary country rates, and which long ago induced us to ascertain the fact that the bulk of such poultry is imported from the Continent, and being perishable it must be sold for what it will produce. Master and servant both should know this, so that complaints of exorbitant charges for the household supply may not appear unjust from the one and puzzling to the other.

Quoting from the current reports we have the statement that "so heavy are the supplies, that prices for turkeys and geese will rule at least 1d. per lb. cheaper than the fixed quotations made by co-operative stores to their members." The competition of the stores is very hardly felt by the ordinary retailer; but this year, at all events, there will be no difficulty in underselling these associations. "There would be no agricultural depression if farmers fed poultry," is the allegation of the salesmen who year by year are increasing their importations from the Continent. When French consignments first came to hand many dealers would not look at a French goose, but these same men are now buying hardly any other variety. The Normandy geese are plump, well fed, and of excellent quality. They are bred by farmers having from five to a hundred acres. A Normandy goose weighs from 12 lbs. to 20 lbs., and can be retailed at 7d. per lb., the wholesale price having been on Saturday 6d. to 6½d. Even Russia is not too far away to compete, and the supplies from Italy are yearly increasing.

From Ireland London receives many, the best coming from Wexford, on account of the greater mildness of the climate. Very few home-bred geese get into the market, the abolition of commons and the annexation of country roadsides by neighbouring landowners having destroyed much of the pasturage formerly supporting flocks. Several thousands annually, however, are fattened in England, in the Colchester district more

particularly. These lean geese are bought in Holland at from 2s. 6d. to 3s. 3d. each. The feed or "board" is cheap in Essex, and the birds when fattened fetch from 5s. 6d. to 10s. Three large feeders have about 12,000 ready for market. Turkeys killed and plucked come from Normandy in long cases, cleanly packed in straw, and if the weather be fairly suitable they remain in good condition for three weeks. French turkeys are considered very fine. London also obtains this class of poultry from Russia and Italy. Ireland, again, is a producer on an extensive scale, and the English counties of Norfolk, Suffolk, Lincolnshire, Yorkshire, and Essex, in moderate quantities, likewise furnish the metropolis with its Christmas turkeys. Prices will probably vary, as they have always done, from 3s. 6d. to two guineas. The wholesale price on Saturday night was 7d. to 7½d. per lb. for birds weighing from 8 lbs. to 12 lbs. Retail prices are expected to range according to the scale appended:—Under 10 lbs., 9½d. per lb.; 12 lbs., 10½d.; 14 lbs., 11½d.; 16 lbs., 1s. 1d.; and under 18 lbs., 1s. 2½d.

Fowls at Christmastide always command "long" prices. Irish chickens from Wexford are much better fed than used to be the case, and consequently are in high favour with the dealers. The quality is improving annually, and Ireland certainly renders important service to the sister country in the matter of poultry supplies. In a few parts of England, however, the breeding of fowls is considered profitable—for example, the counties of Norfolk, Suffolk, Cambridge, Lincoln, and York. The finest qualities of fattened chickens and capons are of Sussex and Surrey origin. These chickens, or rather small fowls, cost about 2s. a head, are fattened for a month, and sell for 3s. to 4s. Other chickens may be had from 1s. 6d. to 2s. wholesale. Among foreign countries, Russia, Austria, and Hungary send us fowls. Aylesbury ducks require even more delicate treatment than turkeys. The fens of Norfolk and Suffolk, and the counties of Lincoln and York, also furnish large quantities. Irish ducks are of unequal quality. The Russian are often eaten at English tables. Of the other description of poultry now in season, Holland despatches to this country wild fowl of every variety; Austria and Hungary send hares; and Russia hares, partridges, and black game. The latter also come from Norway, from whence, too, we receive white hares. Pigeons in increasing numbers are arriving from Italy.

**BIRMINGHAM AGRICULTURAL EXHIBITION SOCIETY.**—A meeting of the Council was held at the Queen's Hotel, Birmingham, on Thursday last, the Mayor presiding. A letter was read from Lord Clarendon (the President), announcing that His Royal Highness the Prince of Wales had graciously consented to accept the office of President of the Society for 1885. On the motion of the Mayor, seconded by Mr. Holliday, it was unanimously resolved that the Earl of Clarendon be requested to convey to His Royal Highness the hearty thanks of the Council for the honour conferred upon them, and to express their due appreciation of the benefits likely to accrue to the Society and the agriculturists of the Midlands by the holding of an exhibition under the patronage of His Royal Highness. The date of show was fixed for November 28th, 30th, and three following days; and the Council meet early in the spring to arrange the prize list, which, it is intended, shall be on a very liberal scale, and it is hoped that the President may be present on one or more days. Captain Heaton having won the £50 Game cock challenge cup with a bird he had recently purchased, has generously waived his right to the same, and left the cup open for future competition at Birmingham. Several matters of routine in connection with the late show were disposed of. The shorthorn show and sale is on March 4th, 5th, and 6th, for which entries are now being made and preparations commenced.

### METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32' 40" N.; Long. 0° 8' 0" W.; Altitude, 111 feet.

DATE.		9 A.M.					IN THE DAY.				Rain
1884. December.	Barometer at 32° and Sea Level	Hygrometer.		Direction of Wind.	Temp. of Soil at 1 foot.	Shade Temperature.		Radiation Temperature.			
		Dry.	Wet.			Max.	Min.	In sun.	On grass.		
	Inches.	deg.	deg.		deg.	deg.	deg.	deg.	deg.		
Sunday .....	14	29.999	51.7	48.7	S.W.	45.9	53.2	50.9	56.3	48.4	0.345
Monday .....	15	29.765	47.2	45.6	W.	45.8	47.5	49.0	51.2	33.7	—
Tuesday .....	16	30.093	34.2	33.0	S.W.	43.6	43.4	31.8	49.4	26.1	0.124
Wednesday ..	17	29.607	37.4	36.2	S.W.	42.2	43.2	33.1	57.6	29.3	—
Thursday ....	18	29.989	37.8	34.9	S.W.	40.8	49.8	30.2	49.8	23.9	0.239
Friday .....	19	29.760	40.8	38.1	W.	40.8	49.2	36.9	60.9	32.3	0.132
Saturday ....	20	28.890	40.0	38.2	N.W.	41.2	45.3	38.3	45.4	32.5	0.077
		29.700	41.3	39.2		42.9	47.4	37.3	52.9	32.3	0.917

### REMARKS.

14th.—Dull morning; wet afternoon and evening.  
 15th.—Heavy rain early; fair day.  
 16th.—Fair bright winter's day.  
 17th.—Rain early; fine bright day; cold night.  
 18th.—Wet morning, then alternate rain and clear sky; lightning at night.  
 19th.—Fine and bright.  
 20th.—Wet morning; rest of day fine.  
 Another wet week, with a very rapid fall of the barometer on the last day. Temperature lower than in the previous week but still above the average.—G. J. SYMONS.























